

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED KLEINFONTEIN SETTLEMENT

Kleinfontein Portions 38, 90, 96 and Farm Kleinfontein 368
JR and Portions 63, 67, 68 and
RE of Portion 14 of the Farm Donkerhoek 365 JR

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Part 3



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TABLE OF CONTENTS

<i>I.</i>	<i>DECLARATION OF INDEPENDENCE</i>	2
<i>II.</i>	<i>DECLARATION OF INDEPENDENCE OF REVIEWER</i>	3
1	INTRODUCTION	6
2	ASSUMPTIONS AND LIMITATIONS	8
3	SITE LOCATION AND DESCRIPTION	8
3.1	LOCATION	8
3.2	HISTORICAL AND CURRENT USE OF THE PROPERTY	8
3.3	VEGETATION DESCRIPTION	9
3.4	AQUATIC DESCRIPTION	11
3.5	CATCHMENT DELINEATION	12
3.6	CLIMATIC CONDITIONS ON THE SITE	13
3.7	TOPOGRAPHY	13
4	METHODS FOR ECOLOGICAL ASSESSMENT	13
4.1	VEGETATION ECOLOGY ASSESSMENT	13
4.2	FAUNA ASSESSMENT	14
5	RESULTS	14
5.1	VEGETATION ECOLOGY ASSESSMENT	14
5.2	CONNECTIVITY AND CORRIDORS	17
5.3	FAUNAL ASSESSMENT	21
5.4	POLLINATION	21
5.5	ROADS AND SERVICES INSTALLATION AND OPERATION	22
6	CONCLUSION AND MITIGATING RECOMMENDATIONS	23
7	REFERENCES	26

FIGURES:

FIGURE 1: LOCALITY MAP OF THE STUDY AREA.	9
FIGURE 2: VEGETATION TYPES IN WHICH THE STUDY SITE IS SITUATED	9
FIGURE 3: CATCHMENT AND HYDROLOGICAL DATA FOR THE STUDY SITE.	11
FIGURE 4: THE BROAD DELINEATION OF THE CATCHMENT OF THE STUDY SITE.	12
FIGURE 5: THE TOPOGRAPHICAL ASSESSMENT OF THE STUDY SITE	13
FIGURE 6: THE VEGETATION UNIT MAP OF THE STUDY SITE.	15
FIGURE 7: THE TRANSECT DIRECTION.	16
FIGURE 8: THE GRAZING RESPONSE ASSESSMENT OF THE STUDY SITE	16
FIGURE 9: THE PLANT SUCCESSION OF THE STUDY SITE.	17
FIGURE 10: THE LOCATION OF RIDGES AND THE CORRIDOR AS PER GDARD C-PLAN 3.3	18
FIGURE 11: THE CONNECTIVITY DISRUPTERS AND CORRIDORS OF THE LARGER STUDY AREA.	19
FIGURE 12: THE RELATION OF THE RIDGE ON THE STUDY SITE TO OTHER RIDGES IN THE AREA.	20
FIGURE 13: THE LOCATION OF SENSITIVE AREAS	22
FIGURE 14: THE RIDGE ON THE STUDY SITE WITH THE PROPOSED 200M BUFFER AREA.	23
FIGURE 15: SENSITIVITY MAP OF THE RIDGE ON SITE WITHOUT THE CORRIDOR	23
FIGURE 16: THE RIDGE OF THE STUDY SITE INCLUDING THE CORRIDOR	24

TABLES:

TABLE 1: CLASSIFICATION CRITERIA FOR GAUTENG RIDGES	7
TABLE 2: THE DESCRIPTION OF THE DIFFERENT VEGETATION TYPES FOUND ON SITE	10
TABLE 3: THE PERCENTILE LAND USE OF THE CATCHMENT OF THE STUDY SITE	12
TABLE 4: THE SPECIES LIST WITH GRAZING RESPONSES AND SUCCESSION RATINGS.	15
TABLE 5: MAMMALS OBSERVED ON THE STUDY SITE	21

1 Introduction

Galago Environmental CC. was appointed to assess the ecological conditions of the ridge on portion 4 of the farm Kleinfontein 368 JR (henceforth known as the “study site”). The proposed activity on the site is the establishment of small holding plots on the property each of approximately 4.5 ha.

The study will include the assessment of the floral as well as faunal aspects of the ridge occurring on site. An investigation into the hydrology of the site and regional setting, including corridors, will also be conducted.

Ecology is the study of the relationship of organisms to their environment and to one another i.e. ecology is the study of interactions (Brewer 1992). This forms the base for ecological assessments. To determine the impact that abiotic factors have on a study area, the biotic factors are measured and combined with climatic data, land use patterns, as well as faunal and floral aspects to provide an indication of the ecological state of the ridge.

Ridges are defined by the Gauteng Department of Agriculture and Rural Development (GDARD) in the document Department Policy Final Draft: Development Guidelines for ridges, Gauteng Department of Agriculture, Conservation and Environment (GDACE, 2001):

“The term “ridge” refers loosely to hills, koppies, mountains, kloofs, gorges etc. and the essential characteristic defining these topographical features is the slope of the site, whereby any topographical feature in the landscape that is characterised by slopes of 5° or more (as determined by means of a GIS digital elevation model) is defined as a ridge” (GDACE, 2001).

Spatially heterogeneous landscapes provide larger habitat variations than a spatially homogenous landscape, and thus the importance of ridges as biodiversity hotspots cannot be replicated. Spatially, the orientation of ridges is important. The orientation of the ridge in relation to the sun will influence the vegetation composition on the different sides of the ridge, since the duration of daylight varies according to the spatial aspect of the ridge. The orientation of the ridge will also influence the rainfall pattern across the ridge. The geology and erodibility of the soils, as well as the slope, will influence the water velocity, retention and nutrient leaching rates.

In the grassland biome (most parts of Gauteng Province is covered by this biome), tree composition is low (Tainton, 1999) and most of the trees (for example *Celtis africana*, *Diospyros whyteana* and *Euclea crispa*) are found exclusively in kloofs and on rocky outcrops as well as on the crests of ridges (Tainton, 1999; Mucina and Rutherford, 2007). With the exception of alien species of trees, these few trees provide roosting as well as nesting habitat for arboreal fauna.

Due to the spatial location of ridges, they offer routes for movement by species of fauna. Ridges are mainly unfragmented natural landscape features, only divided by fencing and road infrastructure. In urban ecology systems, these unfragmented features are normally only provided by ridges and riparian areas. These corridors are important to ensure population connectivity, genetic heterogeneity and repopulation of species into areas from where they have become extinct. Ridges also provide unique habitat, and especially rocky outcrops provide good habitat to rupicolous species of herpetofauna.

The location of ridges as the highest point in the local environment also has an influence on the hydrology of systems. Ridges are watershed dividers and are important since they are located in the upper micro-catchment of the lower and quaternary macro-catchment. The

land use on and around ridges will influence the quantity and quality of water released into the system.

Gauteng province has been subjected to large developments, including the transformation of ridges for development. The extent of development on ridges is also used by GDARD to determine the class of a ridge, where area of development and/or disturbance is expressed as a proportion of the total area of ridge (Table 1).

Table 1: Classification criteria for Gauteng ridges (modified from GDACE, 2001).

Ridge Type	Percentage of Gauteng ridges	Classification criteria (amount of development/disturbance)
Class 1	47%	0-5%
Class 2	40%	5-35%
Class 3	8%	35-65%
Class 4	5%	65-100%

Ridges tend to provide habitat to species that are sedentary and/or habitat specialists, and hence often endemic and threatened by extinction. In Gauteng province, 65% of threatened floral species occur on ridges, with 42% endemic to ridges and 71% of Gauteng's endemic flora occurring on ridges. At least three species of threatened mammals occur on ridges in Gauteng, most importantly Juliana's Golden Mole (*Amblysomus julianae*). Avifaunal species of conservation concern dependant on ridges include Cape Vulture (*Gyps coprotheres*), Peregrine Falcon (*Falco peregrinus*), Lanner Falcon (*Falco biarmicus*), [Melodious Lark (*Mirafra cheniana*), Cape Eagle Owl (*Bubo capensis*), Short-toed Rock Thrush (*Monticola brevipes*) and Ground Woodpecker (*Geocolaptes olivaceus*). Herpetofauna also utilise ridges as habitat and due to the increased protection provided in these habitats. Three rare reptile species (GDACE 2001) and two frog species (the Northern Pygmy Toad (*Bufo fenoulheti*) and Common River Frog (*Rana angolensis*) occur in kloofs (GDACE, 2001).

Due to the large habitat variability provided by ridges, the use of ridges by invertebrates is well known. Many threatened or near threatened species of invertebrates occur on ridges. A good example is the Heidelberg copper butterfly (*Chrysochrysis aureus*) found initially on the southern slopes of what is now the Alice Glockner Nature reserve. The rare and highly endangered Fruit Chafer (*Ichneustoma stobbiai*) occurs only on rocky, sandy, grassland-dominated ridges and slopes. The Highveld Blue (*Lepidochrysops praeterita*) is another butterfly that also occurs exclusively on ridges (GDACE, 2001).

Ridges tend to provide prime real estate due to their topographical location and aesthetically pleasing environments, and also attract tourists and recreational users. This increases the pressure on ridges to be developed. Due to the threatened state of so many species, conservation importance is placed on these species and the ridge habitat they occupy is set out as priority conservation areas. To ensure this when working in the Gauteng province, reports are written in line with the Gauteng Department of Agriculture and Rural Development's (GDARD) minimum requirements for biodiversity assessments (Version 2, 2012) as well as GDARD Conservation Plan (C-Plan) version 3.3 of 2011. This document provides guidelines for the minimum mitigation measures when development is proposed for all biodiversity assessments, including for ridges, wetlands and specific fauna and flora. To ensure the conservation of the species, buffer zones are recommended around areas providing habitat to the threatened species. According to the GDARD minimum requirements for biodiversity assessments (2012), Class 1 ridges must be protected by a 200 meter buffer zone.

2 Assumptions and limitations

Even though every care is taken to ensure the accuracy of this report, environmental assessment studies are limited in scope, time and budget and therefore largely subjective. Discussions and proposed mitigations are to some extent made on reasonable and informed assumptions, built on *bone fide* information sources, and deductive reasoning and personal experience.

Due to accuracy concerns of the “recreational use grade” Garmin Etrex 20 used for field surveys, a calibration point is set at the beginning as well as at the end of the study site visit. The GPS is placed on exactly the same place and a waypoint added. The distance between the points provides an indication of the accuracy of the GPS. The result is an accuracy of 3.2 meters. Due to the scale of the remote imagery used (Google Earth Imagery), as well as the accuracy of the handheld GPS unit used to delineate wetlands in the field, the delineated ridge and wetland boundaries cannot be guaranteed beyond an accuracy of about 15m on the ground.

Deriving a 100% factual report based on field collecting and observations can only be done over several years and seasons to account for fluctuating environmental conditions and migrations. Since environmental impact studies deal with dynamic natural systems, additional information may come to light at a later stage.

Galago Environmental can thus not accept responsibility for conclusions and mitigation measures made in good faith based on own databases or on the information provided at the time of the directive. This report should therefore be viewed and acted upon with these limitations in mind.

3 Site location and description

3.1 Location

The study site, ±89 ha in extent, is situated within the 2528CD quarter degree grid cell south-west of the N4/R515 Rayton interchange, north-east of Pretoria within Gauteng Province (25°48'40.99" S and 28°28'13.40" E). The study site is situated at an altitude of about 1 440 metres above sea level, sloping gradually downwards to the south. The proposed development of the site is for the establishment of small holdings of approximately 4.5 ha each.

3.2 Historical and Current use of the property

The largest portion of the study site consists of *Acacia*-dominated woodland. The primary land use is grazing by livestock. One homestead occurs on site as well as a railway line and embankment, built up approximately 5 meters above the natural substrate. The site is fenced with 21-strand game fencing.

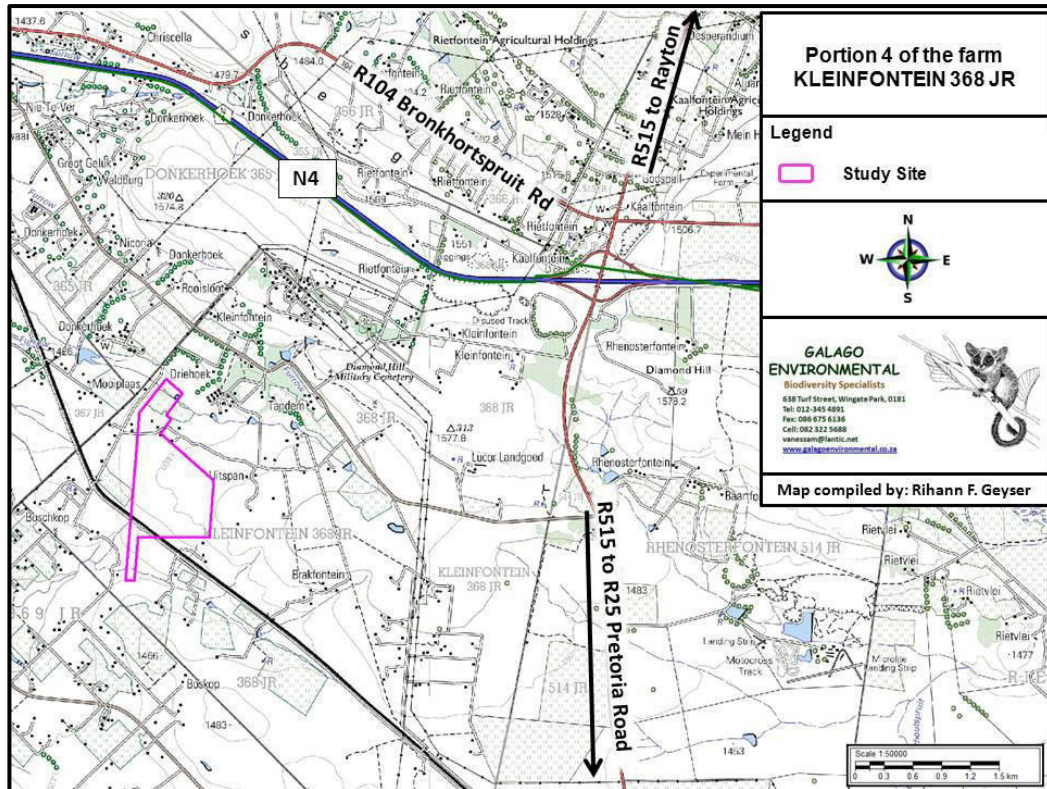


Figure 1: locality map of the study area.

3.3 Vegetation description

The study site is situated within two vegetation types (Figure 2), which are described by Mucina and Rutherford (2007) in Table 2 as follows:

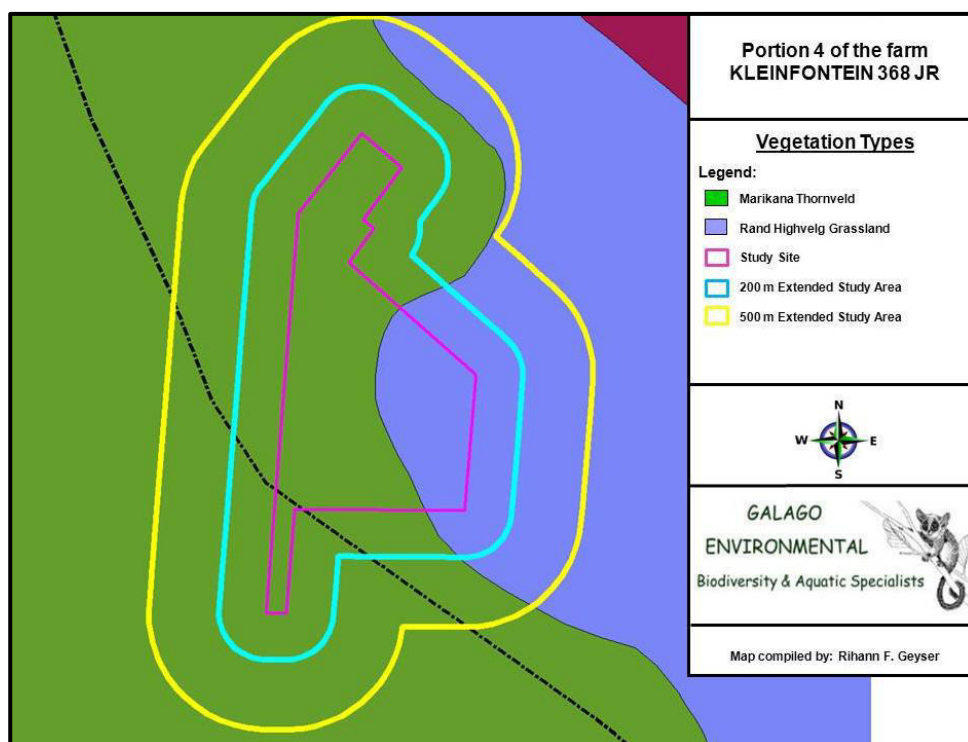


Figure 2: Vegetation types in which the study site is situated according to Mucina and Rutherford (2006).

Table 2: The description of the different vegetation types found on site according to Mucina and Rutherford (2006).

	Rand Highveld Grassland (Gm 11)	Marikana Thornveld (SVcb 6)
Vegetation type and landscape	<p>The study site is situated within the Mesic Highveld Grassland Bioregion of the Grassland Biome and more specifically within the Rand Highveld Grassland (Gm 11) vegetation unit.</p> <p>The landscape is highly variable, with extensive sloping plains and a series of ridges slightly elevated over undulating surrounding plains. The vegetation is species-rich, wiry, sour grassland alternating with low, sour shrubland on rocky outcrops and steeper slopes. Most common grasses on the plains belong to the genera Themeda, Eragrostis, Heteropogon and Elionurus. A high diversity of herbs, many of which belong to the Asteraceae, is also a typical feature. Rocky hills and ridges carry sparse (savannoid) woodlands with <i>Protea caffra</i> subsp. <i>caffra</i>, <i>P. welwitschii</i>, <i>Acacia caffra</i> and <i>Celtis africana</i>, accompanied by a rich suite of shrubs among which the genus <i>Searsia</i> (especially <i>S. magalismonata</i>) is prominent.</p>	<p>The study site is situated within the Central Bushveld Bioregion of the Savanna Biome. More specifically within the Marikana Thornveld (SVcb 6) vegetation unit.</p> <p>The Marikana Thornveld consists of open <i>Acacia karroo</i> dominated woodland growing in valleys, and on slightly undulating plains and some lowland hills. Shrubs are denser along drainage lines, and on termitaria and rocky outcrops or other areas that are protected from fire.</p>
Climate	<p>The study site is situated in a strongly seasonal summer-rainfall, warm-temperate region with very dry winters. The rainfall ranges between 570 and 800 mm of rainfall (average 654 mm) p/a and is slightly lower in the western regions. The incidence of frost is higher in the west (30-40 days) than in the east (10-35 days).</p>	<p>The study site is situated in a summer rainfall region with very dry winters. The rainfall varies between 600 and 750 mm. Frost occurs frequently in winter but less commonly on the ridges and hills. Temperatures vary between 32.8°C in summer (January) and -1.8°C in winter (July).</p>
Conservation status of habitat	<p>This habitat type is considered endangered and is poorly conserved (only 1%). Almost half has been transformed, mostly by urbanisation, cultivation, plantations or dam-building. Cultivation may also have had an impact on an additional portion of the surface area of the unit where old lands are currently classified as grasslands in land-cover classifications and poor land management has led to degradation of significant portions of the remainder of this unit. Scattered aliens (most prominently <i>Acacia mearnsii</i>) occur in about 7% of this unit. Only about 7% has been subjected to moderate to high erosion levels</p>	<p>Marikana Thornveld is considered endangered.</p>

3.4 Aquatic description

The study site falls in the catchment of the Pienaars River, flowing into the Roodeplaat Dam. The study site lies in the A23A catchment (DWA RQS). See Figure 3 for the hydrology location.

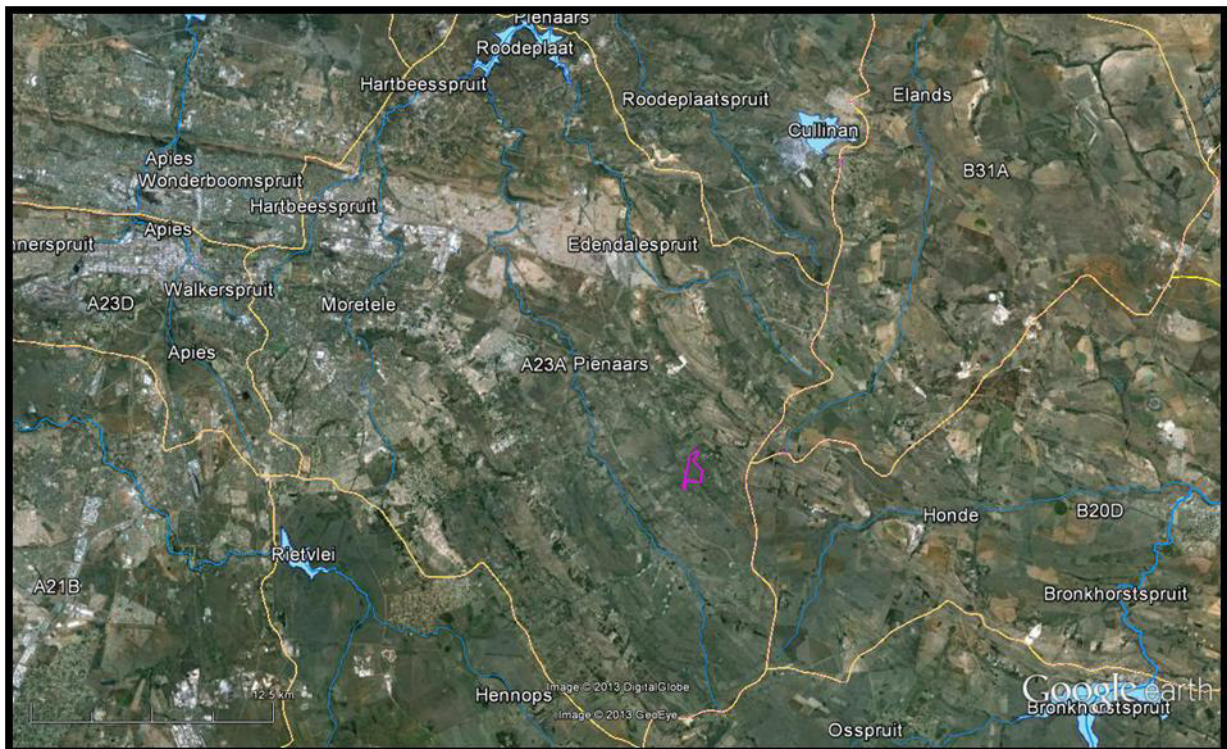


Figure 3: Catchment and hydrological data for the study site, as available from DWA RQS services.

The generic Level 1¹ description of the site, as from DWAF (2007), lists the system as part of the Crocodile west river and is characterised by the following:

This is generally a low laying, dry to arid, hot region with virtually no perennial streams originating in the area itself. Perennial rivers that traverse this region include the Crocodile (west), Marico, Mokolo, Lephala, and Mogalakwena. The Pienaars River is the closest large river near the site.

- Mean annual precipitation: Low to arid.
- Coefficient of variation of annual precipitation: Moderately high to high
- Drainage density: Mostly low but with some areas in the north having a high drainage density.
- Stream frequency: Mostly low to medium, but high in north-eastern areas.
- Slopes <5%: Generally, >80% of the area.
- Median annual simulated runoff: Very low to low.
- Mean annual temperature: High to very high

¹ **Level I:** This level of typing is based on the premise that ecosystems and their components display regional patterns that are reflected in spatially variable combinations of causal factors such as climate, mineral availability (soils and geology), vegetation and physiography. In South Africa, physiography, climate, geology, soils and potential natural vegetation, have been used as the delineators of Level I (DWAF 2007).

3.5 Catchment delineation

Aquatic ecosystems, including wetlands and rivers in South Africa with its high evapo-transpiration rates (which are usually nearly double the regional rainfall; Schultze R.E., 1997), depend on catchments to provide runoff and groundwater flows. Catchments can be defined as the action by topography of collecting water in an area, from the highest topographical point to the lowest collection point (SANBI, 2009). The condition of the catchment thus has a profound impact on the nature of the flows entering the aquatic ecosystem. Therefore the extent of the catchment is determined and its condition assessed by identifying possible impacts and sources of pollution. The catchment of the wetlands on site and flow directions are indicated in Figure 4, the catchment delineation.

Both the wetland and riparian areas of the study site form part of a larger HGM drainage network and thus share a larger catchment. See Table 3 for the catchment-use descriptions and proportional percentages.

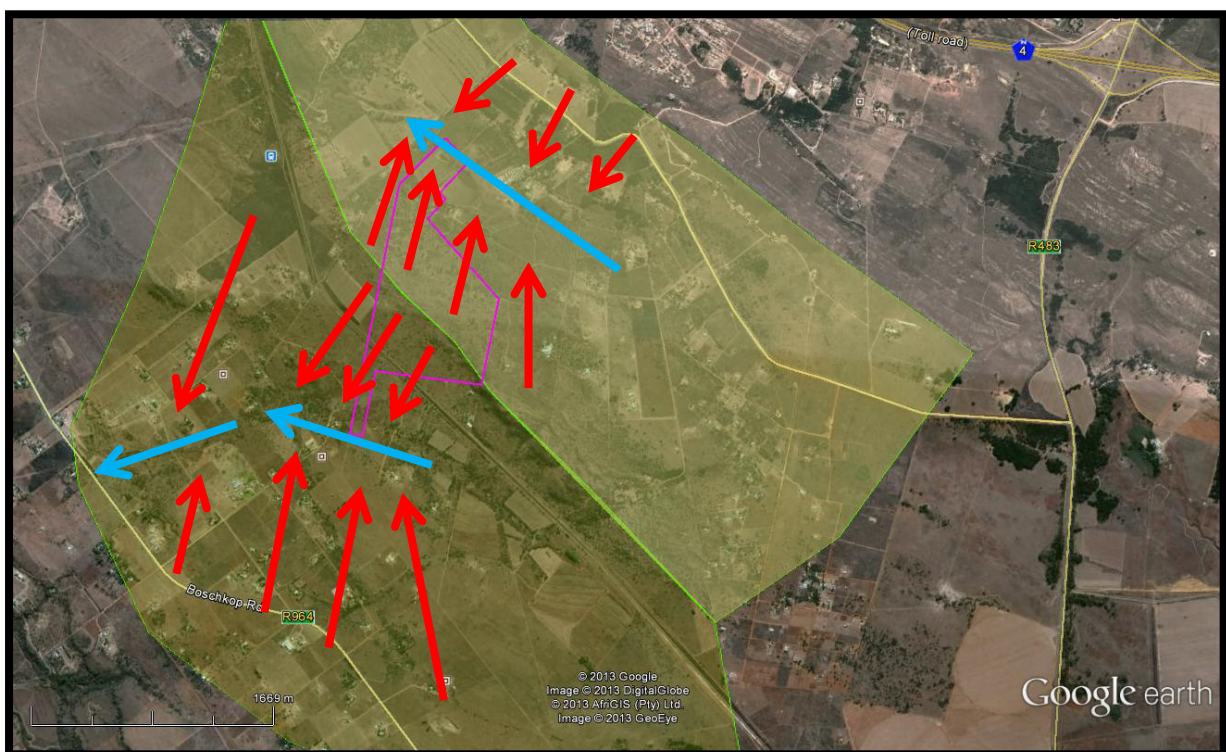


Figure 4: The broad delineation of the catchment of the study site and drainage direction (arrows). The combined catchment is approximately 3200 ha in size.

Table 3: The percentage land use of the catchment of the study site.

Catchment land use	Percentage
Agriculture (Cultivation)	5
Agriculture (Grazing)	30
Housing (small holdings)	10
Roads	15
Natural (reference condition)	40
Total	100

3.6 Climatic conditions on the site

The climate of the site is typical of the Highveld region (Mucina and Rutherford 2006). Precipitation is usually in the form of thundershowers, often accompanied by hail in the summer months, and followed by dry winters. The mean annual precipitation for the area is between 600 and 700 mm, with the dominant precipitation received during the months of October to March.

The area generally receives little rainfall during the months from April to September. The highest monthly temperature of 35.3°C is recorded in January and the lowest monthly temperature of -3.3°C is recorded in July. The area is significantly colder than Pretoria itself, with winter temperatures easily dropping to 4 degrees below freezing point with extensive frost during winter months.

3.7 Topography

The site is divided by the ridge in the middle of the site. The site has a general slope from north to south, with the ridge a highpoint in the middle. Using Google Earth's "show elevation profile" function, the average slope of the ridge is calculated at 11% and the rest of the site at 2.7% (Figure 5).

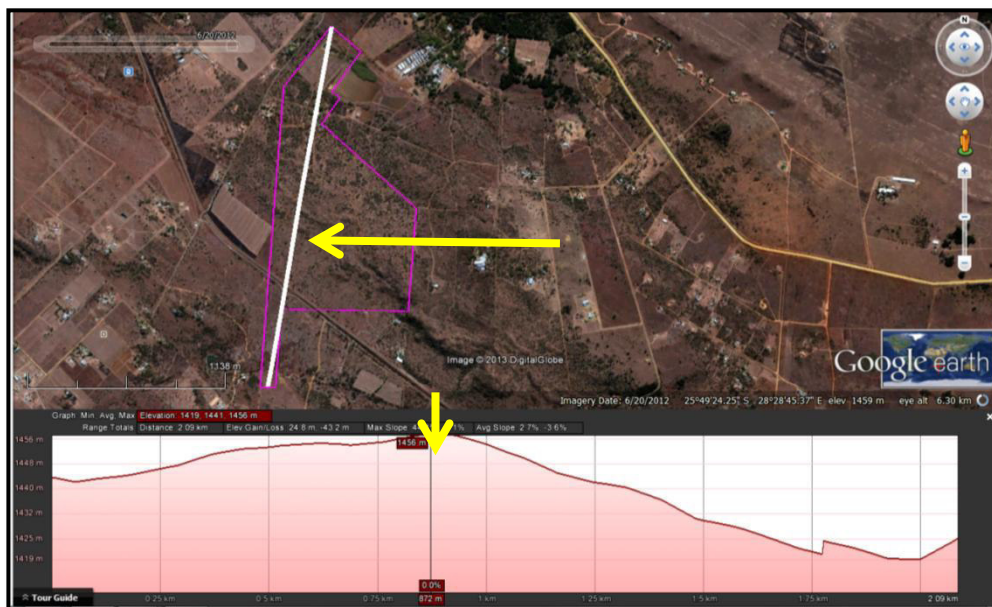


Figure 5: The topographical assessment of the study site and Google Earth's elevation profile. The yellow arrow indicates the highest point on the profile.

4 Methods for ecological assessment

4.1 Vegetation ecology assessment

To determine the ecological condition of the grassy component of the herbaceous layer on the study site, a step-point transect of 100 samples was done. The species' name is recorded at each point, in conjunction with other important observations. The sample set is then classified into sets of broad groups namely (Tainton, 1999):

- **Decreaser:** Species that predominated in veld that is in a good condition, but whose abundance declines when veld condition deteriorates through over and under-utilization.
- **Increaser i:** Species not abundant in good condition veld, but whose abundance increases when veld is under-utilised.

- **Increaser ii:** Species not abundant in veld in good condition but whose abundance increases when veld is over-utilised.
- **Increaser iii:** Species which are not abundant in veld in good condition whose abundance increases when veld is selectively grazed.
- **Invader:** Species of alien vegetation is listed in this category. As the frequency of invaders increases it is generally assumed that the veld condition also decreased.

In conjunction with the classification, the succession level of the grasses is also noted. The different succession levels are (Tainton, 1999):

- **Pioneer:** Plants capable of invading bare or disturbed sites and persisting there until replaced by other species
- **Sub-climax:** these occur when a disturbance of climax species occurs, or after the establishment of pioneer species.
- **Climax:** A species that is self-perpetuating in the absence of disturbance, with no evidence of replacement by other species.

Due to the lack of reference sites for ridges, the study site is not compared to a reference site as described by Tainton (1999) for the Ecological Index Method. The results are mainly used to determine the condition of succession on the site, as well as the impact of defoliation (both overgrazing and high burning frequency) on the study site.

4.2 Faunal assessment

Galago Environmental² was appointed to conduct separate faunal (including mammals and avifauna) and floral assessments. These reports were used to supply relief information about the site, and only the conclusions are used in this report to make inferences about the site. Discussion with the various specialists also provides an indication of the faunal conditions on site.

5 Results

5.1 Vegetation ecology assessment

The floral Assessment report for the study site as compiled by Galago Environmental cc was used to determine the vegetation communities. Only the ridge was further investigated intensively, as per the scope of this report (Figure 6).

² Galago Environment. Tel: 012-345 4891. Email: vanessam@lantic.net

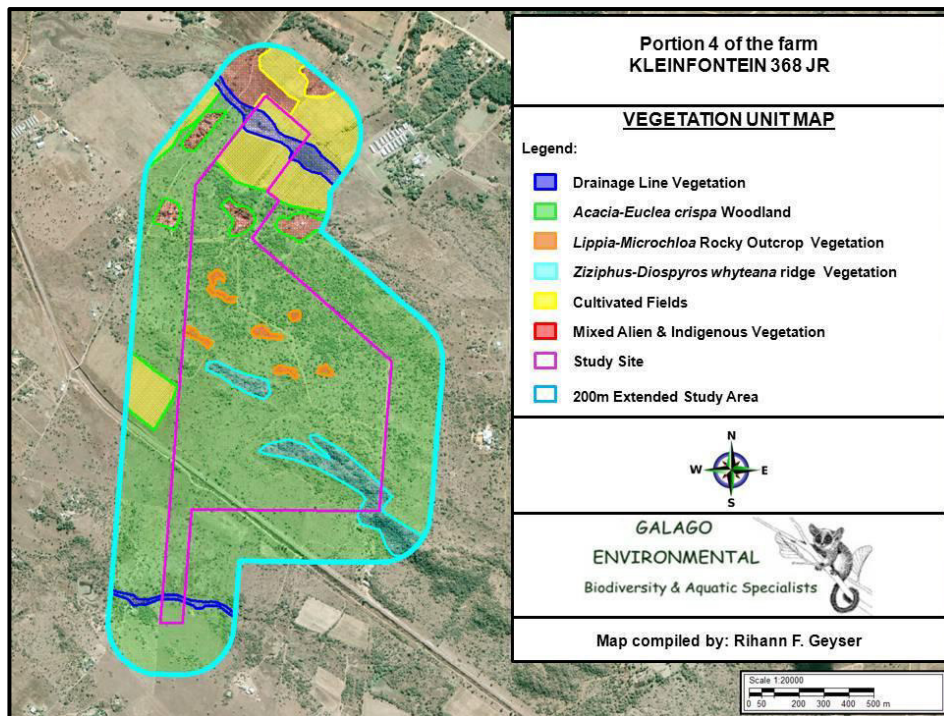


Figure 6: The vegetation unit map of the study site.

During the site visit a representative transect was done from the bottom of the ridge to the crest to determine the grass species composition of the study site. A sample set 104 samples were taken and the following species were identified:

Table 4: The species list with grazing/burning responses and succession ratings

Species	Grazing/ Burning response	Succession
<i>Eragrostis racemosa</i>	Increaser 2	Sub Climax
<i>Eragrostis curvula</i>	Increaser 2	Sub Climax & Climax
<i>Melinis repens</i>	Increaser 2	Pioneer & Sub climax
<i>Hyparrhenia hirta</i>	Increaser 1	Sub Climax & Climax
<i>Cymbopogon prolixus</i>	Increaser 1	Sub Climax & Climax
<i>Themeda triandra</i>	Decreaser	Climax
<i>Diheteropogon amplexens</i>	Decreaser	Climax
<i>Panicum schinzii</i>	Increaser 1	Pioneer
<i>Urelytrum agropyroides</i>	Increaser 1	Climax
<i>Monocymbium cerasiiforme</i>	Decreaser	Climax
<i>Trachypogon spicatus</i>	Increaser 1	Climax
<i>Panicum maximum</i>	Decreaser	Sub Climax & Climax
Forbs		Pioneer and sub climax

The dominant presence of *Eragrostis curvula* (78%) on the study transect was of concern. This grass species is an Increaser ii species, an indicator of overgrazing, especially in high rainfall areas (Van Oudtshoorn, 2012), and usually grows in well-drained sandy soils, and on areas where disturbance has occurred. Also found along the transect were extensive establishment of Bankrupt bush (*Seriphium plumosum*) (figure 7), an indicator of overgrazing and disturbance of the site and seen as a nuisance plant (Tainton, 1999).



Figure 7: The transect direction (blue arrow). Note the extensive *S. plumosum* on the sides of the ridge.

The results of the herbaceous cover assessment indicated that the site is highly impacted by over utilisation - Increaser ii species composition was 88% (Figure 8). This, in conjunction with *S. plumosum*, indicates a system that is threatened by overgrazing. Physically, herbaceous grass removal and trampling was evident throughout the slope of the ridge and this could lead to erosion of the soils and decreased grazing capacity of the system.

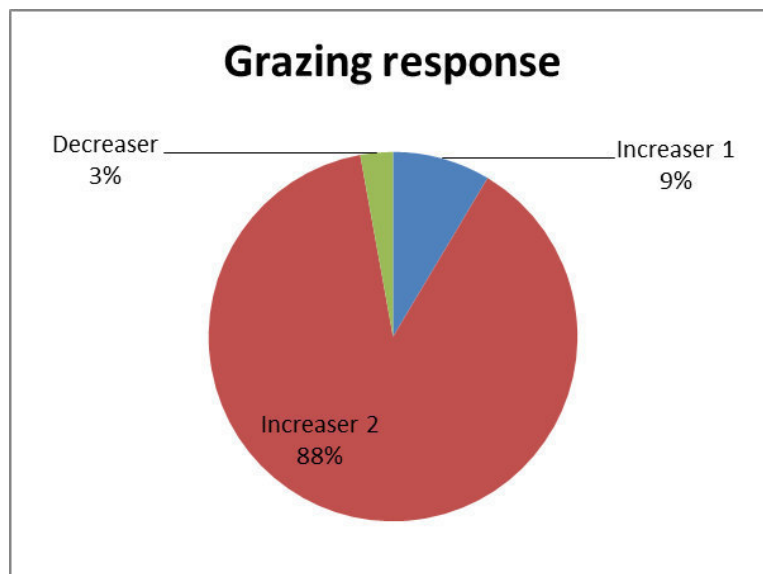


Figure 8: The grazing response assessment of the study site.

The current condition of succession of the site (figure 9) was influenced by the author's decision that *E. curvula* found at such high densities on the study site indicates a climax condition of the grass (*E. curvula* is a sub-climax and climax plant according to Van Oudtshoorn, 2012).

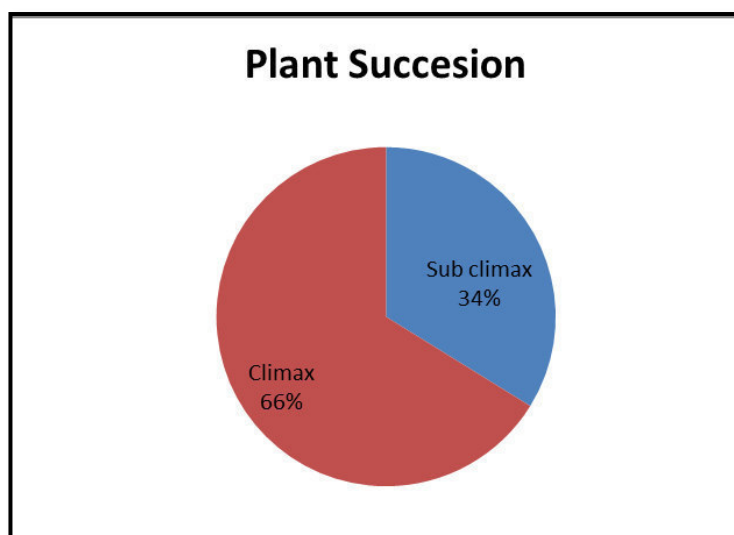


Figure 9: The plant succession of the study site.

The succession indicates a system that is stable in terms of succession, but the impact of grazing is evident. If the grazing is reduced, it would allow the climax plants (that are usually more palatable) to recolonize the areas dominated by sub-climax increaser ii species. A good indication of the stability of the site is the absence of pioneer species on the study site.

It was required that the specialist focused on the following threatened and near threatened species of flora on the study site: *Argyrobium campicola*, *Brachycorythis conica* subsp *transvaalensis*, *Ceropegia decidua* subsp. *pretoriensis*, *Habenaria bicolor*, *Habenaria kraenzliniana* and *Trachyandra erythrorrhiza*. The habitat of the *Lippia – Microchloa* rocky outcrop vegetation study unit was suitable for the Red List species *Adromischus umbraticola* subsp *umbraticola*. None was, however, found during the survey. The Orange List species *Hypoxis hemerocallidea* was found sparsely scattered in this study unit.

During the sample transect, a small population of the pom-pom weed (*Campuloclinium macrocephalum*) was found. Although the population is still small, it will inevitably increase if no action is taken by the land owner. Along the edge of the ridge, a small two-track dirt road occurs, and is the only access for machinery to the site. The edge of the road is highly disturbed and species such as *Melinis repens* occurs here indicating a highly disturbed area. The further presence of alien vegetation species such as Khakibos (*Tagetes minuta*) in this area is of concern as it is very close to the ridge area and can easily populate the ridge if current intensive grazing continues.

5.2 Connectivity and corridors

The connectivity of the ridge in relation to other areas is important especially in the light of endemism, especially paleo-endemism (an endemic species that used to occur throughout a site, but is now limited to patches/islands of populations). Ridges serve as biodiversity sources feeding adjacent areas that are biodiversity sinks, which is the reasoning behind GDARD's inclusion of priority ridges in corridor assessments (GDARD C-Plan 2011). The movement of species from biodiversity source to sink and vice versa will occur through corridors.

Corridors are defined as: “*Linear connections between two or more patches of wildlife habitat that are meant to serve as conduits for fauna*” (Brewer, 1992). It is furthermore defined by www.conservationcorridors.org as “*Corridors are habitats that are typically long, relative to their width, and they connect fragmented patches of habitat. They can vary greatly in size, shape and composition. The main goal of corridors is to facilitate movement of individuals,*

through both dispersal and migration, so that gene flow and diversity are maintained between local populations. By linking populations throughout the landscape, there is a lower chance for extinction and greater support for species richness”.

Of concern is that too-small or broken corridors will lead to edge effects and would not necessarily allow for the movement of species along the corridor. GDARD defines corridors as “All provincially important species and climate change corridors, inclusive of disturbed, degraded or transformed areas, must be designated as sensitive”. The study site is partly covered by a corridor. See Figure 10 below.

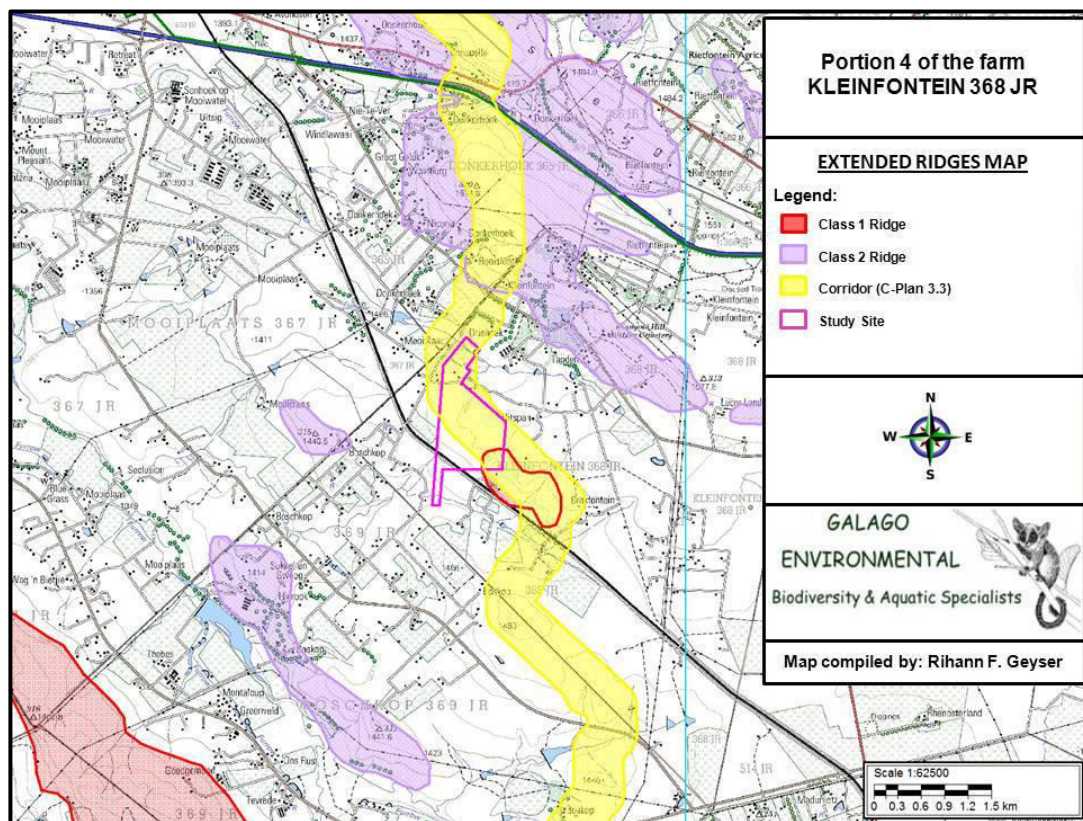


Figure 10: The location of ridges and the corridor as per GDARD C-Plan 3.3 (2011).

To ensure corridors allow the correct connectivity they must be of the correct size (area). Ridges are important corridors of biodiversity movements as they provide high frequency of harboring habitat (such as rocky outcrops and trees) along their length. This will allow for the movement of individuals of a species to ensure genetic diversity as well as allow species that provide crucial ecological services to move into areas (services such as pollination and predation).

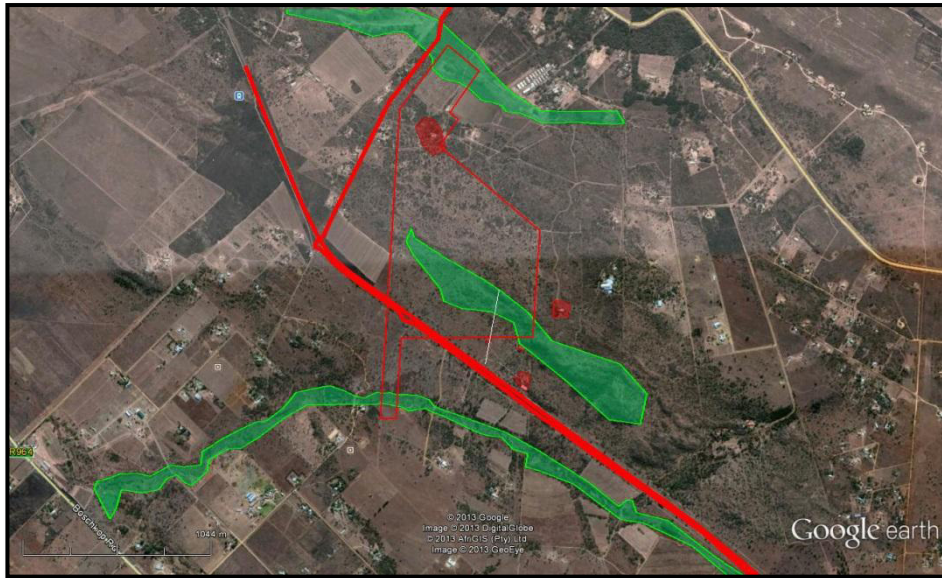


Figure 11: The connectivity disrupters in red and corridors in green of the larger study area.

The ridge found on the study site is located between two other ridges lying parallel to the study site's ridge (this is common to the Magaliesburg range where the range comprises three or four sets of crests and valleys (Figures 10&11)). The connectivity along the ridge of the study site is excellent, with only fencing and a twin-track road of concern. These will have almost no effect on the movement of fauna, although the fence may prove difficult to larger animals but will not exclude them totally (Kudu (*Tragelaphus strepsiceros*) tend to move freely over and through game fencing). The wetland areas running to the north and south of the study site also provide excellent corridors as fencing of water bodies is usually difficult due to the topographical and hydrological changes in these areas (this allows gaps in the fence for species movement).

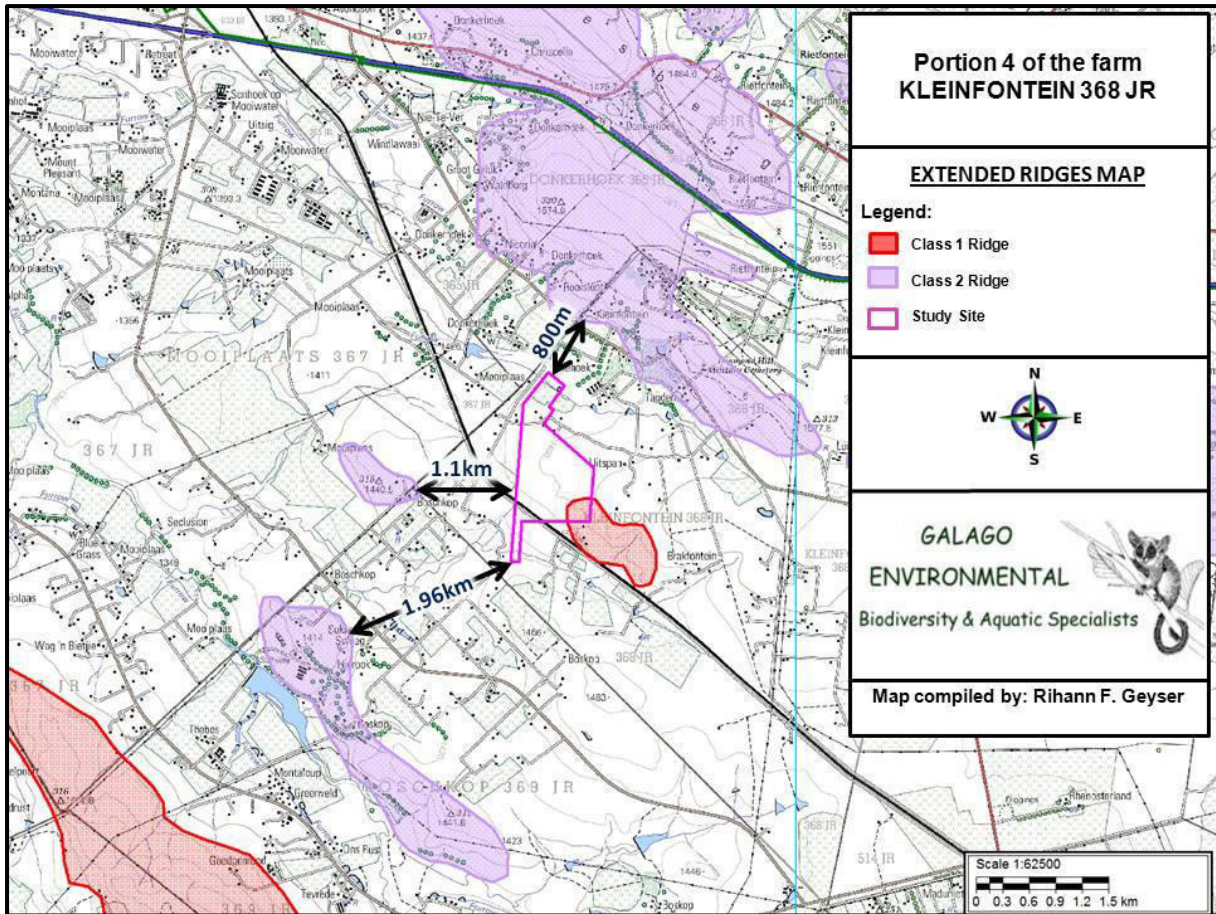


Figure 12: The relation of the ridge on the study site to other ridges in the area (GDARD C-plan 3.3, 2011).

The lateral connectivity between the ridge on the study site and other ridges in the surrounding area is possible, but the presence of more obstacles will reduce the connectivity (increased presence of homesteads, more highly utilized roads and the railway line and associated embankment) (Figure 12 and Table 3).

Table 3: The impact of connectivity interrupters on the study site's ridge

Connectivity interrupter	Description of impact	Impact rating (0 no impact- 5 highest)
Road and railway	Roads and railways create dangerous areas for large and small animals to cross. The frequency of traffic on the road and railway also determines the impact rating. The distribution of alien species of flora along these artificial corridors is also of concern	3
Homesteads	Localized alteration of biotic and abiotic factors. Presence of domestic predatory animals (cats and dogs) also impacts on the small rodent and bird populations. The distribution of alien species of flora is also of concern.	1
Fencing	A 21-strand game fence will limit large mammal movement, but not exclude all species. The movement of smaller mammals is not limited	1.5

5.3 Faunal assessment

Larger mammals have disappeared from the site due to agricultural activities in the area, but some might still cross the site from time to time. The ridge on site is linked to a more conspicuous ridge outside the site boundary (to the east) as well as a ridge to the west. The study area with prominent cliff faces and andesite rocky summits, which provides excellent habitat for such rupicolous species as rock elephant shrews, Namaqua rock rats and rock rabbits. It is even possible that deep crevices in the cliff faces on the neighbouring property occur, which will provide seasonal sanctuary for cave-dwelling bats.

The rocky outcrops on the crest of the ridge on the study site are poorly developed and do not have copious nooks and crannies as refuges for rock-dwelling mammals and reptiles, but justify being recognized as marginally sensitive.

Forty-six species of mammals expected on 90 hectares close to a large metropolitan area can be considered as a significant species richness, considering that more prominent species have been extirpated and that the site and adjoining properties have been farmed at the cost of healthy conservation practices. See Table 5 for a list of the observed mammals on the study site (none of these observed species have a conservation status that is threatened or near threatened).

Table 5: Mammals observed on the study site

SCIENTIFIC NAME	ENGLISH NAME	OBSERVATION INDICATOR	HABITAT
<i>L. saxatilis</i>	Scrub hare	Faecal pellets	Short grassveld
<i>G. sanguinea</i>	Slender mongoose	Sight record	Universal
<i>T. strepsiceros</i>	Kudu	Faecal pellets	Savannah
<i>S. grimmia</i>	Common duiker	Faecal pellets	Grassveld

Specific emphasis was required by GDARD in the biodiversity assessment of the site on **African Grass-owl** (*Tyto capensis*) a IUCN threatened category: A1c: A2c; C1. Status: Vulnerable. It was found that there is no suitable habitat for this species on and within 500 m surrounding the study site.

5.4 Pollination

Plants cannot move around and therefore need different mechanisms than animals to enable fertilization to take place, or for the movement of pollen to the receptive stigma of another plant. Vertebrates or insects that provide this service are pollinators. Pollination happens through derived strategies by long-proboscid flies, butterflies, night-flying hovering and settling moths, honeybees, flies, hopliine beetles, sunbirds, bats or even rodents.

Pollination is a key component of biodiversity that is directly responsible for the maintenance of ecosystem function. Pollination as an essential ecosystem service is therefore extremely important to agriculture and nature conservation. Pollinators are the entities that transfer the pollen of plants to the ovaries that in turn result in the seeds and then the reproduction of the plant species. Although many plants are wind pollinated, most are animal pollinated, making the conservation of pollinators fundamental to the maintenance of biological diversity. In natural as well as agricultural ecosystems, so pollinators must be sufficiently abundant to sustain their services.

Pollinators are sensitive to environmental degradation and changes in their abundance and diversity will influence the abundance and diversity of the prevailing plant species.

Pollinator management needs to be addressed at the ecosystem level to conserve and restore natural and semi-natural habitats and optimise services in natural systems. The

combined impacts of fire, habitat loss, fragmentation and grazing must be assessed to determine their influence on pollinator abundance and their system functioning. Honeybees are responsible for 60% of pollination of our indigenous flowering plant species. They are highly susceptible to insecticides and the destruction of their habitat could cause massive ecological damage.

This includes the possible loss of plant species with consequent loss of animal species, which comes down to loss of biodiversity. The conservation of a species will be, therefore, not only a result of the protection of habitat alone, but reproduction and dispersal are essential and pollination is fundamental for most plants.

5.5 Roads and services installation and operation

Due to the location of the study site in an area not yet highly developed, the installation of services will be an important aspect of the development of the property. Of concern is the type of development (residential housing) as the services required will be more intensive. The handling of waste (including sewage) is of concern and must be planned to ensure the development does not impact on the ridge or natural environment. Due to the Class 1 classification of the ridge, it is of paramount importance that the development (and installation of services) does not impose on the ridge or the ridge buffer zone. It is proposed that all services and access roads be installed along the western boundary fence, outside the ridge and buffer area (figure 13). This should also prevent the fragmentation of the ridge due to construction activities, permanent or temporary.

The handling of stormwater should also avoid the concentrated release of water into the natural vegetation as the risk of erosion on site is high due to the sandy soils. The ridge is also an important habitat for small vertebrates, and the homeowner's association should not allow the keeping of domestic animals including cats and dogs along the edge of the buffer of the ridge.

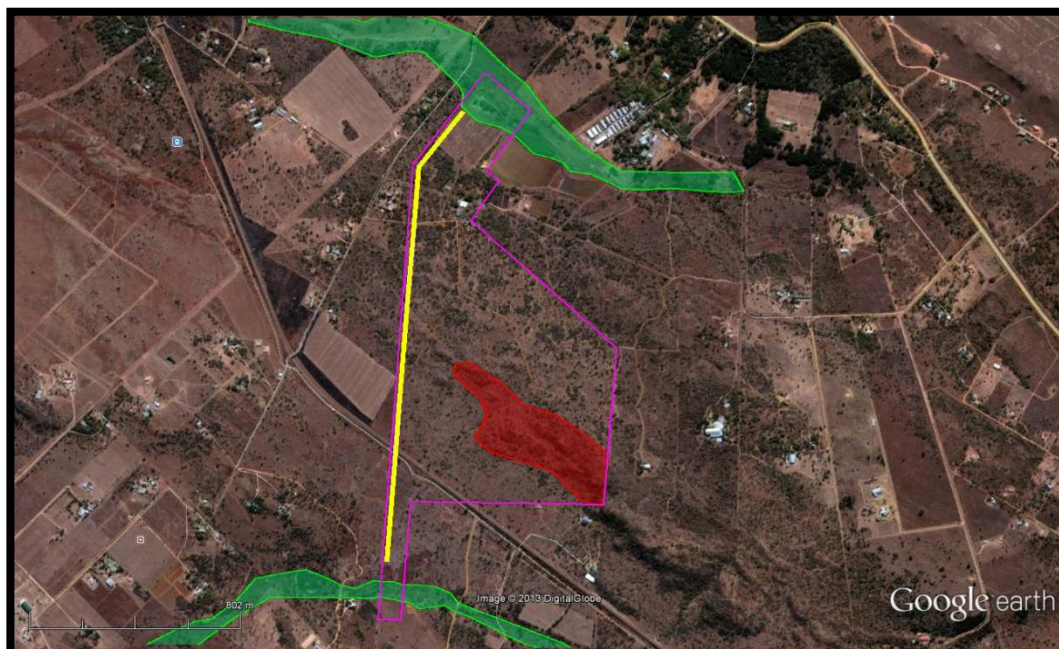


Figure 13: The location of sensitive areas in red (ridge) and green (Wetland & Drainage) and the proposed main access road in yellow along the edge of the western boundary.

6 Conclusion and mitigating recommendations

It is recommended that the ridge identified on the study site must be conserved and since **the ridge is classified as a Class 1 ridge, a buffer area of 200 meters** must be incorporated around the identified boundaries of the ridge – as in line with the GDARD minimum requirements, 2012 (figure 14).

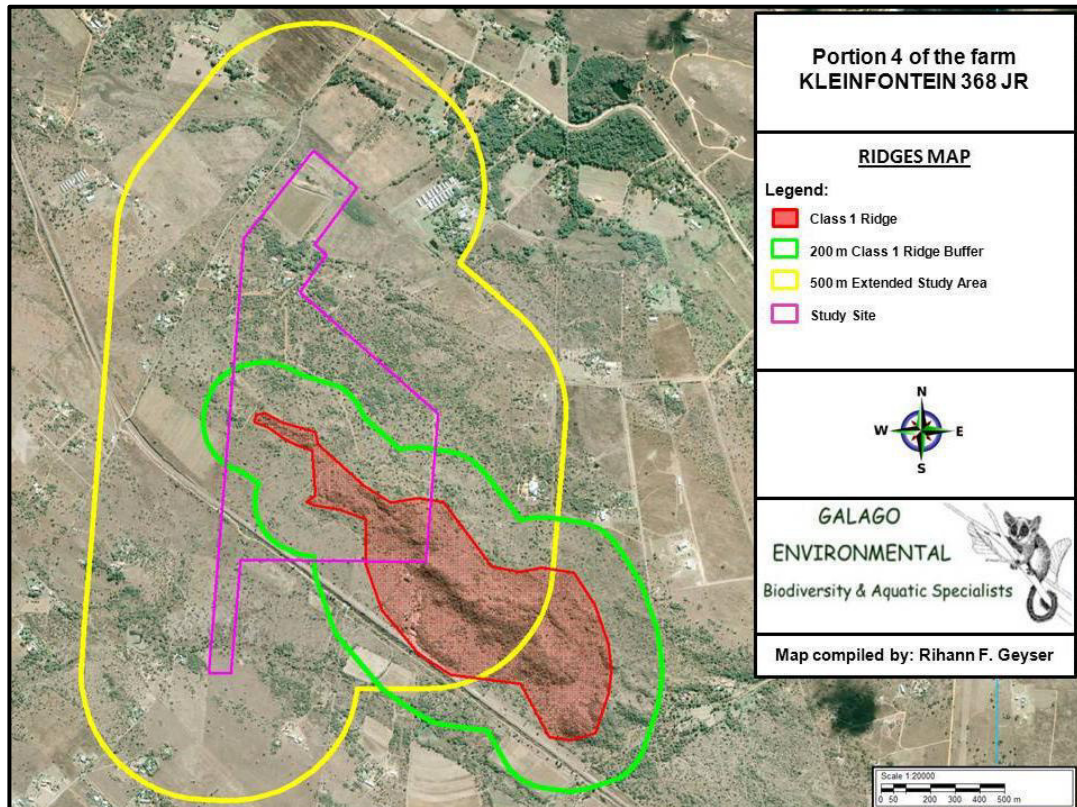


Figure 14: The ridge on the study site with the proposed 200m buffer area.

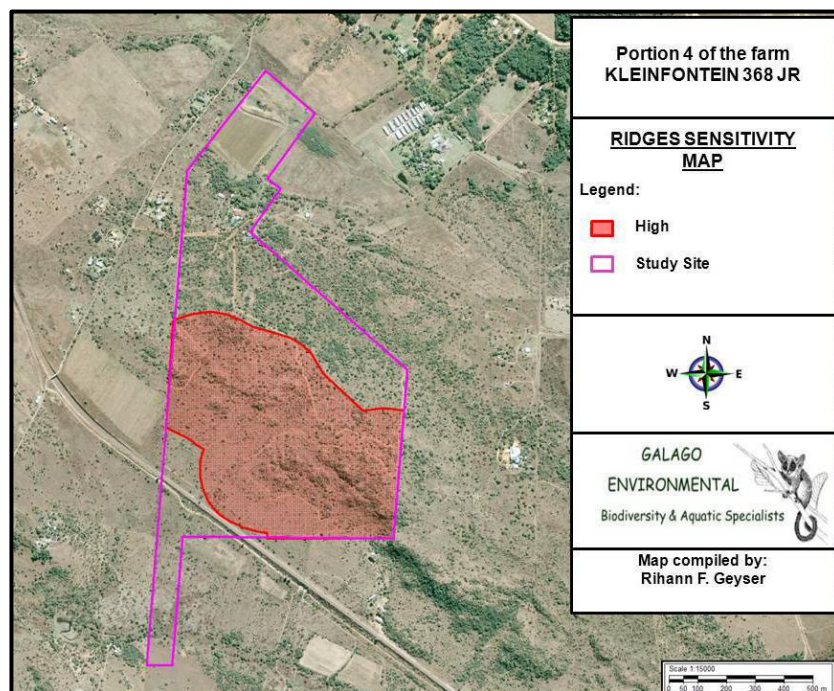


Figure 15: Sensitivity map of the ridge on site without the corridor proposed by GDARD

The corridor as outlined by GDARD in the Conservation Plan (C-Plan 3.3, 2011) should also be conserved as far as possible as the connectivity areas between the ridges (Figure 14 & 15) are important movement and pollinator areas to preserve biodiversity in the area. Since the site would only be subdivided into small holdings, the connectivity in the corridor area should continue. The proposed mitigation measures proposed will need to be implemented where indigenous vegetation is planted and alien invasive species eradicated.

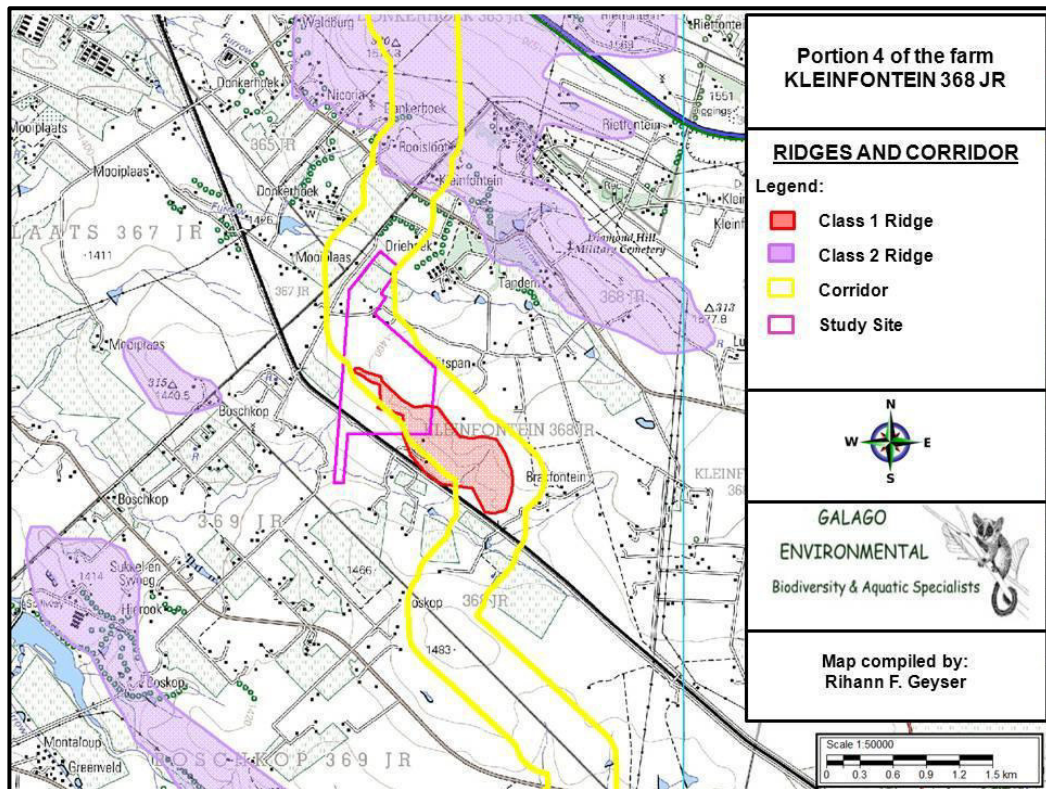


Figure 16: The ridge of the study site including the corridor as determined by GDARD C plan 3.3.

Species richness: The mammal and avifaunal species richness is deemed to be relatively good for the site. This in the close proximity to town and subjected to land-use practices not necessarily sympathetic with nature conservation warrants the conservation of the ridge as a biodiversity hotspot. Although the herbaceous vegetation composition on the ridge is tending towards homogenous (*E. curvula*), the total diversity of flora (including herbaceous and woody) is high.

Endangered species: No threatened species of fauna and flora was found on the ridge and extended study area.

Habitat(s) quality and extent: The quality of rupicolous habitat on the site itself is low, but the ridge and extended ridge areas offer prime rupicolous habitat. The ridge also offers good tree canopy cover to arboreal dependant species of fauna.

Impact on species richness and conservation: It is predicted that the proposed development will have a negative impact on species richness and conservation. It is therefore of paramount importance that the ridge be used as conservation area, and included in the open space planning of the proposed development. An ecological management plan must be compiled to ensure the open space is managed accordingly.

Connectivity: The location of the ridge on the study site as part of a larger ridge system infers that the ridge system is well connected to the rest of the environment. It is evident that the ridge systems adjacent to the study site are in more pristine condition and thus will serve as a source for species movement. If the proposed development is not mindful of the ecological impacts it would become a biodiversity sink (Brewer, 1992). The presence of a large corridor was identified by and in the GDARD minimum requirements (2012) and all corridors, irrespective of development, must be defined as sensitive (see figure 15). This connectivity should, however, not be a problem with the proposed development.

Management recommendation: It is proposed that an ecological management plan for the open spaces (the conserved high sensitivity and buffer areas) be compiled and adhered to. It is of paramount importance that the homeowners association be made aware of the plan and that they are contractually bound to it. This would also be beneficial if the ecological management plan was made contractually obligatory to the construction crews and any subcontractors.

Mitigation measures:

The following mitigation measures are proposed by the specialist:

- Where possible, trees naturally growing on the site should be retained as part of the landscaping. Measures to ensure that these trees survive the physical disturbance from the proposed development should be implemented. A tree surgeon should be consulted in this regard.
- The ridge on site and the proposed buffer area must be fenced off and no domestic animals (including cats and dogs) must be allowed to enter this area.

The following mitigation measures were developed by GDARD (Directorate of Nature Conservation, 2012) and are applicable to the study site:

- An appropriate management authority (e.g. the body corporate) that must be contractually bound to implement the Environmental Management Plan (EMP) and Record of Decision (ROD) during the operational phase of the development should be identified and informed of their responsibilities in terms of the EMP and ROD.
- All areas designated as sensitive in a sensitivity mapping exercise should be incorporated into an open space system. Development should be located on the areas of lowest sensitivity.
- Development structures should be clustered as close as possible to existing development.
- The open space system should be managed in accordance with an Ecological Management Plan (EMP) that complies with the *Minimum Requirements for Ecological Management Plans* and forms part of the EMP.
- The Ecological Management Plan should:
 - o include an on-going monitoring and eradication programme for all non-indigenous species, with specific emphasis on invasive and weedy species
 - o include a comprehensive surface runoff and storm water management plan, indicating how all surface runoff generated as a result of the development (during both the construction and operational phases) will be managed (e.g. artificial wetlands / storm water and flood retention ponds) prior to entering any natural drainage system or wetland and how surface runoff will be retained outside of any demarcated buffer/flood zones and subsequently released to simulate natural hydrological conditions
 - o include a monitoring programme for all Red and Orange List species
 - o facilitate/augment natural ecological processes

- o provide for the habitat and life history needs of important pollinators
- o minimize artificial edge effects (e.g. water runoff from developed areas & application of chemicals)
- o include a comprehensive plan for limited recreational development (trails, bird hides etc.) within the open space system
- o result in a report back to the Directorate of Nature Conservation on an annual basis
- The open space system should be fenced off prior to construction commencing (including site clearing and pegging). All construction-related impacts (including service roads, temporary housing, temporary ablution, disturbance of natural habitat, storing of equipment/building materials/vehicles or any other activity) should be excluded from the open space system. Access of vehicles to the open space system should be prevented and access of people should be controlled, both during the construction and operational phases. Movement of indigenous fauna should however be allowed (i.e. no solid walls, e.g. through the erection of palisade fencing).
- Only indigenous plant species, preferably species that are indigenous to the natural vegetation of the area, should be used for landscaping in communal areas. As far as possible, plants naturally growing on the development site, but that would otherwise be destroyed during clearing for development purposes, should be incorporated into landscaped areas. Forage and host plants required by pollinators should also be planted in landscaped areas.
- In order to minimize artificially generated surface stormwater runoff, total sealing of paved areas such as parking lots, driveways, pavements and walkways should be avoided. Permeable material should rather be utilized for these purposes.
- The crossing of natural drainage systems should be minimized and only constructed at the shortest possible route, perpendicular to the natural drainage system. Where possible, bridge crossings should span the entire stretch of the buffer zone. Bridge designs should allow for unimpeded water flow and passage of small terrestrial animals.

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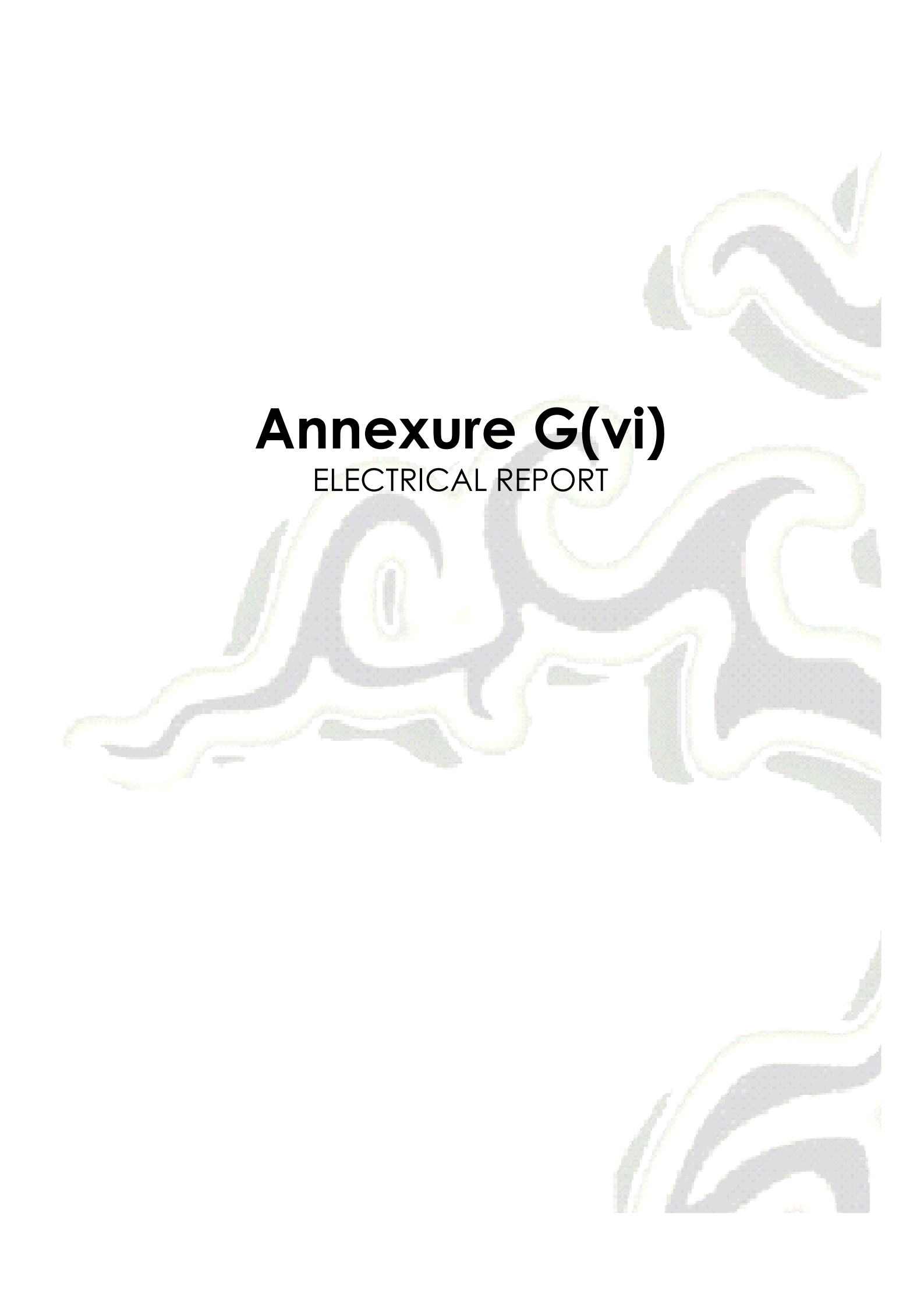
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Annexure G(vi)

ELECTRICAL REPORT

DRAFT

SERVICES REPORT ELECTRICAL RETICULATION KLEINFONTEIN

**MIXED USE DEVELOPMENT ON
PORTIONS 38, 90, 96 OF THE FARM KLEINFONTEIN 368JR AND
ON PORTIONS 63, 67, 68 AND REMAINDER OF PORTION 14 OF
THE FARM DONKERHOEK 365JR**

GAUTENG PROVINCE



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DATE: January 2012
Version 0

PROJECT: PE15

EXECUTIVE SUMMARY

The existing development known as Kleinfontein is currently supplied by Eskom via the Tweedracht/Donkerhoek 11kV feeder. From consumer accounts, the unconfirmed Notified Maximum Demand is estimated at 1.2MVA.

Based on Preliminary Zoning / Usage Allocation tables from the Townplanners and allocating loading as per NRS guidelines, the final estimated Maximum Demand for future development should be ± 11.8 MVA.

The development is situated within the supply jurisdiction of City of Tshwane.

DRAFT

SERVICES REPORT

ELECTRICAL RETICULATION

MIXED USE DEVELOPMENT ON PORTIONS 38, 90, 96 OF THE FARM KLEINFONTEIN 368JR AND ON PORTIONS 63, 67, 68 AND REMAINDER OF PORTION 14 OF THE FARM DONKERHOEK 365JR

GAUTENG PROVINCE

Contents:	Page
1. Introduction and Background	1
2. Description of Existing System	2
3. Load Estimate	2
4. Point of Supply	3
5. Proposed Reticulation System	4
6. Design Parameters	4
7. Contributions	5
8. Financial Implications	5
9. Energy Efficiency Measures	6
10. Servitudes	6
11. Telephone Reticulation	6

ADDENDA:

- Addendum 1 - Drawing: Existing Internal Electrical Reticulation
- Addendum 2 - Relevant Municipality Correspondence
- Addendum 3 - Approved Establishment Conditions *(To Follow Once Available)*
- Addendum 4 - SG Plan *(Not Available Yet)*

DRAFT

SERVICES REPORT

ELECTRICAL RETICULATION

MIXED USE DEVELOPMENT ON PORTIONS 38, 90, 96 OF THE FARM KLEINFONTEIN 368JR AND ON PORTIONS 63, 67, 68 AND REMAINDER OF PORTION 14 OF THE FARM DONKERHOEK 365JR

GAUTENG PROVINCE

1. INTRODUCTION AND BACKGROUND

1.1 Brief

Kleinfontein Boerebelange Koöperatief Beperk has appointed PlanPractice Town Planners to apply for the establishment of mixed-use land development on,

- Portions 38, 90, 96 of the Farm Kleinfontein 368JR and
- on Portions 63, 67, 68 and Remainder of Portion 14 of the Farm Donkerhoek 365JR

Buro Tech Consulting Engineers CC was appointed by Kleinfontein Boerebelange Koöperatief Beperk on 16th September 2011 as the Professional Electrical Engineers on the project.

1.2 Scope of the Report

The scope of this report covers the investigation of the existing electrical infrastructure as well as the planning of the electricity supply to the developments including the electrical reticulation of the future proposed development. The scope of the report can briefly be summarised as follows:

- Obtaining of information on existing infra structure,
- Determining and planning of proposed future Medium Voltage electrical connections and reticulation,
- Determining and planning of proposed future Low Voltage electrical reticulation,
- Confirmation of specifications for purposes of services agreement,
- Determining of financial implications (future reports).

1.3 Availability of Information

Information was obtained as follows:

- Site visit on 19 October 2011. During this inspection various 11kV Eskom supply points were visited.

- Meeting with the developers and professional team on 21 October 2011. In this meeting information was obtained regarding the Zoned Usage, the electricity supply area and any existing infrastructure e.g. boreholes.
- A Site visit on 06 December 2011 to obtain the information regarding the existing Eskom connections from Mr Steyn van Schalkwyk.
- A Site visit with Mr Piet Jansen also an electrician responsible for maintenance and operation existing electrical infrastructure on 18 January 2012. A sample inspection was done on a typical Low Voltage Metering Kiosk and Miniature Substation.
- Zoning plans and usage schedules from PlanPractice Townplanners dated 17 November 2011 with supplementary information on 29 November 2011.

1.4 Services Negotiations

Service negotiations and agreements will be finalised between the client and the local supply authority. The area currently falls within the jurisdiction of the City of Tshwane. Eskom however is the official supply authority to the area. No City of Tshwane supply networks could be identified during the various site inspections. A formal letter was requested from City of Tshwane to give approval for Eskom to provide electricity to the existing and future developments (see Addendum 2)

2. DESCRIPTION OF EXISTING SYSTEMS

The main supply to the development is currently an Eskom supply, from the Tweedracht Substation via the Donkerhoek 11kV overhead feeder.

The various boreholes and agricultural holdings are supplied via 11kV overhead lines, through pole mounted transformers of various kVA ratings. Reticulation within the residential portion of the development is from the overhead feeders, through MV Eskom bulk metering. Internally supply to the houses is by means of 11kV underground cables to miniature substations and from the miniature substations via Low Voltage underground copper cables to outdoor ground mounted metering cubicles, with the final connection to the houses using underground house connection cables.

Limited visual inspections revealed that the work was done according to acceptable standards.

3. LOAD ESTIMATE

3.1 The total load estimate of the mixed-use development is as follows:

Calculations were done as follows:

Residential 01		5.0 kVA (ADMD)
Residential 04		3.5 kVA (ADMD)
Business 01	(Shops, Offices, Prof. Rooms)	90 VA/m ²
Industrial Uses		100 VA/m ²
Institutional	(Institution, Place of Worship/Instruction)	80 VA/m ²
Agricultural		7.0 kVA (ADMD)
Educational	(Place of Instruction, Place of Worship)	80 VA/m ²
Various Special	(Workshops, Telecomms, Security, etc.)	Dependent of Allocated Usage

3.2 The load estimate for the total development can thus be summarised as follows:

KLEINFONTEIN LOAD ESTIMATE CALCULATIONS

Erf Detail				Rights Applied For					Development Potential			Loading kVA [ADMD]	Load Factor (VA/m²)	Load (kVA) Calculated per Formula (load factor x building area)
Erf No(s)	Area (ha)	Type		Erven	Units	DENSITY Units /Ha /Erf	FSR	m²						
1 - 782	24.87 ha	Residential 1	Dwelling houses	782	782	1 u/erf					7.0 kVA		5,474 kVA	
783 - 859	3.81 ha	Residential 2	Dwelling houses and block of flats	77	229	60 u/ha					3.5 kVA		802 kVA	
860 - 862	1.90 ha	Residential 2	Dwelling houses and block of flats	3	29	15 u/ha					5.0 kVA		145 kVA	
863 - 875	13.99 ha	Business 1	Shops, offices and Professional rooms	13			50%	69,950 m²				90 VA/m²	6,296 kVA	
876 - 927	11.86 ha	Industrial 1	Industrial uses	52			90%	104,940 m²				25 VA/m²	2,624 kVA	
928	0.35 ha	Institutional	Institutions, Place of Public Worship and Place of Instruction	1			60%	2,100 m²				80 VA/m²	168 kVA	
928 - 1126	294.63 ha	Agricultural	Dwelling houses	199	597	3 u/erf					7.0 kVA		4,179 kVA	
1127	3.41 ha	Educational	Place of Instruction and Place of Public Worship	1			50%	17,050 m²				80 VA/m²	1,364 kVA	
1128 - 1129	1.49 ha	Special	Cemetery and Funeral Parlour	2							20 kVA		40 kVA	
30 - 1143, 1214	214.00 ha	Special	Private Open Space	15							3 kVA		45 kVA	
1144	1.00 ha	Special	Workshop, Maintenance and Storage	1							50 kVA		50 kVA	
1145	0.18 ha	Special	Industrial Use, Public Garage and Shop	1							70 kVA		70 kVA	
1146 - 1148	0.24 ha	Special	Engineering Services, including reservoir, pump station, electrical substation and associated maintenance facilities	3							60 kVA		180 kVA	
1149	16.10 ha	Special	Engineering Services, including reservoir, pump station, electrical substation and associated maintenance facilities and sewerage treatment plant	1							250 kVA		250 kVA	
1150 - 1155	1.82 ha	Special	Place of Amusement, Social Hall, Place of Public worship, Place of Instruction and Public Office	6			80%	10,920 m²				85 VA/m²	928 kVA	
1156	1.87 ha	Special	Telecommunication Centre	1							25 kVA		25 kVA	
1	4.78 ha	Special	Private Open Space and Social Halls	1							60 kVA		60 kVA	
1159 - 1160	0.37 ha	Special	Access Structure and Gatehouse	2							15 kVA		30 kVA	
1203 - 1213	88.78 ha	Undetermined	Dwelling Houses and Agricultural buildings	11	11						7.0 kVA		77 kVA	
1201 - 1202	18.92 ha	Undetermined	Dwelling Houses and Agricultural buildings	2	2				0 m²		7.0 kVA		14 kVA	
											Residential Sub-Total	10,691 kVA		
											Other Sub-Total	12,129 kVA		
											Diversity Applied	80%	18,256 kVA	
TOTAL ESTIMATED LOAD (kVA)											Say	18,300 MVA		

4. POINT OF SUPPLY

- 4.1 Supply to existing facilities is via the Eskom, Tweedracht/Donkerhoek 11kV feeder which falls within the Eskom Cullinan T.S.A.
- 4.2 The development however fall within the jurisdiction of City of Tshwane. No Tshwane infrastructure could be identified during the site visits.
- 4.3 Currently Eskom is the licensed supplier to all existing facilities and residential units with extensive infrastructure (Overhead Lines and Pole Mounted Transformers) present in the area.
- 4.4 An application was submitted to City of Tshwane in which Tshwane should indicate whether they would be interested in providing supply to the new proposed mixed-use development. Due to lack of infrastructure, it is expected that Tshwane will not be in a position to cater for any existing or future development.
- 4.5 To this effect, a formal application is being processed to Eskom North-West region for the supply of future development of the area.
- 4.6 At the date of this report, neither authority was in a position to give feedback yet.

5. PROPOSED EXTERNAL RETICULATION SYSTEM

5.1 MV Reticulation:

- i. The proposed internal reticulation system will be at 11kV with a combination of Overhead Lines and Underground Cables.
- ii. External MV Reticulation networks to be provided in accordance with supply authority requirements and specifications.

5.2 LV Reticulation:

- i. The proposed internal LV reticulation system will be an underground reticulation cable network. The 415V reticulation (to SANS 1418) will be by means of 4-core Aluminium or Copper PVC/SWA/PVC cables.
- ii. Provision will be made for 1-phase and 3-phase consumer feeds via outdoor metering cubicles, to the various facilities.
- iii. Maximum demand metering (Enermax type or similar) will be provided on the boundary of business stands.
- iv. It is proposed that split pre-payment consumer metering be provided inside the dwellings.
- v. The complete reticulation will be provided with earthing systems and lighting protection.
- vi. Only the minimum area lighting will be provided on strategic places. The luminaires will have low power consumption and the possibility to use solar power type streetlights is will be investigated.

5.3 Standards:

The complete installation will be according to the standard specifications as set out in NRS/SANS and Eskom Specification.

6. DESIGN PARAMETERS:

The design parameters are as follows:

6.1	Supply voltage	11kV
6.2	Transformer capacity	16 – 800kVA (11kV / 415V / 240V)
6.3	Medium voltage	11kV
6.4	Frequency	50Hz
6.5	Transformer earth	5 ohm
6.6	Symmetrical fault level	250MVA
6.7	Impulse withstand required	95kV
6.8	One minute power frequency withstand voltage	18kV
6.9	Normal low voltage	400V / 231V

6.10	Earthing to consumers	Earthing integral with 25mm ² house connection
6.11	Declared voltage	231V
6.12	Voltage regulation limits assumed voltage drop in system for low voltage design : (i) 11kV network (ii) Low voltage	3% max 9% max up to consumer DB

7. CONTRIBUTIONS

The contributions still need to be determined.

8. FINANCIAL IMPLICATIONS

8.1 This will be covered in future reports.

9. ENERGY EFFICIENCY MEASURES

9.1 Heat Pump Water Heating Systems

Heat Pump Systems are the preferred method for the heating of water. Using a third of the energy, when compared with Standard Hot Water Cylinders, this type of technology is ideally suited for developments of this nature, where a large number of Residential units are clustered together.

In addition to that, designing the system in such a way that the heated water is continuously circulated in dedicated hot water reticulation networks/pipes servicing all residential units, will result in hot water being immediately available.

Users diversity also results in the Cumulative Installed Heating Capacity needed to produce enough hot water to service the units, to be significantly less, when compared with numerous dedicated hot water systems, in a one per unit configuration.

9.2 Solar Panel Water Heating Systems

The usage of solar panels for the heating of the water for the geysers will also be considered for the development. It is one of the most feasible methods to save electricity with a system that is environmental friendly with very low carbon foot print. The units comprise basically of a solar collector/heat exchanger panel mounted on the roofs of the residential units. The geyser is equipped with an electrical heating element as back up together with a thermostat control to assist with the heating process when the sun energy is inadequate.

9.3 Electricity Generation and Gas

Solar panels for the generation of electricity were considered for the dwellings on the proposed development. However, the panels cannot yet be implemented cost effectively in South Africa because of the extremely high initial capital layout and associated maintenance problems with batteries etc. The usage of electricity can possibly be complimented by gas for heating purposes such as for stoves and geysers.

10. SERVITUDES

The Servitudes will be registered as may be required.

11. TELEPHONE RETICULATION

Telephone services [Sleeves and Ducts] to be included in the civil services by the Civil Engineers as may be required.

--oo0oo--

Addendum 1

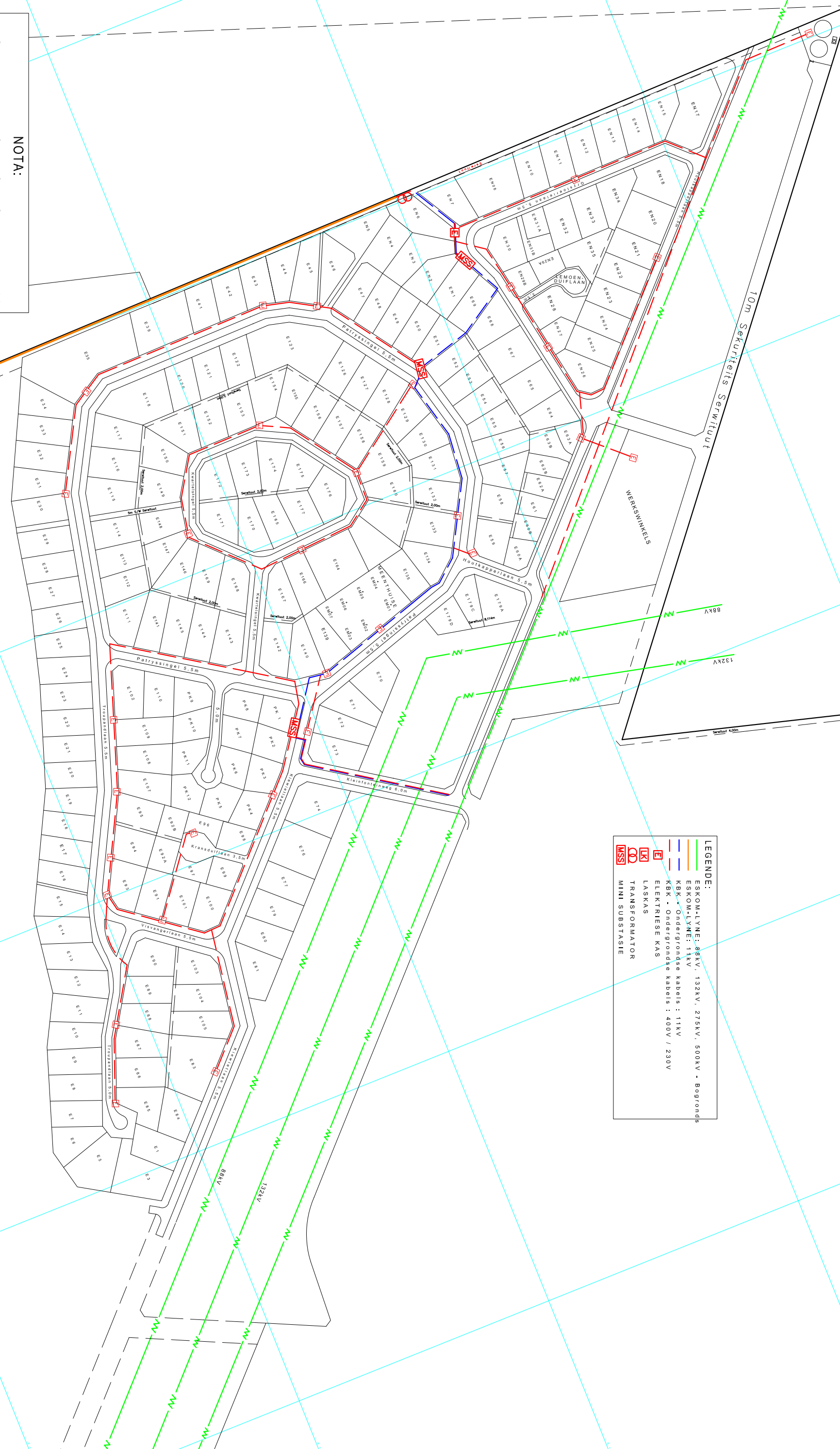
Drawing: Existing Internal Electrical Reticulation

RESERVOIRS EN DRUKTORING

10m Sekuriteits Servituut

LEGENDE:

- ESKOM-LYNE: 88kV, 132kV, 275kV, 500kV - Boegronde
- ESKOM-LYNE: 11kV
- KBK - Ondergrondse kables : 11kV
- - - KBK - Ondergrondse kables : 400V / 230V
- E ELEKTRIESE KAS
- L LASKAS
- TF TRANSFORMATOR
- MS MINI SUBSTASIE



NOTA:
BESTANDE DIENSTE TOT NOVEMBER 2011

KLEINFONTEIN BOEREBELANGE
KOÖPERATIEF BEPERK

NEDERSETTING
ELEKTRIESE DIENSTE PLAN

WYSIGINGS	WAGSEER	DATAUM
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1	KABEL BYVOEGINGS	30/11/14
2		5

WYSIGINGS	WAGSEER	DATAUM

TEKENING NR.
U01E

SKAAL 1:1 000

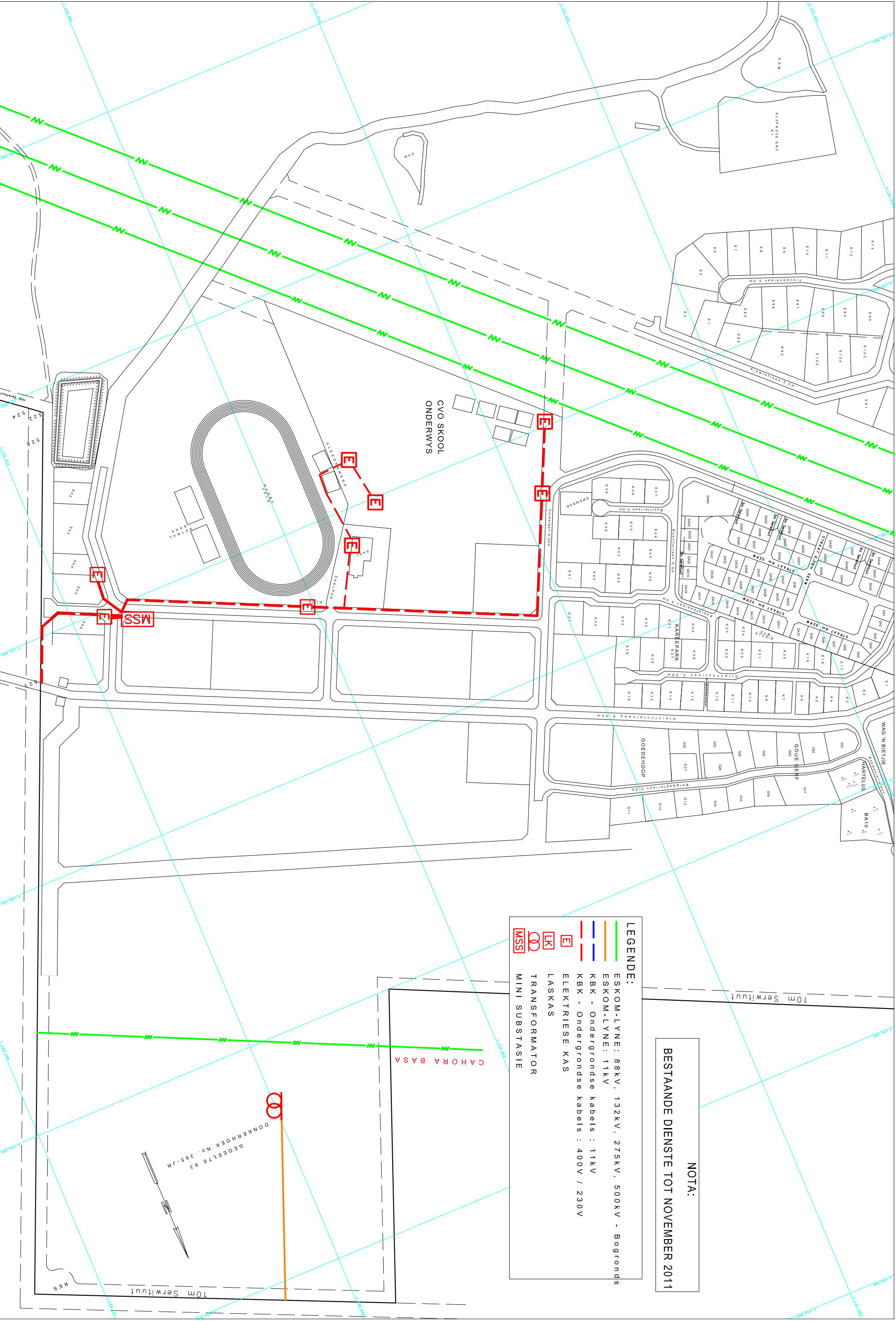
TEL 012-8021583
E-POS kleinfontein@kleinfontein.net
FAXS 012-8021584

GETEKEN: W van Romburgh
CAD VERRW: KFT/2011/NEDERSETTING/000
DATAUM: 28/07/2011

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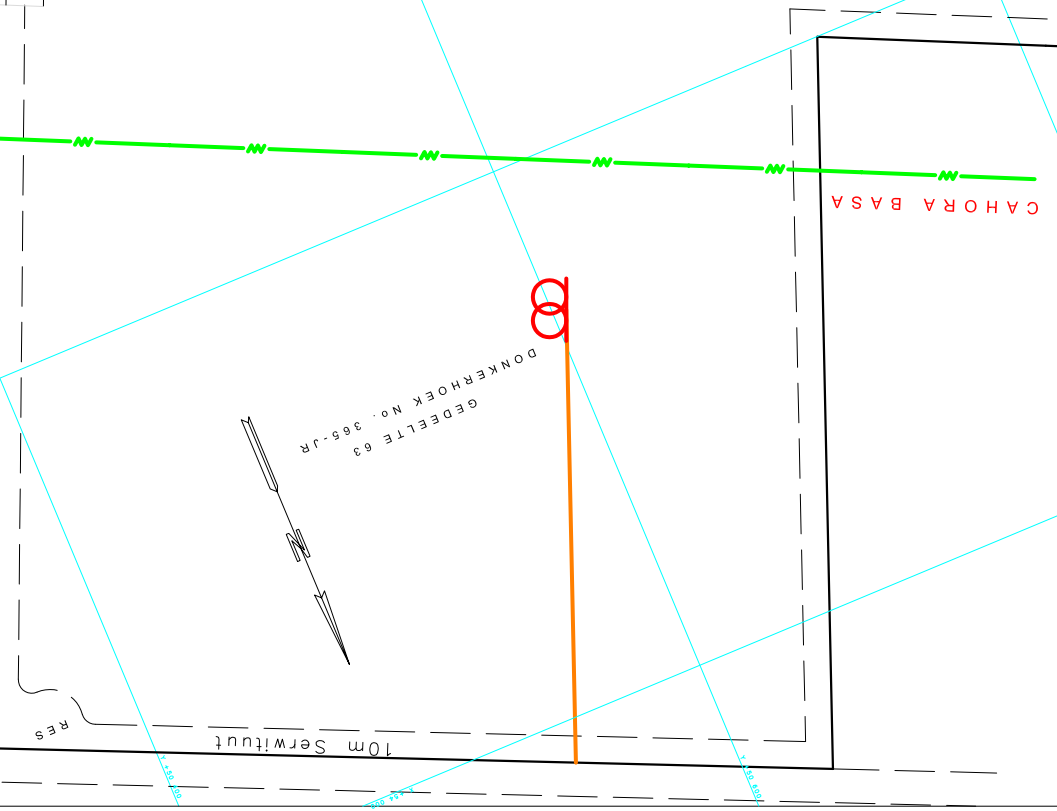
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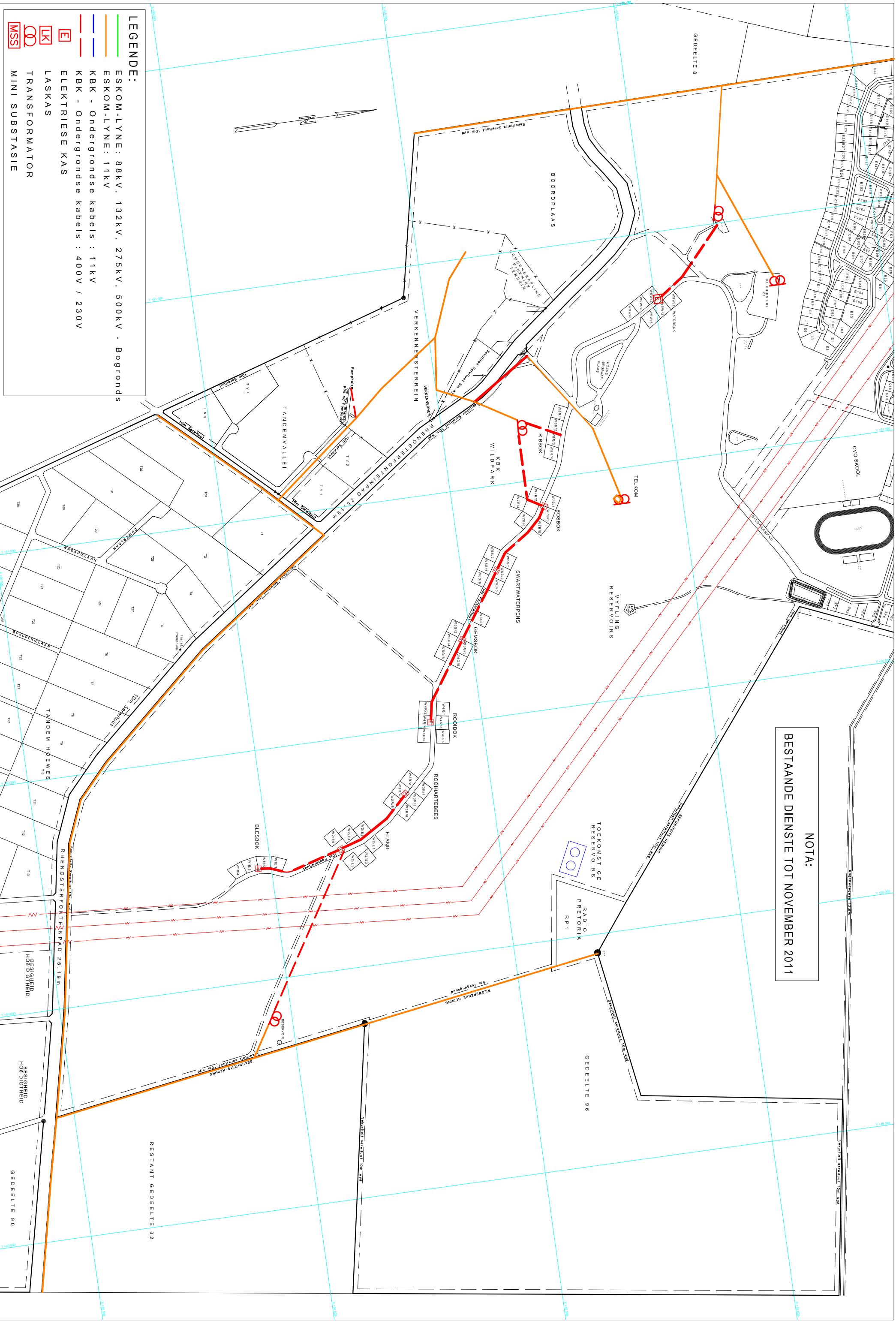


LEGENDE:

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- ESKOM-LYNE: 11KV
- KBK - Ondergrondse kables : 11KV
- KBK - Ondergrondse kables : 400V / 230V
- E ELEKTRIESE KAS
- L LASKAS
- O TRANSFORMATOR
- MSS MINI SUBSTASIE

NOTA:
 BESTANDE DIENSTE TOT NOVEMBER 2011





NOTA:
BESTAANDE DIENSTE TOT NOVEMBER 2011

TELEFON: 012 - 4021583
 E-POS: info@kleinfontein.net

KLEINFONTEIN BOEREBELANGE
KOÖPERATIEF BEPERK

WILDPARK EN GEDEELTE 96
ELEKTRIESE DIENSTE PLAN

- LEGENDE:**
- ESKOM-LYNE: 88kV, 132kV, 275kV, 500kV - Bogronds
 - ESKOM-LYNE: 11kV
 - KBK - Ondergrondse kabels : 11kV
 - KBK - Ondergrondse kabels : 400V / 230V
 - ELEKTRIESE KAS
 - LASKAS
 - TRANSFORMATORE
 - MINI SUBSTASIE

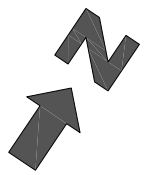
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2			

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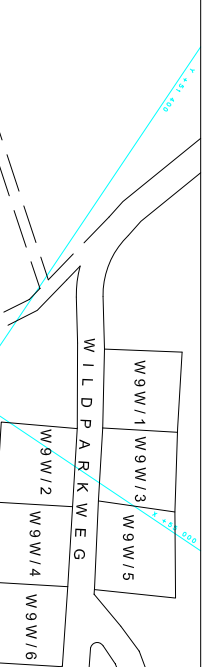
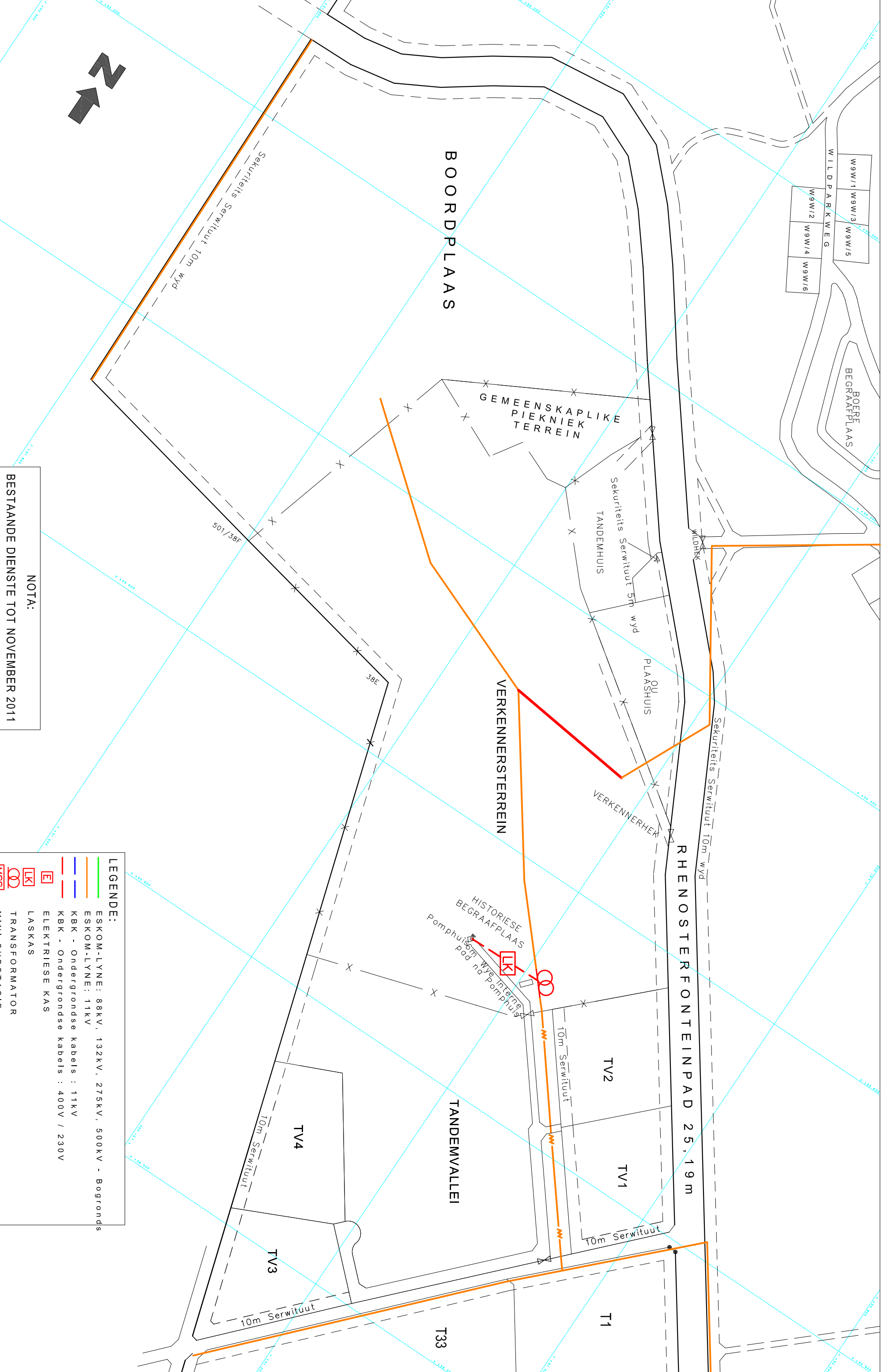
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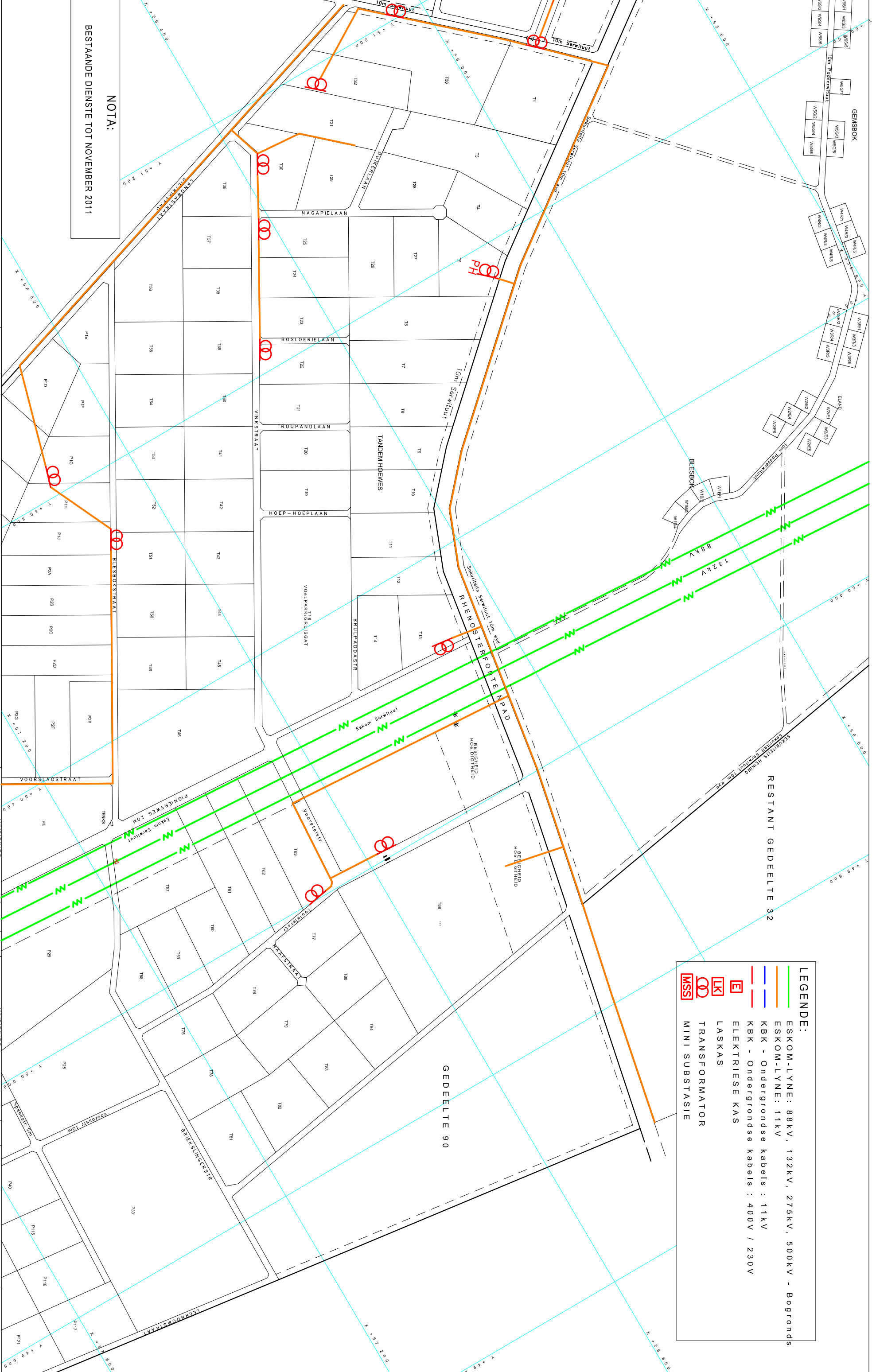


NOTA:
 BESTAANDE DIENSTE TOT NOVEMBER 2011

LEGENDE:

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- ESKOM-LYNE: 11KV
- KBK - Ondergrondse kabels : 11KV
- KBK - Ondergrondse kabels : 400V / 230V
- E ELEKTRIESE KAS
- TK LASKAS
- MSS TRANSFORMATOR
- MINI SUBSTASIE





LEGENDE:

- ESKOM-LYNE: 88kV, 132kV, 275kV, 500kV - Boggronds
- ESKOM-LYNE: 11kV
- KBK - Ondergrondse kabele : 11kV
- KBK - Ondergrondse kabele : 400V / 230V
- ELEKTRIESE KAS
- LASKAS
- TRANSFORMATOR
- MINI SUBSTASIE

UK
 E
 MSS

NOTA:
BESTAANDE DIENSTE TOT NOVEMBER 2011

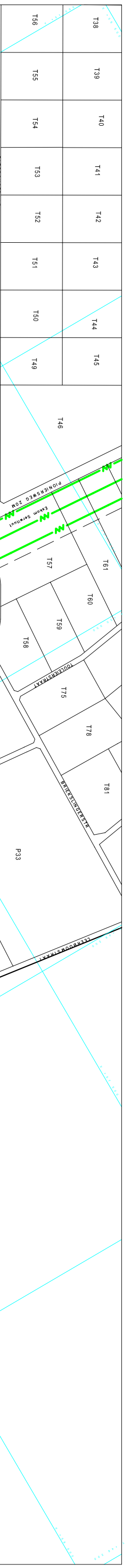
KLEINFONTEIN BOEREBELANGE
KOÖPERATIEF BEPERK
E-POS: kleinfontein@kleinfontein.net
FAKS: 012 - 8021564

TANDEM HOEWES
ELEKTRIESE DIENSTE PLAN

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U06E
GETEKEN: W van Romburgh
CAD VERW: KFTV, 2011, TANDEMHOEWES000DATEM: 25/07/2011

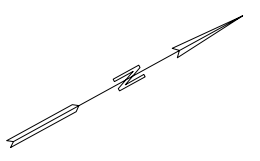
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LEGENDE:

- ESKOM-LYNE: 88KV, 132KV, 275KV, 500KV - Boggronds
- ESKOM-LYNE: 11KV
- KBK - Ondergrondse kables : 11KV
- KBK - Ondergrondse kables : 400V / 230V
- E ELEKTRIESE KAS
- LK LASKAS
- O TRANSFORMATOR
- MSS MINI SUBSTASIE

NOTA:
BESTAANDE DIENSTE TOT NOVEMBER 2011



KLEINFONTEIN BOERBELANGE
KOÖPERATIEF BEPERK

TEL 012 - 8021583
E-POS: Kleinfontein@kleinfontein.net
FAKS 012 - 8021584

PIONIERSHOEWES
ELEKTRIESE DIENSTE PLAN

WYSIGINGS		WYSIGINGS	
NO	WYSIGING	NO	WYSIGING
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1	KLEIN BYVOEGINGS	NDB	30/11/14
2			5

TEKENING NR. **UOZE**

GETEKEN: W van Rensburg
OUD VERN: 16/12/2011/01/15/08

SKAAL 1:2500

**KLEINFONTEIN BOEREBELANGE
KOÖPERATIEF BEPERK**

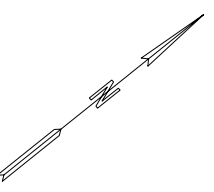
**SUIDELIKE HOEWES
ELEKTRIESE DIENSTEPLAN**

WYSIGINGS		WYSIGINGS	
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1	KLEIN KORREKSIES	NDB	30/11/14
2			5

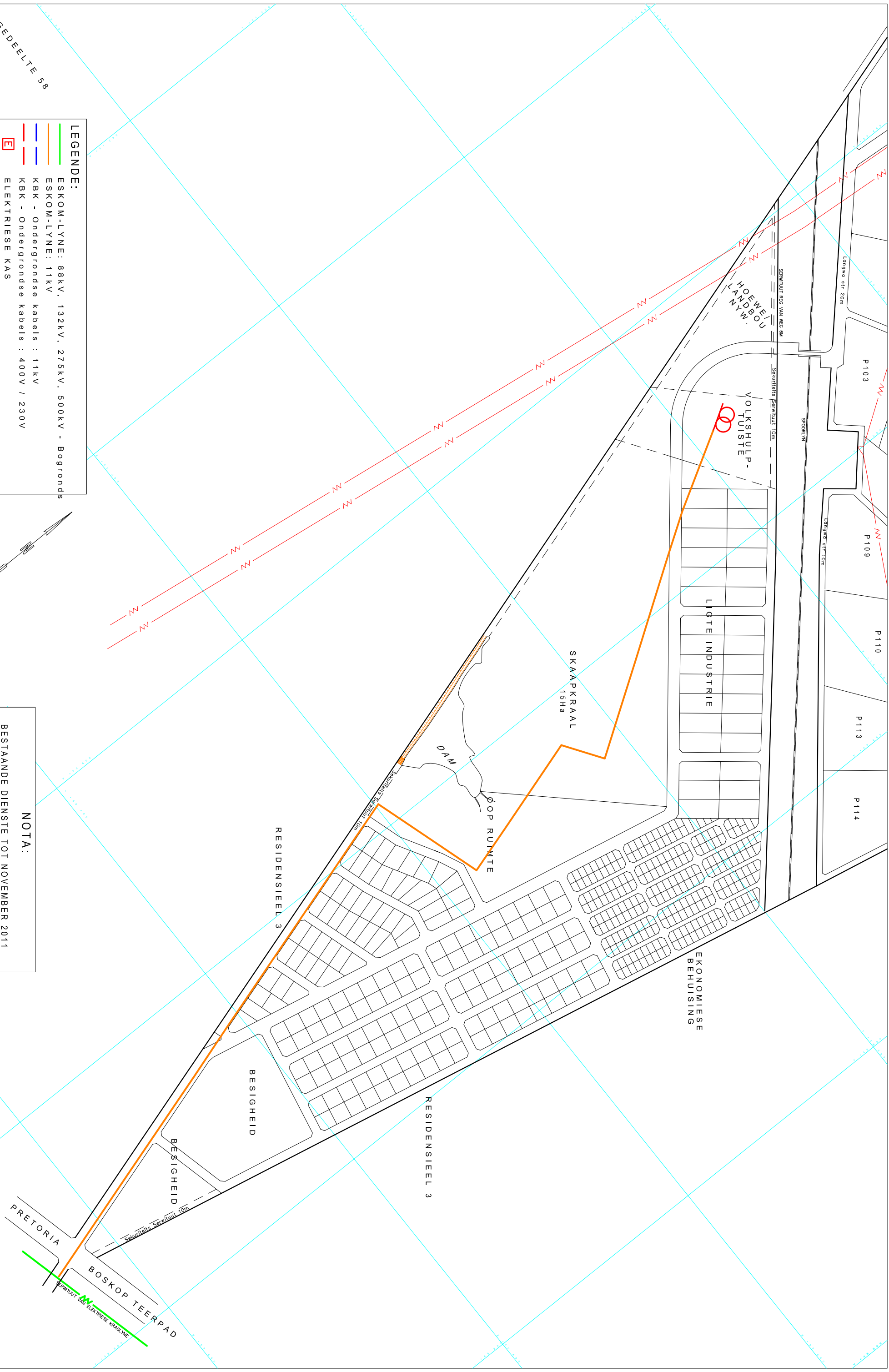
TEKENING NR. **U08E**
 GETEKENER: W van Romburgh
 CAD: VERNY 07/11/2017, 07:52:57Z
 DATUM: 22/07/2011
 SKAAL 1:2000

LEGENDE:

- ESKOM-LYNE: 88kV, 132kV, 275kV, 500kV - Bogronds
- ESKOM-LYNE: 11kV
- KBK - Ondergrondse kables : 11kV
- KBK - Ondergrondse kables : 400V / 230V
- E ELEKTRIESE KAS
- LK LASKAS
- O TRANSFORMATOR
- MSS MINI SUBSTASIE



NOTA:
 BESTAANDE DIENSTE TOT NOVEMBER 2011



Addendum 2

Relevant Municipality Correspondence

Tshwane Letter

Eskom Applications (to follow)



Tel: (012) 542 1010
Fax: (012) 542 2097
Email: burotech@burotech.co.za

Buro Tech Consulting Engineers CC 141 Main Street Heatherdale PO Box 59887 Karen Park 0118

EMAIL MESSAGE

To: TSHWANE METRO
eMail: FrankG@TSHWANE.GOV.ZA
For Attention: Mr. Frank Gibbon
Date: 2012 01 20
Page: 1 of 2

From: Ralph Gordon
Cell: 082 601 4588
Fax No: 012 542 2097
Tel Nr: 012 542 1010
E-mail: RalphG@burotech.co.za
Ref: PE15/STA

**RE: TOWNSHIP DEVELOPMENT OF:
PORTIONS 38, 90, 96 OF THE FARM KLEINFONTEIN 368JR AND
ON PORTIONS 63, 67, 68 AND REMAINDER OF PORTION 14 OF THE FARM
DONKERHOEK 365JR
IN GAUTENG PROVINCE**

SUPPLY AUTHORITY:

Dear Sir,

With reference to that above as well as the attached locality map in Google Earth Format the following:

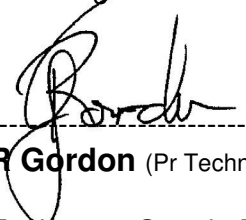
The above proposed development is located within your municipal jurisdiction area. However, Eskom is the supplier of electricity to the existing farm. It does not appear that City of Tshwane have any electrical infrastructure near the proposed development.

We herewith wish to request City of Tshwane to issue us with a formal letter, which will authorise Eskom to supply electricity to the proposed development.

Based on Preliminary Zoning/Usage allocations by the town planners Final Notified Maximum Demand (NMD) should be in the order of 17.6MVA, with the existing NMD estimated to be approximately 1.2MVA.

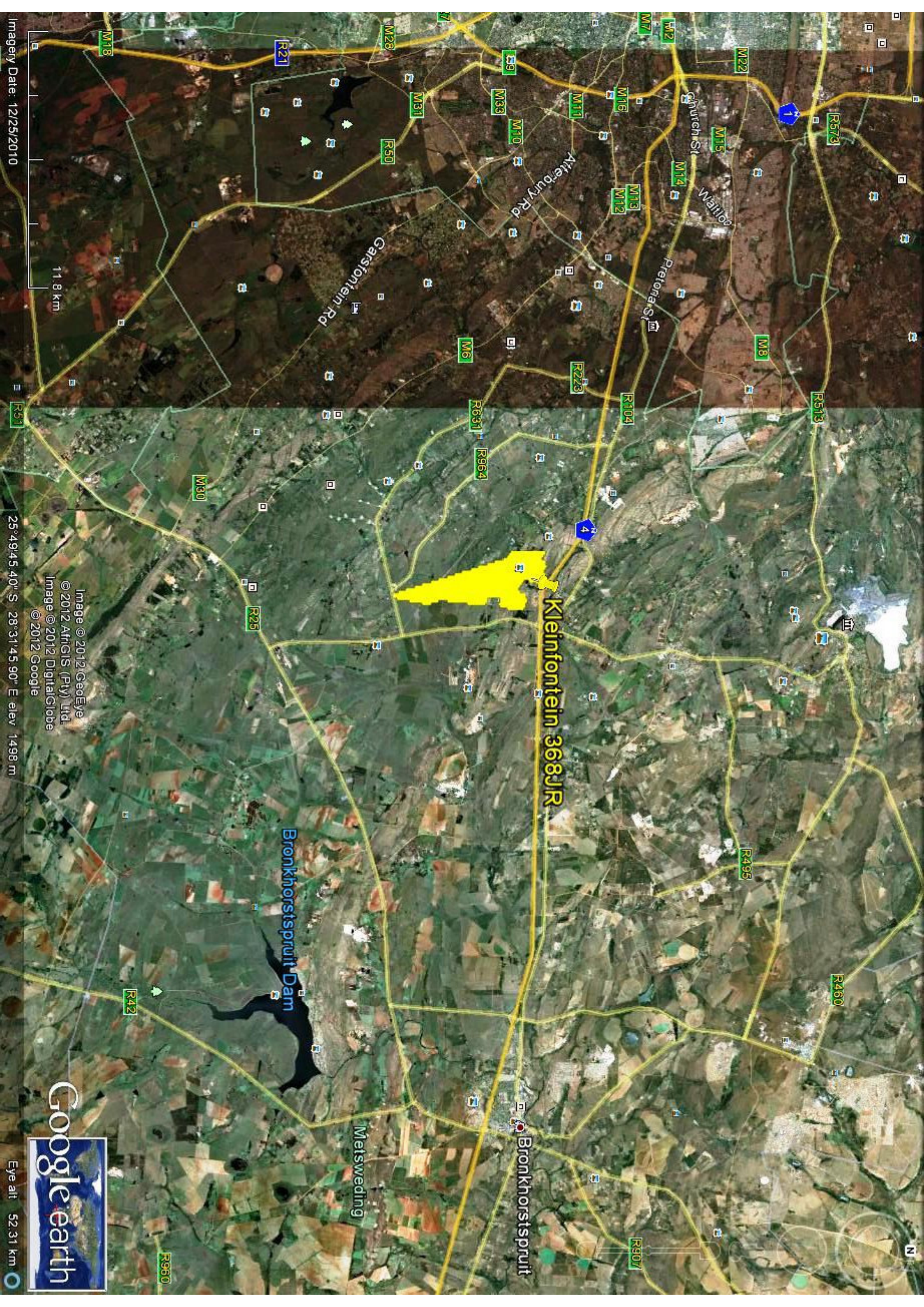
Your assistance in this regard will be highly appreciated.

Kind Regards



R Gordon (Pr Techni Eng)

Enclosure: Google Earth Locality Map



Kleinfontein 368JR

Bronkhorstspruit Dam

Bronkhorstspruit

Metsweding

11.8 km

Imagery Date: 12/25/2010

25°49'45.40" S 28°31'45.90" E elev 1498 m

Image © 2012 GeoEye
© 2012 Afrigis (Pty) Ltd.
Image © 2012 DigitalGlobe
© 2012 Google



Eye alt 52.31 km



Annexure G(vii)

WATER CONSUMPTION
FIGURES

COMMENTS ON UNIT WATER CONSUMPTION FIGURES IN PVA ENGINEER'S REPORT FOR THE KLEINFONTEIN DEVELOPMENT

It was noticed that the unit water consumption figures used in the report are those that generally apply to normal urban and rural developments in the RSA.

The Kleinfontein development is however in many respects unique, which have a large impact on water consumption.

Fortunately Kleinfontein's water was metered from an early date and reliable figures are available over the last 11 years. These figures have been analysed in detail as shown in the attachment and differ considerably from the figures used generally in the RSA.

It is however not a case that the low water consumption is due to a high water price as the same low consumption figures were also experienced right from the beginning when the price of water was fairly low. It is also not only the lower income groups in the community that use less water, as the general low water consumption figures apply to all income groups.

The reason for this situation lies in the topography of Kleinfontein and the characteristics of the population, both of which are basically permanent features:

Kleinfontein has developed high up on the slopes of the Magaliesberg. Water pressures will always be relatively low as there will never be a high differential head between the reservoirs and the water users. (Water consumption drops very fast with decreasing water head).

Kleinfontein is a development catering for a cultural group with a specific entrenched outlook on nature. Water is deemed precious and is not wasted. Hardened and indigenous plants and succulents requiring little water are mainly planted. No exotic trees and shrubs, which generally cannot live on rain only, are allowed in open areas and parks. Collecting rainwater from roofs is encouraged. Households are generally self sufficient and owners prefer to water their own gardens which result in the most efficient use of water. Again it is a case of preference and not subject to income as it applies to all walks of life in the development and it will therefore not change in the future as the culture is entrenched in the development.

There is therefore no reason that the actual water consumption figures are used for Kleinfontein for the design of water reticulations, the sizing of pumps, the operation of boreholes, etc. From an environmental perspective, it will also be the correct path to follow as it preserves the area, prevents the over-exploitation of boreholes, protects the ground water and the landscape and will cause a smaller carbon footprint by decreasing the extent of manufactured pipework. It is also the intention of the management of Kleinfontein to regulate water consumption at this lower rate.

The necessary water storage of 48h as for pumping schemes will however still apply but will be based on actual average water consumption in Kleinfontein. Fire water provision will be in accordance with the Red Book.

We make the enclosed attachment with actual measured unit consumption figures for Kleinfontein available for use by all the consultants in the DFA Formalisation Team. Should you have any query on any figure or require the actual unit consumption figure of Kleinfontein for another category, please be free to contact me.

We would therefore appreciate it if the actual Kleinfontein water consumption unit rates are used as a basis in lieu of the estimated RSA unit rates for the formalisation of Kleinfontein in the interest of the environment.

We will also appreciate it if you could point out the actual measured consumption figures in the Tribunal hearing, should anybody complain about unit consumption figures being too low.

Yours faithfully,

Niël de Beer
Chairman KBK Formalisation Coordinating Team



Annexure G(viii)

TRAFFIC REPORT



TECHWORLD
consulting ENGINEERS

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Garsfontein ext 15
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<< PO Box 12530
Hatfield
0028
South Africa

*Traffic Engineering
Transportation Planning
Transport Economy
Project Management
Project Financing & Viability*

**TRAFFIC INVESTIGATION:
TOWNSHIP ESTABLISHMENT FOR THE
KLEINFONTEIN SETTLEMENT**

February 2012

TITLE OF REPORT:

TRAFFIC INVESTIGATION:

TOWNSHIP ESTABLISHMENT FOR THE KLEINFONTEIN SETTLEMENT

DATE: February 2012**STATUS OF REPORT:** Final Report**CLIENT:***KLEINFONTEIN BOEREBELANGE KOOPERATIEF BEPERK*

PO Box 925

Rayton

1001

CONTACT PERSON: Mr. JJ Groenewald**PROJECT NUMBER:**

TW526

REPORT NUMBER:

Traffic Report_Kleinfontein Settlement_22Feb12

PREPARED BY:

TECHWORLD (Pty) Ltd

P O Box12530

Hatfield 0028

Tel: (012) 998 – 3541

DESCRIPTION OF PROJECT:

This is a scoping report for a traffic investigation in support of the planned township establishment of the Kleinfontein Settlement.

PROJECT TEAM:

AUTHOR (S) OF REPORT:

CHECKED AND DISTRIBUTION APPROVAL:

Pieter Kruger for
TECHWORLD**COPYRIGHT:** TECHWORLD (Pty) Ltd

TABLE OF CONTENTS

1	INTRODUCTION AND SCOPE	1
2	EXISTING AND PLANNED ROAD NETWORK.....	2
2.1	PWV MAJOR ROAD NETWORK	2
2.1.1	ROAD RESERVE REQUIREMENTS	2
2.1.2	PLANNING STATUS OF PROVINCIAL ROADS	2
2.1.3	OTHER PROVINCIAL ROADS	3
2.2	TSHWANE ROAD MASTER PLAN	3
2.3	ACCESS	3
3	FUNDING OF REQUIRED TRANSPORTATION SERVICES AND ROAD NETWORK IMPROVEMENTS	4
4	EXPECTED TRAFFIC IMPACT OF DEVELOPMENT	4
4.1	APPLICATION.....	4
4.2	EXPECTED TRIP GENERATION.....	6
4.3	EXISTING TRAFFIC DEMAND VERSUS SUPPLY IN THE STUDY AREA.....	6
4.4	REQUIRED TRANSPORTATION SERVICES AND INFRASTRUCTURE TO SERVE APPLICATION.....	7
4.4.1	PUBLIC TRANSPORTATION	7
4.4.2	ROAD NETWORK.....	7
5	MITIGATION MEASURES AND ROADS AND STORM WATER CONTRIBUTIONS.....	8

6	CONCLUSIONS	8
7	RECOMMENDATION.....	11

TABLE OF TABLES

Table 4-1: Planned Land Uses	4
Table 4-2: Expected Trip Generation	6

TABLE OF FIGURES

Figure 1: Locality Plan and Existing Road Network	12
Figure 2: PWV Major Road Network	12
Figure 3: Tshwane Road Master Plan	12
Figure 4: Eastern Extension of Tshwane Road Master Plan	12
Figure 5: Existing 12-Hour and Daily (2010 / 2011) Traffic Demand in Study Area	12

TABLE OF ANNEXURE

Appendix A: Kleinfontein - Township Layout Plan	12
Appendix B: Hazeldean Precinct Plan and Road Master Plan	12

1 INTRODUCTION AND SCOPE

The formalization and expansion of the Kleinfontein Settlement to the east of Pretoria, i.e. formal township establishment, is planned. This proposed township is situated on the Remainder, Portion 38, Portion 90 and Portion 96 of the farm Kleinfontein 368 JR and the remainder of Portion 14, Portion 63, Portion 67 and Portion 68 of the farm Donkerhoek 365 JR.

The township comprises about 793.51 ha and is bordered by the N4 Freeway towards the north, Road D483 (Cullinan Road R515) towards the east, Road D631 (Boschkop Road) towards the south, and Road D964 (Donkerhoek Road) towards the west. In the vicinity of the application site, the planned alignment of Route K169 is on the existing alignment of Road D483, the planned alignment of Route K40 is on the existing alignment of Road D631, and the planned alignment of Route K54 / K205 (N) is on the existing alignment of Road D964.

An existing railway line separates a small southern section of the site from the remainder of the site.

The proposed development of the Kleinfontein Settlement is a very low density rural development that comprises of a large percentage (37%) of agricultural stands of about 1.5ha in extent. In total about 1,590 residential units, 174,350 m² commercial space (Business 1 and Industrial 1), and 48,270 m² institutional space (Institutional 1, Educational, Places of Amusement / Public Worship, and Social Halls) can be developed.

The Site Layout Plan (attached as *Appendix A*) shows that a large portion of the site will be used for open space, roads, and ancillary uses. Only about 361.22 ha or 46% of the total site will be used for the stated land uses that will directly contribute to trip generation.

The Kleinfontein Settlement is located to the east of the planned Hazeldean Precinct (attached as *Appendix B*) which is a large high-density residential development with supporting commercial facilities. The two development areas however are not comparable in terms of their expected trip generation and traffic impact.

Refer to *Figure 1* and *Figure 2* (attached).

2 EXISTING AND PLANNED ROAD NETWORK

2.1 PWV MAJOR ROAD NETWORK

The PWV major road network in this area is shown in *Figure 2*. This figure shows that the application site is surrounded / bordered by planned provincial roads and freeways, namely Routes K169, K40, and K54 / K205 (N) in the immediate vicinity of the site, and PWV 17 further towards the west.

In the immediate vicinity of the site, planned Route K169 follows the existing alignment of Road D483 (Cullinan Road), planned Route K40 follows the existing alignment of Road D631 (Boschkop Road), while planned Route K54 / K205 (N) follows the existing alignment of Road D964 (Donkerhoek Road).

Access to the freeway network (i.e. the N4 Freeway) is obtained via the D483 / N4 interchange.

The regional accessibility of the application site is excellent, given the major road network planning in the immediate vicinity of the site.

2.1.1 ROAD RESERVE REQUIREMENTS

None of the planned K-routes transverses the application site although the most southern point of the application site is bordered by the road reserve for Route K40. The appropriate road reserve for this route will be provided by the application site. Refer to *Figure 2* and *Appendix A*.

2.1.2 PLANNING STATUS OF PROVINCIAL ROADS

The following is the status of the provincial roads in this area:

- ❖ *The preliminary design of Route K169 is completed only for a section of this road that crosses the planned alignment of Route K40. The same applies for Route K40 to the west of Route K169. These route sections however have not been accepted by the EC of Gautrans and have also not been gazetted.*
- ❖ *Preliminary design has been completed, accepted by the EC, and published in the Provincial Gazette for Route K54 in this area (PRS 86/153 – Report No 1487 – EC date 2002/05/22).*
- ❖ *No preliminary design has been done for Route K205 (N) in this area.*

Routes K169 and K205 (N) are located more than 500m from the application site.

In terms of the stipulations of the Gauteng Infrastructure Act of 2001, a Section 7 Report is thus required only for Route K40.

2.1.3 OTHER PROVINCIAL ROADS

The only other provincial road that is affected by the application site is Road D1342. This is an existing Class 3 provincial road that transverses the application site and is known as the Rhenosterfontein Road. Although a new alignment is shown on the PWV Major Roads Plan through the application site – assumingly to follow a more direct line towards the east - no detailed planning was done to support this proposal. This section of route can therefore follow the alignment of the existing Rhenosterfontein Road through the application site.

The alignment and required road reserve of 30m for Road D1342 will have to be determined and kept out of the township.

Refer to *Figure 2* and *Appendix A*.

2.2 TSHWANE ROAD MASTER PLAN

The Tshwane Road Master Plan, attached as *Figure 3*, does not cover the study area for the application. This road master plan has to be extended in an eastern direction to include the newly incorporated areas of Kungwini.

Recent attempts to develop a road master plan for this area are shown in *Figure 4*. This plan also does not include the application site and has no status.

The Road Master Plan for Tshwane will have to be extended in an eastern direction to accommodate the planned development.

2.3 ACCESS

Access to the area is currently obtained from a Northern Access Road connected to Road D483 (Route K169) approximately 640m south of the Southern Terminal of the N4 / D483 Interchange and directly from Road D1342 (Rhenosterfontein Road) at a few positions.

Additional access can also be obtained in future directly from Road D631 (Route K40) approximately 1.2km from the future intersection of Route K40 with Route K 205 (N).

The existing railway line however separates the southern section – and this new access – from the remainder of the application site. Refer to *Appendix A*.

3 FUNDING OF REQUIRED TRANSPORTATION SERVICES AND ROAD NETWORK IMPROVEMENTS

Limited funding from local authorities for the required infrastructure and transportation service improvements to sustain development has lately resulted in developers providing most of this funding through the direct improvement of the road network in the vicinity of application sites.

The applicant for this township will also contribute to the road network by providing the required road infrastructure to support the development.

Densification is taking place in the eastern areas of Tshwane – formerly Kungwini - that includes large planned areas such as the Hazeldean Precinct. All these applications must contribute to the road network in the study area.

4 EXPECTED TRAFFIC IMPACT OF DEVELOPMENT

4.1 APPLICATION

The land uses included in the application are the following (refer to *Appendix A*):

Table 4-1: Planned Land Uses

Land Use	Erven	Area	Development Control		Developable Land Use	
	no	ha	Extent	Unit	Extent	Units
Residential 1	782	24.87	1.00	unit/erf	782	units
Residential 2	80	5.71	15-60	units/ha	214	units
Business 1	13	13.99	0.50	FSR	69,950	sqm
Industrial 1	52	11.66	0.90	FSR	104,400	sqm
Institutional 1	1	0.35	0.60	FSR	2,100	sqm
Agricultural	198	294.63	3.00	units/erf	594	units
Educational	1	3.41	0.50	FSR	17,050	sqm
Special for Cemetery & Funeral Parlour	2	1.49				

TRAFFIC INVESTIGATION – TOWNSHIP ESTABLISHMENT FOR THE KLEINFONTEIN SETTLEMENT

Land Use	Erven	Area	Development Control		Developable Land Use	
	no	ha	Extent	Unit	Extent	Units
Special for Private Open Space	14	214.00				
Special for Workshop, Maintenance	1	1.00	0.50	coverage		
Special for Public Garage, Shop, Industrial	1	0.18	0.50	coverage		
Special for Engineering Services	3	0.24				
Special for Sewer Works	1	16.10				
Special for Place of Amusement	6	1.82	0.80	FSR	14,560	sqm
Special for Telecommunication	1	1.87				
Special for Private Open Space and Social Hall	2	4.78			14,560	sqm
Special for Access Control	2	0.37				
Special for Internal Access	40	87.89				
Undetermined	13	107.70	10%-20%	coverage		
Public Road	0	1.39				
TOTAL	1214	793.51				
SUMMARY	Units				1,590	Residential
	m²				174,350	Commercial
	m²				48,270	Institutional

The Kleinfontein Settlement / Township are a very low density rural development that comprises of a large percentage (37%) of agricultural stands of about 1.5ha in extent. In total about 1,590 residential units, 174,350 m² commercial space (Business 1 and Industrial 1), and 48,270 m² institutional space (Institutional 1, Educational, Places of Amusement / Public Worship, and Social Halls) can be developed.

The stated land uses will only comprise about 361.22 ha or 46% of the total area. The remainder will be used for open space, roads, and ancillary uses.

4.2 EXPECTED TRIP GENERATION

The expected private vehicle trip generation of the application is based on very conservative estimates at this stage and amounts to about 3,845 weekday peak hour trips.

Table 4-2: Expected Trip Generation

DESCRIPTION	AREA (HA)	DEVELOPMENT CONTROL	UNIT	EXTENT OF LAND USE	UNITS	PEAK HOUR TRIPS
Residential 1	24.87	1.00	unit/erf	782	units	782
Residential 2	5.71	15-60	units/ha	214	units	182
Business 1	13.99	0.50	FSR	69,950	sqm	1749
Industrial 1	11.66	0.90	FSR	104,400	sqm	835
Agricultural	294.63	3.00	units/erf	594	units	297
TOTAL						3845

The expected trip generation of the application translates to uniform development over the total area of the site at a FAR of 0.20 to 0.25 and trip rates of 0.20 to 0.25 / 100 m² GLA; i.e. a very low intensity development.

4.3 EXISTING TRAFFIC DEMAND VERSUS SUPPLY IN THE STUDY AREA

Figure 5 shows the existing (2010 and 2011) traffic demand in the study area in terms of average 12-hour and daily traffic counts on the various road linkages.

All the roads in the study area are currently two-lane provincial roads. The daily capacity of a two-lane road depends on the type of terrain, the percentage no-passing zones / bypassing lanes, directional distribution, the percentage heavy vehicles, and the percentages traffic in the peak hours.

For the particular study area however, the daily capacity is at least 10,000 vehicles per day.

It is evident from inspection of *Figure 5* that the capacity - in general - of the existing road network in the area is sufficient to support the planned development.

Specific bottlenecks that will have to be investigated further include the following:

- ❖ Terminals of D483 (Cullinan Road) / N4 interchange;
- ❖ Intersection D483 (Cullinan Road) and Northern Access Road (Access);
- ❖ Intersection D483 (Cullinan Road) and Road D964 (Rhenosterfontein Road) (Access);
- ❖ Intersection Road D483 (Cullinan Road) and Road D631 (Boschkop Road);
- ❖ Intersection Road D483 (Cullinan Road) and Road P6/1 (Bapsfontein Road);
- ❖ Intersection Road D964 (Donkerhoek Road) and Road D631 (Boschkop Road);
- ❖ Intersection Road D631 (Boschkop Road) and Road D2762 (Graham Road);

4.4 REQUIRED TRANSPORTATION SERVICES AND INFRASTRUCTURE TO SERVE APPLICATION

4.4.1 PUBLIC TRANSPORTATION

Public transportation will play an increasingly important role to serve the urban areas in South Africa given that private transportation is not sustainable and the promotion of public transportation is stated government policy.

The role of public transportation will thus be investigated for this application and the required public transportation services and facilities will be provided.

4.4.2 ROAD NETWORK

The required upgrading of the road network will be determined to serve the application. This will entail the upgrading of Road D1342 (Renosterfontein Road) as well as the following intersections:

- ❖ Northern Access Road (existing) with Road D483;
- ❖ Road D1342 (existing Renosterfontein Road) with Road D483;
- ❖ Southern Access Road (new road) with Road D631;

In addition, the potential bottlenecks in the network – listed in *Section 4.3* - will be assessed from a capacity and operational point of view.

The scope of these improvements can only be determined at a later stage when more information is available; i.e. phased development plan, and more detail on the planned land uses.

5 MITIGATION MEASURES AND ROADS AND STORM WATER CONTRIBUTIONS

The applicant is committed to implement the required road mitigation measures to accommodate the additional traffic in terms of the findings of a comprehensive traffic impact study when the execution of this study is possible.

6 CONCLUSIONS

1. The formalization and expansion of the Kleinfontein Settlement to the east of Pretoria is planned. This proposed township is situated on the Remainder, Portion 38, Portion 90 and Portion 96 of the farm Kleinfontein 368 JR and the remainder of Portion 14, Portion 63, Portion 67 and Portion 68 of the farm Donkerhoek 365 JR.
2. The township comprises about 793.51 ha and is bordered by the N4 Freeway towards the north, Road D483 (Cullinan Road R515) towards the east, Road D631 (Boschkop Road) towards the south, and Road D964 (Donkerhoek Road) towards the west.
3. In the immediate vicinity of the site, planned Route K169 follows the existing alignment of Road D483 (Cullinan Road), planned Route K40 follows the existing alignment of Road D631 (Boschkop Road), while planned Route K54 / K205 (N) follows the existing alignment of Road D964 (Donkerhoek Road).
4. The regional accessibility of the application site is excellent, given the major road network planning in the immediate vicinity of the site.
5. None of the planned K-routes transverses the application site although the most southern point of the application site is bordered by the road reserve for Route K40. The appropriate road reserve for this route will be provided by the application site.

6. In terms of the stipulations of the Gauteng Infrastructure Act of 2001, a Section 7 Report is required only for Route K40.
7. The only other provincial road that is affected by the application site is Road D1342. This is an existing Class 3 provincial road that transverses the application site and is known as the Rhenosterfontein Road. Although a new alignment is shown on the PWV Major Roads Plan through the application site – assumingly to follow a more direct line towards the east - no detailed planning was done to support this proposal. This section of route can therefore follow the alignment of the existing Rhenosterfontein Road through the application site. The alignment and required road reserve of 30m for this road will have to be determined and kept out of the township.
8. The Tshwane Road Master Plan does not cover this area. This road master plan has to be extended in an eastern direction to include the newly incorporated areas of Kungwini.
9. Access to the area is currently obtained from a Northern Access Road connected to Road D483 (Route K169) approximately 640m south of the Southern Terminal of the N4 / D483 Interchange and directly from Road D1342 (Rhenosterfontein Road) at a few positions. Additional access can also be obtained in future directly from Road D631 (Route K40) approximately 1.2km from the future intersection of Route K40 with Route K 205 (N).
10. Limited funding from local authorities for the required infrastructure and transportation service improvements to sustain development has lately resulted in developers providing most of this funding through the direct improvement of the road network in the vicinity of application sites. The applicant for this township will also contribute to the road network by providing the required road infrastructure to support the development.
11. The Kleinfontein Settlement / Township are a very low density rural development that comprises of a large percentage (37%) of agricultural stands of about 1.5ha in extent. In total about 1,590 residential units, 174,350 m² commercial space (Business 1 and Industrial 1), and 48,270 m² institutional space (Institutional 1, Educational, Places of Amusement / Public Worship, and Social Halls) can be developed.
12. The expected private vehicle trip generation of the application is based on very conservative estimates at this stage and amounts to about 3,845 weekday peak hour trips.

13. The expected trip generation translates to uniform development over the whole site at a FAR of 0.20 to 0.25 and trip rates of 0.20 to 0.25 / 100 m² GLA; i.e. a very low intensity development.
14. All the roads in the study area are currently two-lane provincial roads. The daily capacity of a two-lane road depends on the type of terrain, the percentage no-passing zones / bypassing lanes, directional distribution, the percentage heavy vehicles, and the percentages traffic in the peak hours. For the specific study area however, the daily capacity is at least 10,000 vehicles per day.
15. It is evident from inspection of the existing traffic demand in the study area that the capacity - in general - of the existing road network in the area is sufficient to support the planned development. Specific bottlenecks that will have to be investigated include the following:
 - ❖ Terminals of D483 (Cullinan Road) / N4 interchange;
 - ❖ Intersection D483 (Cullinan Road) and Northern Access Road (Access);
 - ❖ Intersection D483 (Cullinan Road) and Road D964 (Rhenosterfontein Road) (Access);
 - ❖ Intersection Road D483 (Cullinan Road) and Road D631 (Boschkop Road);
 - ❖ Intersection Road D483 (Cullinan Road) and Road P6/1 (Bapsfontein Road);
 - ❖ Intersection Road D964 (Donkerhoek Road) and Road D631 (Boschkop Road);
 - ❖ Intersection Road D631 (Boschkop Road) and Road D2762 (Graham Road);
16. The required upgrading of the road network will still be determined to serve the application. This will entail the upgrading of Road D1342 (Renosterfontein Road) as well as the following intersections:
 - ❖ Northern Access Road (existing) with Road D483;
 - ❖ Road D1342 (existing Renosterfontein Road) with Road D483;
 - ❖ Southern Access Road (new road) with Road D631;
17. In addition, the potential bottlenecks in the network – listed in *Section 4.3* - will be assessed from a capacity and operational point of view. The scope of these improvements can only be determined at a later stage when more information is available; i.e. phased development plan, and more detail on the planned land uses.

7 RECOMMENDATION

A comprehensive traffic impact study will be submitted for this application in due course.

The applicant is committed to his fair share in road mitigation measures by means of direct road construction. This will be done in a phased manner.

FIGURES

Figure 1: Locality Plan and Existing Road Network

Figure 2: PWV Major Road Network

Figure 3: Tshwane Road Master Plan

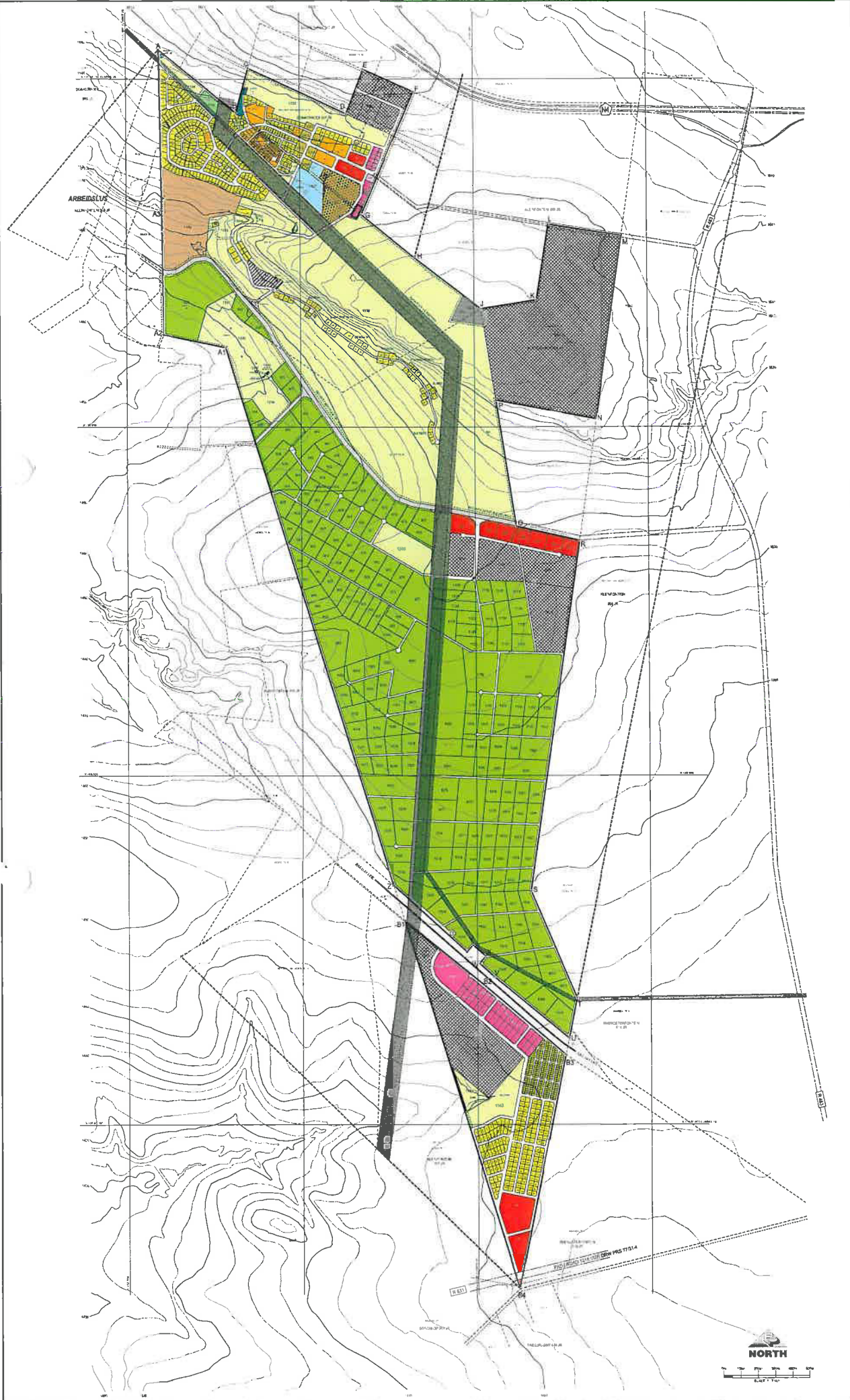
Figure 4: Eastern Extension of Tshwane Road Master Plan

Figure 5: Existing 12-Hour and Daily (2010 / 2011) Traffic Demand in Study Area

ANNEXURES

Appendix A: Kleinfontein - Township Layout Plan

Appendix B: Hazeldean Precinct Plan and Road Master Plan



PROPOSED TOWNSHIP
KLEINFONTEIN REDESSETTING
 SITUATED ON
 REMAINDER PORTION 24, PORTION 96 AND PORTION 98
 OF THE FARM
KLEINFONTEIN 968 JR
 AND
 REMAINDER OF PORTION 48, PORTION 83, PORTION 87
 AND PORTION 88
 OF THE FARM
DONKERHOEK 365 JR

LOCALITY PLAN 1:10 000

NOTES

RED CIRCLED FIGURES INDICATE PLANNING

RED CIRCLED FIGURES INDICATE PLANNING

RED CIRCLED FIGURES INDICATE PLANNING

REVISIONS

NO	DESCRIPTION	DATE

AUTHORITY REFERENCE NO

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 SUPREMACY VOORRESERVE PLANPRACTICE 44

LAND USE TABLE

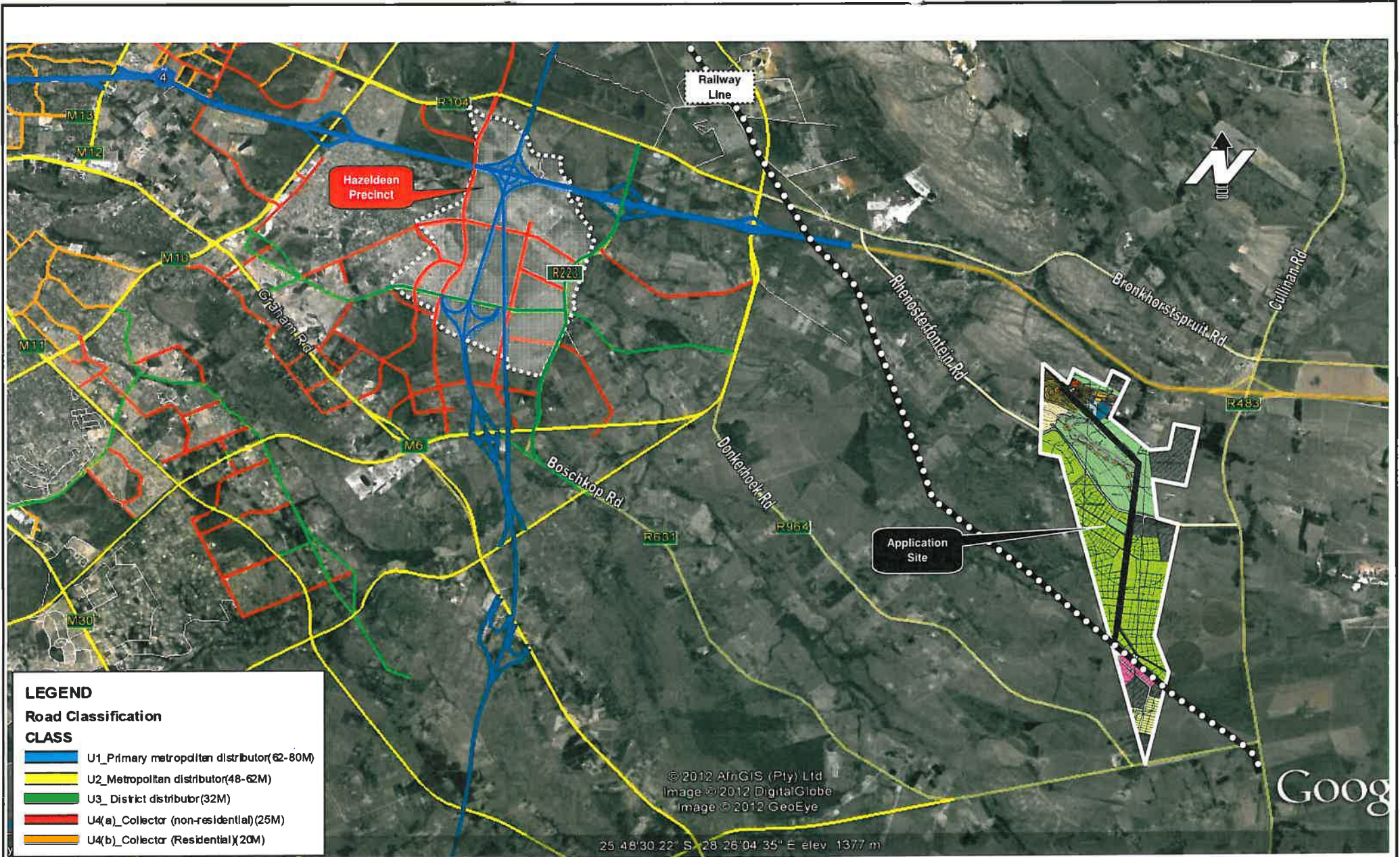
NO	DESCRIPTION	AREA (HA)	PERCENTAGE	REMARKS
1	RESIDENTIAL 1	265	24.87	7.1-12.1
2	RESIDENTIAL 2	88	8.11	7.1-12.1
3	RESIDENTIAL 3	13	1.20	7.1-12.1
4	RESIDENTIAL 4	52	4.81	27.1-32.1
5	METROPOLITAN	52	4.81	5.6
6	INDUSTRIAL	206	19.12	5.6-12.1
7	RECREATIONAL	84	7.76	17.1-27.1
8	OPEN SPACE	14	1.29	17.1-27.1
9	AGRICULTURAL	1	0.11	1.64
10	WATER	1	0.09	1.64
11	ROADS	3	0.28	1.64
12	UNDEVELOPED	1	0.09	1.64
13	WATER	1	0.09	1.64
14	WATER	1	0.09	1.64
15	WATER	1	0.09	1.64
16	WATER	1	0.09	1.64
17	WATER	1	0.09	1.64
18	WATER	1	0.09	1.64
19	WATER	1	0.09	1.64
20	WATER	1	0.09	1.64
21	WATER	1	0.09	1.64
22	WATER	1	0.09	1.64
23	WATER	1	0.09	1.64
24	WATER	1	0.09	1.64
25	WATER	1	0.09	1.64
26	WATER	1	0.09	1.64
27	WATER	1	0.09	1.64
28	WATER	1	0.09	1.64
29	WATER	1	0.09	1.64
30	WATER	1	0.09	1.64
TOTAL		1274	100.00	

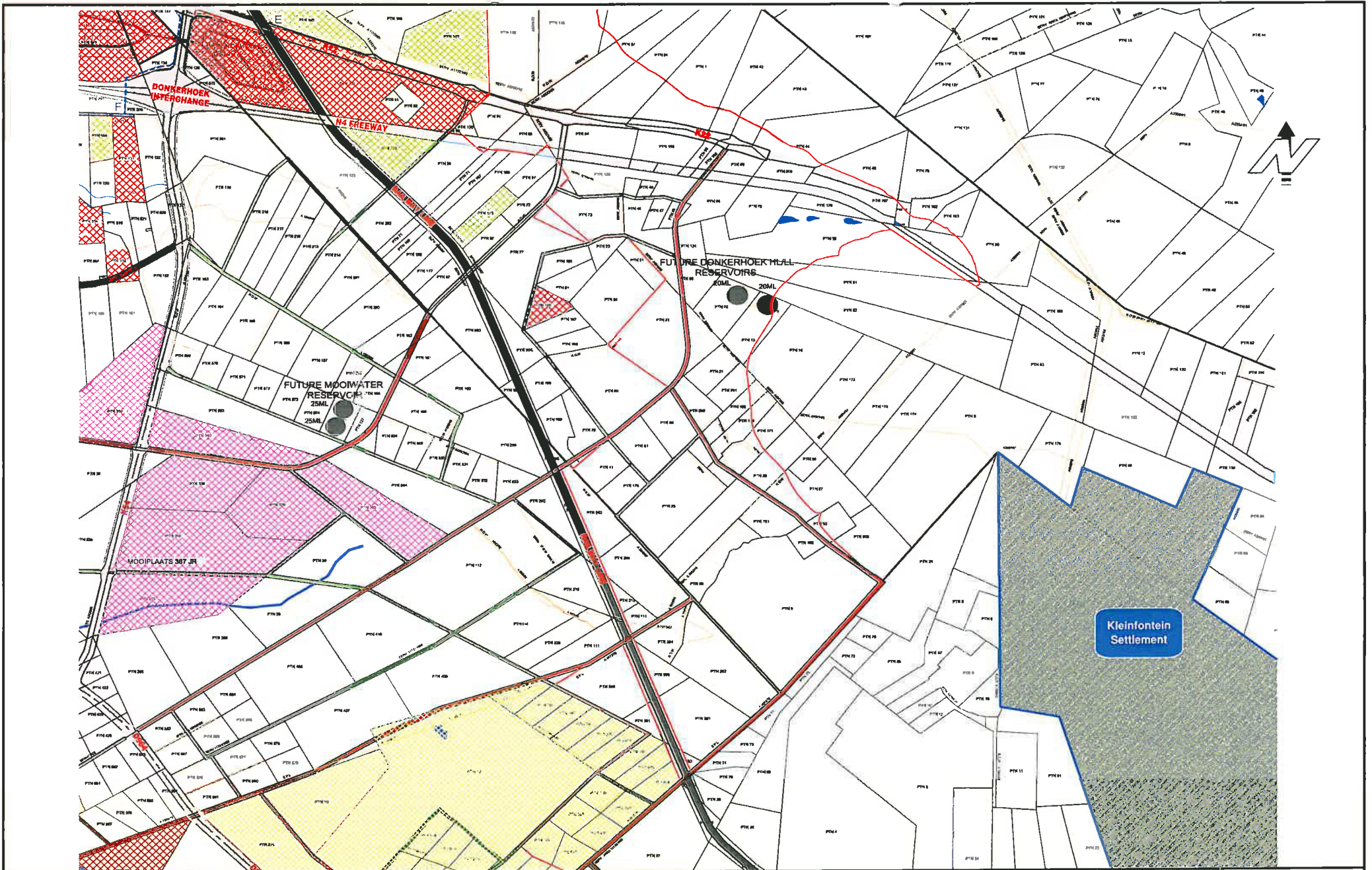
PlanPractice
 town & country
 200 DASH MELO PARK #102 TEL 012 363 7641

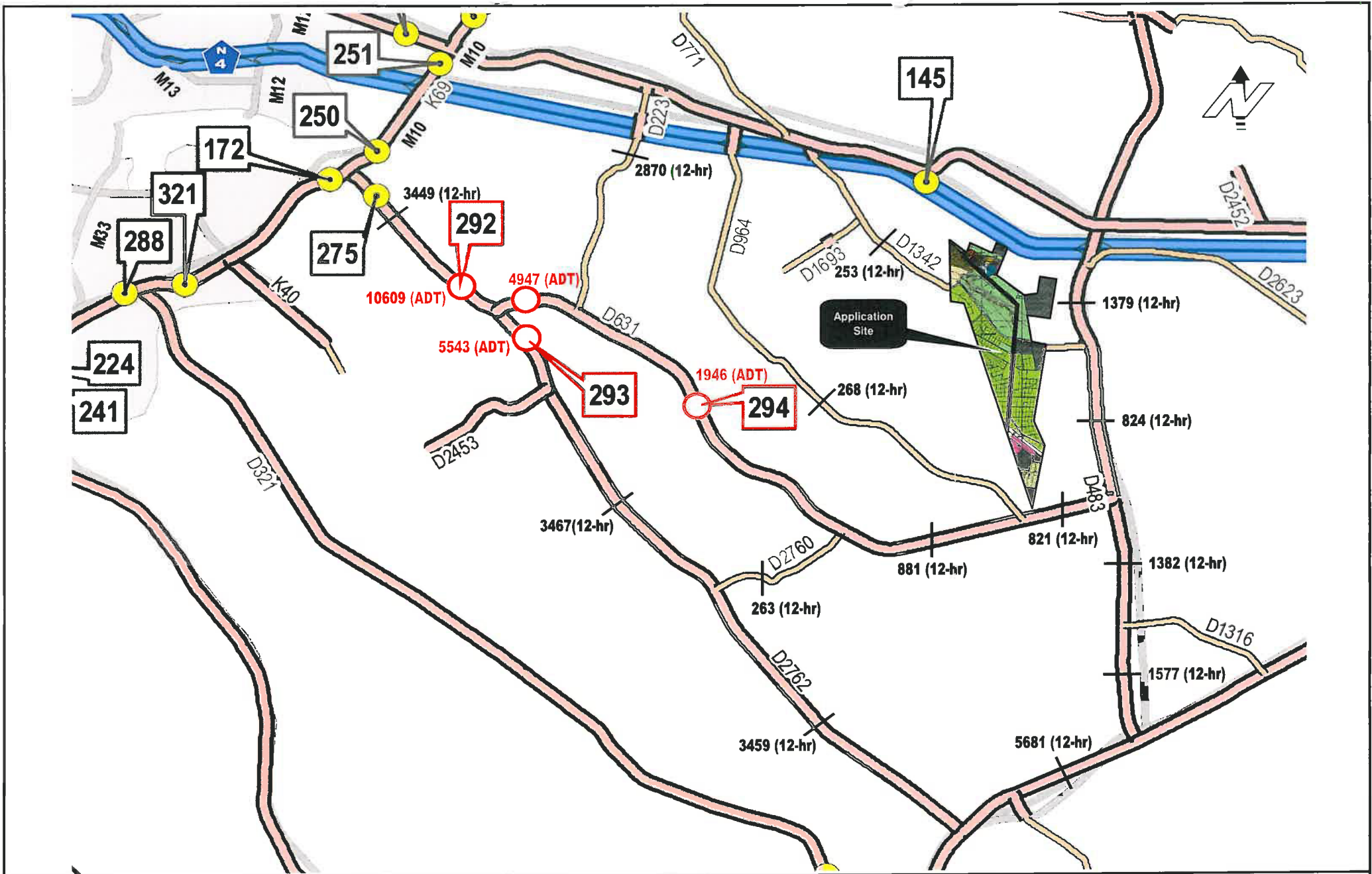
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 MapPractice

DATE COMPILED: 11 JUL 2011
 SCALE: 1:7 000
 DATE CHECKED: 11 JUL 2011
 SCALE: 600/588/02
 CHECKED BY: R/V/2011











Annexure G(ix)

MARKET STUDY



Kleinfontein Mixed Use Market Study

MARKET RESEARCH FINDINGS & RECOMMENDATIONS

December 2011

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SOUTH AFRICAN COUNCIL OF SHOPPING CENTRES (SACSC)



The information contained in this report has been compiled with the utmost care and accuracy within the parameters specified in this document. Any decision based on the contents of this report is, however, the sole responsibility of the decision maker.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	5
CHAPTER 1: INTRODUCTION	26
1.1 BACKGROUND	26
1.2 PROJECT BRIEF AND METHODOLOGY	26
1.3 KLEINFONTEIN OVERVIEW	27
1.4 STUDY AREA DELINEATION	28
1.5 REPORT OUTLINE	29
CHAPTER 2: LOCATION ANALYSIS	32
2.1 INTRODUCTION	32
2.2 REGIONAL / DISTRICT CONTEXTUAL PERSPECTIVE.....	32
2.3 KUNGWINI LOCAL MUNICIPAL AREA	34
2.4 DEVELOPMENT PRESSURES AND DEMANDS	40
2.5 SELECTED PROPOSED DEVELOPMENTS	44
2.6 BUILDING PLAN DATA – BUILDINGS COMPLETED	51
2.7 SYNTHESIS	55
CHAPTER 3 ECONOMIC PROFILE	57
3.1 INTRODUCTION.....	57
3.2 REFERENCE FRAMEWORK.....	57
3.3 MACRO-ECONOMIC FUNDAMENTALS	58
3.4 Q 4 2011 SA QUARTERLY PERSPECTIVES – ABSA CAPITAL.....	59
3.5 COMPOSITE BUSINESS CYCLE INDICATORS – SARB, November 2011	64
3.6 PROPERTY MARKET PERFORMANCE	65
3.7 LOCAL ECONOMIC TRENDS	71
3.8 SYNTHESIS	84
CHAPTER 4: DEMOGRAPHIC MARKET OVERVIEW	89
4.1 INTRODUCTION	89
4.2 MARKET AREA DELINEATION AND POPULATION SIZE.....	89
4.3 RACIAL AND GENDER PROFILE.....	91
4.4 AGE PROFILE	92
4.5 LEVEL OF EDUCATION	93
4.6 EMPLOYMENT STATUS	94
4.7 OCCUPATION PROFILE	95
4.8 ANNUAL HOUSEHOLD INCOME.....	96
4.9 SYNTHESIS	97
CHAPTER 5: QUALITATIVE OVERVIEW OF KLEINFONTEIN	100
5.1 INTRODUCTION	100
5.2 QUALITATIVE REVIEW OF KLEINFONTEIN.....	100
5.3 SYNTHESIS	109
CHAPTER 6: KLEINFONTEIN GROWTH TRENDS AND DEVELOPMENT PROSPECTS	110
6.1 INTRODUCTION	110
6.2 LOCATION THEORY AND BEHAVIOUR	110

6.3	LOCATION DEVELOPMENT ASSESSMENT.....	113
6.4	MARKET POTENTIAL ANALYSIS	114
6.5	SYNTHESIS	121
CHAPTER 7: DEVELOPMENT RECOMMENDATIONS.....		122
7.1	INTRODUCTION	122
7.2	MARKET POTENTIAL ANALYSIS	124

EXECUTIVE SUMMARY

➤ PROJECT BRIEF AND METHODOLOGY

✓ Introduction

Demacon Market Studies were commissioned by **Plan Practice**, to perform in-depth market research to assess the development potential and optimum mix (“Highest and Best Use”) of ancillary facilities for a mixed use development in Kleinfontein, east of Pretoria.

Kleinfontein is an existing settlement which incorporates certain **existing land uses**, including small scale retail, residential, retirement facilities, a caravan park, etc. It is understood that the purpose of the exercise is twofold: *first and foremost* to **formalise existing facilities**; and *secondly*, to plan and provide for **future growth and expansion** in a balanced, harmonious way.

It is our understanding that a comprehensive mixed use market study is required to inform strategic planning and investment decisions regarding the formalisation and future expansion of the Kleinfontein mixed use development east of Pretoria in the Donkerhoek area. It is understood that our assessment should focus, in particular on three project components, including:

- ✓ Residential
- ✓ Localised / Convenience Retail

✓ Methodology

Within the context of the research brief, market research for the **Kleinfontein Mixed Use Development** will be structured in terms of the following main steps.

1. Step 1: Project Inception
2. Step 2: Macro & Micro Market Analysis
3. Step 3: Market Potential assessment and implications
4. Step 4: Development Recommendations.

Step 1: Step 1 entails a refinement of the project brief, timeframe and deliverables. Relevant base data and documents will be collated and site-specific detail acquired from the client.

Step 2: Macro & Micro Market Analysis analysed development trends in terms of key indicators, including economic drivers, detailed demographics, e.g. income & LSM profiling. The assessment included nodal development trends, including anticipated impact of turnkey **medium term interventions**, housing developments, road upgrades, commercial nodes, etc in the larger market area.

The local **Spatial Development Framework** was analysed in terms of its vision for the project area. Trade area based growth trends and residential expansion proposals were factored into a *5 and 10 year market demand forecast*. **The objective** was to analyse the market in the context of regional nodal development trends and to provide strategic input with regard to forecast market growth, nodal expansion potential and growth in optimum consumer demand thresholds.

Step 3: Sector-specific instruments will be applied to estimate current market potential and future growth, as well as take-up rates, taking due cognisance of strategic location and sub-regional economic drivers. Based on the above target market analysis, *residential effective*

demand and take-up / sales rates was forecasted, including the optimum point of market entry and indicative incremental phasing.

Step 4: Market based development recommendations was made with regard to market potential for various project components that form part of the Kleinfontein mixed use development, including residential, retirement facilities and localized convenience retail.

The report was structured in terms of the following chapters:

- ✓ Location Analysis
- ✓ Economic Market Overview
- ✓ Demographic Market Overview
- ✓ Qualitative Overview of Kleinfontein
- ✓ Kleinfontein Growth Trends and Development Prospects
- ✓ Development Recommendations.

➤ QUALITATIVE OVERVIEW OF KLEINFONTEIN

✓ Location

Kleinfontein is a settlement near Pretoria, South Africa that was founded by Afrikaners who want to preserve their culture. It has only recently been developed and has a limited economy. It was founded by descendants of the original Voortrekkers or Boers who seek self-determination in an autonomous Volkstaat. Kleinfontein is located roughly half-way between Pretoria and Bronkhorstspuit. It lies south of the N4 and west of the R515, a few kilometres south of Rayton.

✓ History

Following the Great Trek, Boer pioneers expressed a drive for self determination and independence through the establishment of several Boer Republics during the 19th century. The end of minority apartheid rule in South Africa in 1994 once again left some Afrikaners disillusioned and marginalized by the political changes, and resulted in a proposal for an autonomous Volkstaat.

Two Boer pioneers applied for a loan in 1992 for Kleinfontein farm, 30km south-east of Pretoria, to establish an independent Boer Republic. The first two houses was built and completed in 1996 by residents of Kleinfontein. After this, Kleinfontein expanded at a fast rate, from the original 500ha to almost 860ha today, stretching from the N4 to Boschkop gravel road. It is estimated that approximately 900 Afrikaners is present on Kleinfontein during the day whereas almost 650 of these are permanent residents. Today, Kleinfontein is home to Radio Pretoria Station, several sport grounds, schools, savings and Credit Corporation, community hall, frail care centre, retirement home and a small convenience centre.



✓ Residential Market

Overview

- ✓ The majority of housing consist of brick houses on a separated stand or yard followed by wooden houses and caravans



- ✓ Brick houses therefore range in size from relatively large to small
- ✓ Brick houses are generally well maintained with tidy and well kept yards
- ✓ Dwellings are well serviced with electricity, water and sanitation



Kleinfontein Property Market Prices

The following table provides an overview of the Kleinfontein market activity.

Table 1: Kleinfontein Residential Market Activity, Type, Min and Max Asking Price, Average and Std Deviation, Frequency, November 2011

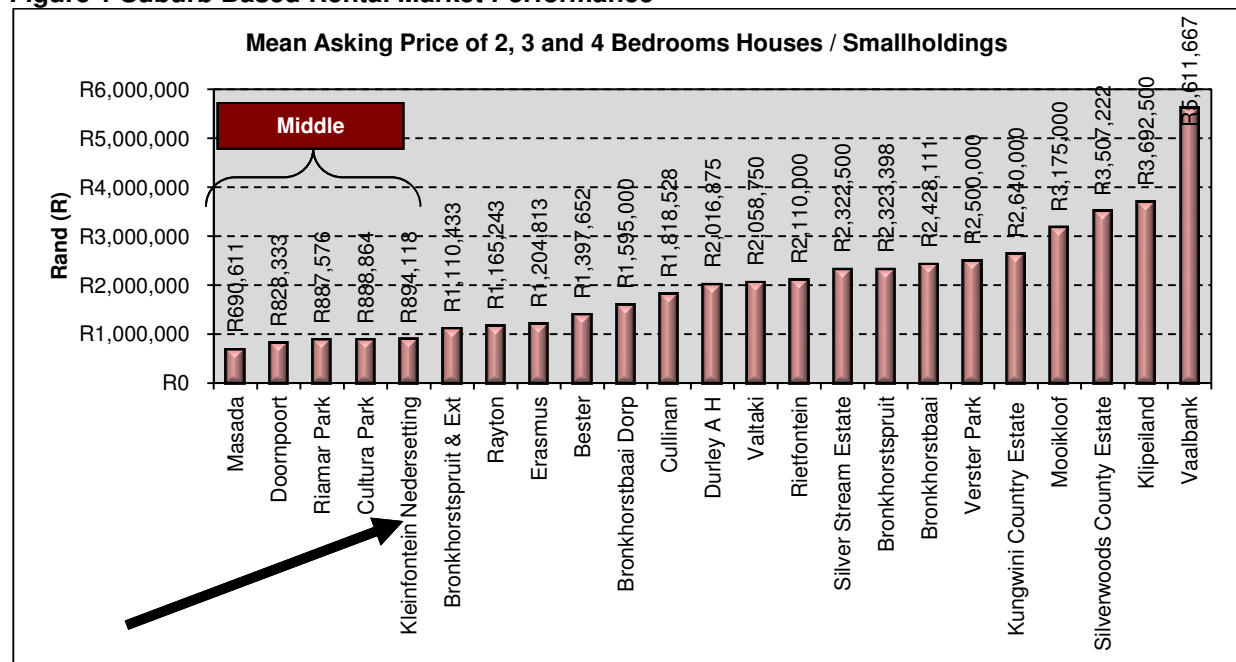
	Min	Max	Average	Std Deviation	Frequency
2 Bedrooms	R500,000	R1,330,000	R784,286	R297,257	7
3 Bedrooms	R700,000	R1,300,000	R967,778	R156,746	9
4 Bedrooms	R1,000,000	R1,000,000	R1,000,000	R0	1
Total					17

Source: Irene Groenwolt Properties Ext, Demacon, 2011

- ✓ The dominant type of properties present within Kleinfontein **includes two, three and four bedroom houses.**
- ✓ Mean property values vary between **R780k for the two bedroom houses, R960k for a three bedroom house and R1m for a four bedroom house.**

Figure 1 reflects the average asking price of 2, 3 and 4 bedroom houses and smallholdings.

Figure 1 Suburb Based Rental Market Performance



Source: Demacon, 2011

- ✓ Figure 1 indicates the prices distribution of asking prices for 2, 3 and four bedroom houses and smallholdings
- ✓ Given the asking price profile of the market area it is anticipated that Kleinfontein is focused more towards the lower-middle spectrum of the market.

Residential Areas

"Kleinfontein Sorgsentrum"
 ✓ Active Aged Persons
 ✓ Partially Constrained & Constrained
 ✓ 26 residents



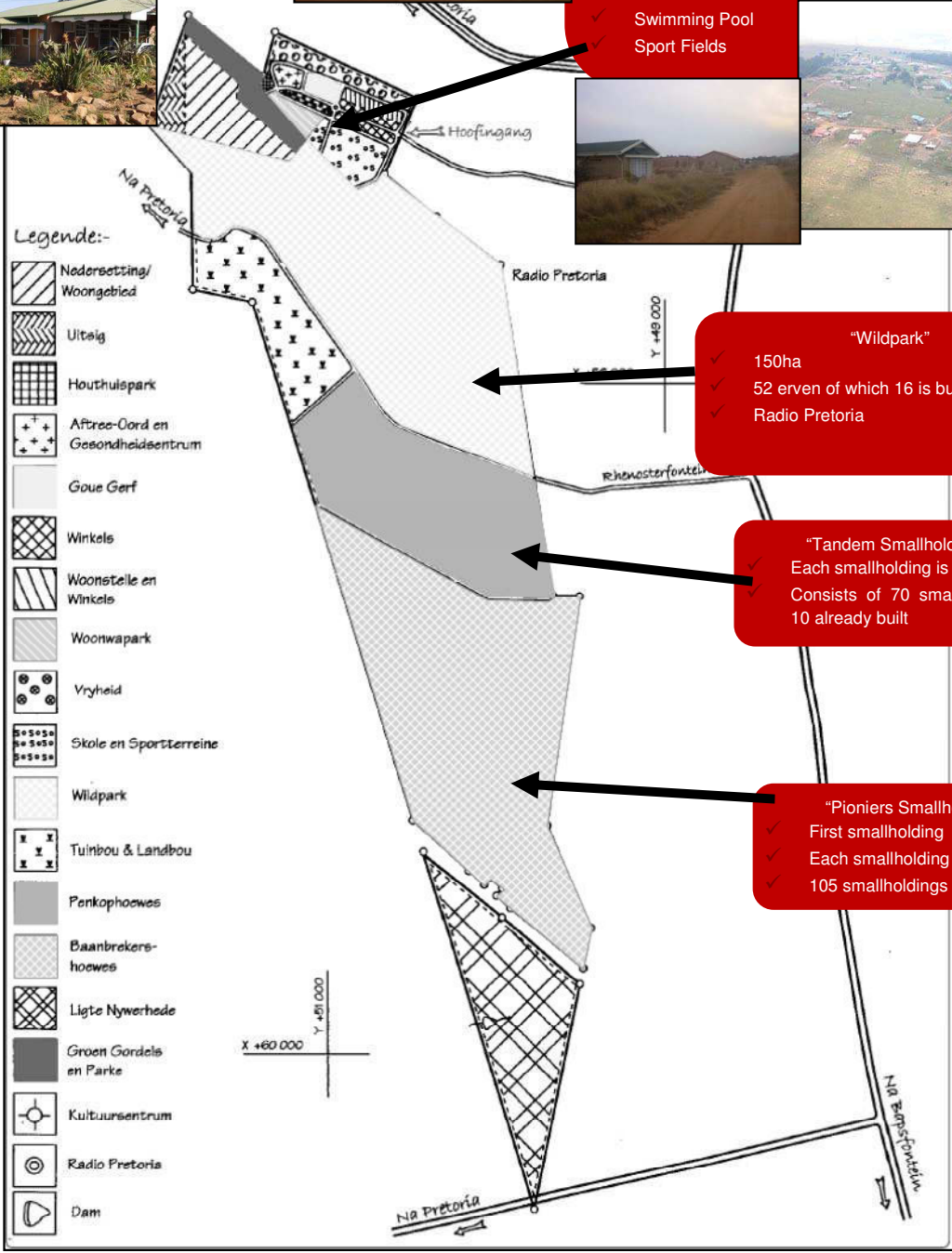
"Nederstelling"
 ✓ 350 erven – 300 built
 ✓ Erven between 600m² - 1 000m²
 ✓ Houthuispark – 300m² - 500m²
 ✓ Dagbreek Woonwapark – economic erven of ± 200m² for a 1/2 bedroom house
 ✓ Community Centre
 ✓ Retirement Village
 ✓ Shopping Complex
 ✓ Library
 ✓ School
 ✓ Swimming Pool
 ✓ Sport Fields



"Wildpark"
 ✓ 150ha
 ✓ 52 erven of which 16 is built
 ✓ Radio Pretoria

"Tandem Smallholdings"
 ✓ Each smallholding is ±1ha
 ✓ Consists of 70 smallholdings – 10 already built

"Pioniers Smallholdings"
 ✓ First smallholding
 ✓ Each smallholding is ±1ha
 ✓ 105 smallholdings – 60 built



✓ **Schools**

- ✓ CVO Kleinfontein is a small private school consisting of 23 students and 6 staff members. It is situated inside the Kleinfontein community.

- ✓ The school receives minimal subsidisation from the government and is therefore dependent on donations from students' parents as well as incessant fund raising projects to generate enough money to keep it alive.
- ✓ This means that funds are rarely available for maintenance and that the image of the school is gradually being degraded.
- ✓ School Phase: Pre-Primary and Primary.



✓ **Businesses**

Built Shops

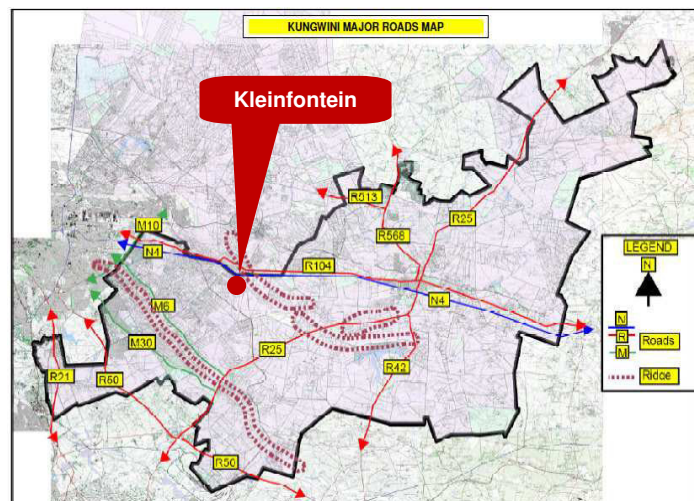
- ✓ There are no formal or listed shopping centres within the settlement
- ✓ Retail/trade is made up of formal trade and brick buildings with a few shops
- ✓ These built shops do not boast national tenants
- ✓ Shops are small and include the following services:

- Kleinfontein Bou Bestuur Bk
- BJC Houtwerke
- Waterbok Gastehuis
- Kleinfontein Communication Services
- Irene Groenewald Eiendomme
- Druknet
- Funeral Services
- Eco BBQ
- Kleinbegin Winkel
- Wipronet
- Die Groente Winkel
- Die washuis
- Energy Tech



✓ **Accessibility and Visibility**

- ✓ From a regional context, Kleinfontein is well connected by road and is within 30 minutes' commuting distance to Olivier Tambo International Airport and Waterkloof International Airport.
- ✓ The N4 national highway (Maputo Corridor) traverses the area running from east to west. This highway passes Bronkhorstspuit in Kungwini, connecting Botswana in the west, passing through the Tshwane Metropolitan Area in Gauteng, Witbank, Middleburg, Belfast and Nelspruit in Mpumalanga and Maputo to the east.
- ✓ The R25 is also an important road linkage transversing the area diagonally from south to north.
- ✓ The significance of these major corridors for **development cannot be ignored as they not only provide good access to the Kungwini area, but also provided "trade lifelines" for goods and services of the area to support the development of the local economy.**
- ✓ The railway line parallel to the highway forms a strong spatial structuring element of the area.




✓ **Kleinfontein Retirement Centre**

Kleinfontein Retirement Village is divided into three care units, namely Kleinfontein Sorgsentrum, Karee Park and Wag-‘n-Bietjie.

✓ **Kleinfontein Sorgsentrum**

Kleinfontein Retirement Centre “Sorgsentrum” caters for the active aged, partially constrained aged and constrained aged persons. Currently, the centre is home 26 residents. Qualified nursing sisters and matrons are in attendance of the elderly. The centre is serviced by a qualified GP from time to time.

Table 2: Kleinfontein Sorgsentrum

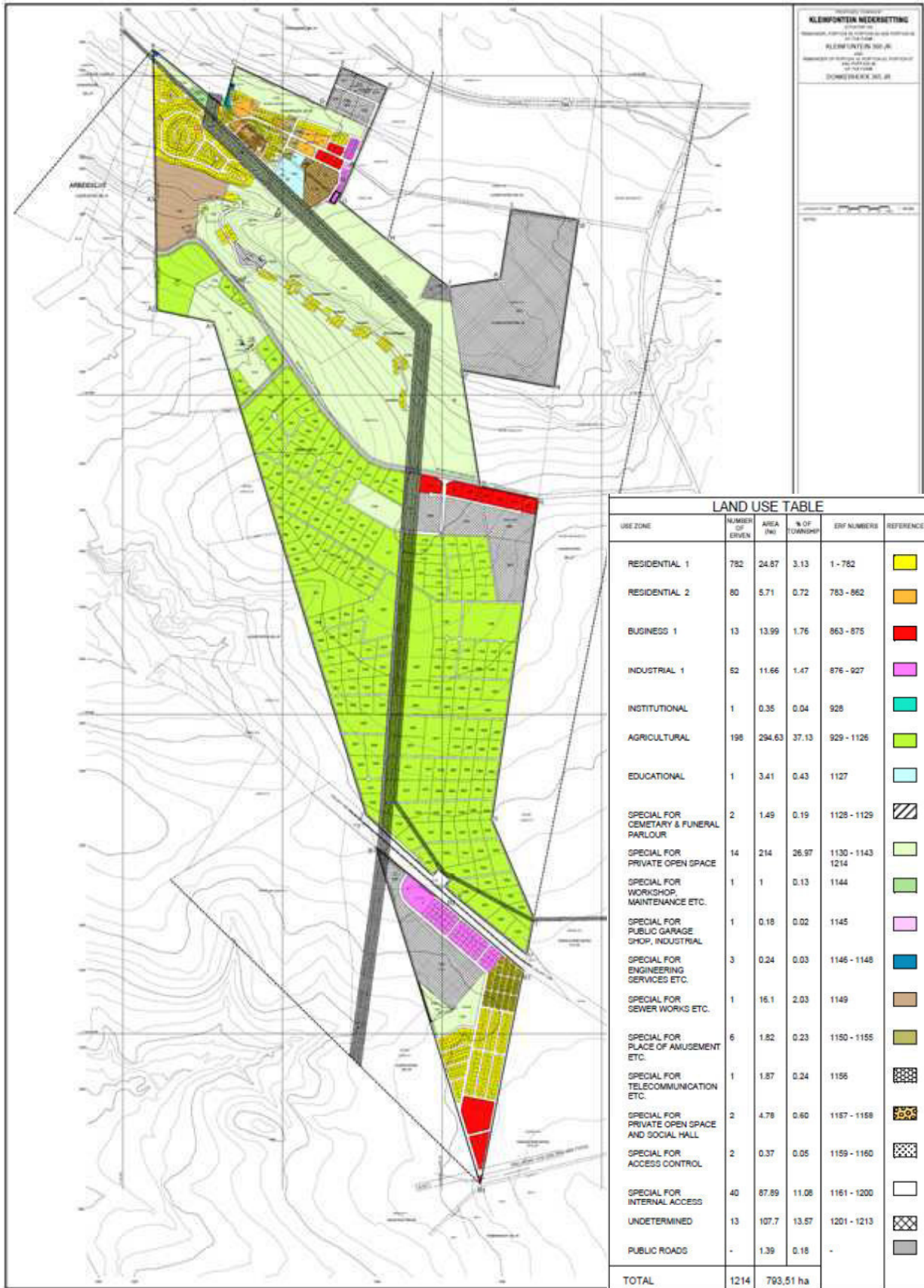
Kleinfontein “Sorgsentrum”	
	<p><u>Accommodation:</u></p> <ul style="list-style-type: none">✓ Once off entry fee of R5 500, not refundable✓ Private room: R6 500.00 pm✓ Shared Room R3 900.00 pm✓ Constrained hall: R3 800.00pm. <p><u>Features:</u></p> <ul style="list-style-type: none">✓ Three meals daily✓ Three tea times daily✓ Group Activities✓ Spacious rooms to decorate with own furniture, bed linen and towels✓ Launderette✓ Church Sundays in Kleinfontein Community Hall✓ Cleaning Services✓ Hairdresser✓ Kombi weekly to nearby suburbs / towns✓ Security 24 hours a day✓ Water and Electricity included in levy.

✓ **Karee Park and Wag-‘n-Bietjie**

Residents are totally independent and able to look after themselves. Should professional nurses be required, the frail care centre will provide services at additional costs.

Potential residents received an interest in Kleinfontein through membership and shares in KBK (Bpk). The agreement between the parties is called a “Use Right”. The legal right to occupy the premises for the duration of their life. After death, the person’s interest is transferred to a pre-approved inheritor, or sold to an approved buyer.

Map 1: Kleinfontein Settlement Plan



➤ **ECONOMIC OVERVIEW – Refer to Chapter 3**

Global national economic trends

- ✓ The South African economy is forecast to grow by a real rate of around 4% per annum in 2011 and 2012, supported by expected real world economic growth of 4,3% this year and 4,5% next year (as forecast by the International Monetary Fund), as well as growth in domestic demand during this period, driven by a further steady improvement in households' financial position.
- ✓ The headline consumer price inflation rate (CPI) is expected to continue rising in the rest of 2011, reaching a level of 6% by year-end. CPI is forecast to average about 5% this year and 6% next year, driven by factors such as rising transport costs, food prices and housing operating costs.
- ✓ Against the background of these economic and inflation expectations, interest rates are projected to remain unchanged in the rest of the year, but to rise by a cumulative 200 basis points during the course of the first seven months of next year, remaining stable thereafter. This will bring prime and variable mortgage rates to a level of 11% by the end of 2012, which will affect consumers' debt repayments, and the cost and affordability of existing debt and further credit, including mortgage finance.

The Residential Property Market

- ✓ The residential property market will continue to reflect conditions in the macro economy and the household sector up to the end of the year and in 2012. Based on trends in home values in the first half of 2011, and prospects for the economy and household finances, nominal price growth in the middle segment of the market is forecast at between 1% and 2% for the full year, rising to about 4% in 2012. In consideration of the outlook for nominal price growth and the projection of consumer price inflation averaging 5% this year and 6% next year, house prices are set to decline in real terms in both 2011 and 2012.
- ✓ Taking cognisance of the state of household finances (income, saving, debt, credit records, etc.), labour market conditions, the level of consumer confidence, which was lower in the first half of the year compared with the corresponding period last year, and the prospect of rising interest rates in 2012 on the back of inflationary pressures in the economy, the year-on-year growth in mortgage finance extended to the household sector is forecast to remain in single digits up to the end of 2011 and into 2012.

The outlook for inflation

- ✓ Inflation is ticking up steadily, with rising food and fuel prices being the main culprits. Core inflation remained rather muted at 3.1% in April 2011, compared to headline inflation of 4.2%. With administered prices, especially electricity, adding substantial pressure, inflation is forecast to approach the 6% mark during Q4 of 2011, and to exceed this upper band in the opening quarter of 2012, before embarking on a modest declining trend.
- ✓ At the November MPC, the Reserve Bank cut significantly its inflation forecasts for 2011 and 2012, and there is very little difference between their set and Absa Capital's forecasts currently.
- ✓ The central bank now expects inflation to average 4.3% in 2011, 4.8% in 2012 and to end their forecast exercise in Q4 2012 at 5.1% and we believe that these new inflation forecasts matter in two ways.

The latest Leading Indicator (a good indicator of near term moves in both the economy as well as the residential mortgage market) data point to appear, that of **September 2011**, indicated a further acceleration, on a month-on-month basis - the value going to a current value of **130.1**

Local Economic Indicators (Kungwini Local Economy)

Ten kinds of economic activity are distinguished and are grouped into the three broad sectors of the economy: the primary sector, the secondary sector, and the tertiary sector. The valuation is at basic prices and the data are provided at constant prices.

The pillars of Kungwini Local economy include: Manufacturing, Finance and Business Services, General Government Services, Trade Sector and Transport and Communication – contributing approximately **85.0%** towards the sub-region economy in 2010.

Table 3: Key Economic Indicators of the Market Area

Variable	Market Characteristics
Size of the local economy (2010)	<ul style="list-style-type: none"> ✓ Kungwini Local Economy contributes 64.6% towards the District
Economic Growth Performance – Time Period 1995 - 2010	<p><u>Kungwini Local Economy</u></p> <ul style="list-style-type: none"> ✓ Growth in the local economy averaged 3.8% per annum since 1995 ✓ Since 2005, the local economy recorded an average growth of 1.9% per annum <p><u>Metsweding District Economy</u></p> <ul style="list-style-type: none"> ✓ Growth in the district economy has averaged 2.2% per annum since 1995 ✓ Since 2005, growth in the district economy was slower – an average growth rate of 1.4% per annum
Manufacturing Sector Growth Performance Time Period 1995 - 2010	<ul style="list-style-type: none"> ✓ The long run average annual growth rate of the Local Economy Manufacturing Sector averaged at 3.3% between 1995 and 2010. The District averaged at a lower rate of 3.0% over the same period. ✓ The Manufacturing sector contributed 16.8% towards the GVA of the district. Kungwini LM contributed 79.0% towards the GVA of district's manufacturing sector and Nokeng tsa Taemane 21.0%. ✓ Average Annual Employment growth – District 0.8% and Kungwini LM 1.0%
Trade Sector Growth Performance Time Period 1995 - 2010	<ul style="list-style-type: none"> ✓ The Local Economy Trade sector contributed 73.5% towards the Trade Sector of the district economy in 2010. ✓ The long run average annual growth rate of the Local Economy Trade Sector averaged at 4.7% between 1995 and 2010. The district averaged at a slightly lower rate of 4.4% over the same period. ✓ Average Annual Employment growth (1995 – 2010) – District 3.5% and Kungwini Local Employment 4.0%. ✓ Dominant contribution vested in the retail trade and wholesale sub-sector (94.0% contribution to the Trade sector's GVA).
Dominant Economic Contributions (2010)	<ul style="list-style-type: none"> ✓ Manufacturing – 26.3% ✓ Finance and Business Services– 21.7% ✓ General Government Services – 16.1% ✓ Trade – 12.7% ✓ Transport and Communication Services – 8.1%.

Primary Sector:

- ✓ The real value added by the primary sector increased at a slightly slower pace in 2010 (0.1%) than in 2009.

- ✓ Growth in 2010 moderated to a still-low average annualised rate of 1.4% following a rate of decrease of no more than 1.0% from 2005. This moderation resulted from a slower rate of increase recorded in the agriculture and mining sector.

Secondary Sector:

- ✓ Growth in the real value added by the secondary sector accelerated to an annualised rate of 11.6% in 2010, following a slight increase of 0.1% from the preceding year.
- ✓ The manufacturing sector contributed to the growth in the secondary sector; as this is the only sector recording growth in 2010 when compared to the previous year.

Tertiary Sector:

- ✓ The tertiary sector represent the largest sector within the local economy, with an average contribution of 12.5% in 2010
- ✓ The Finance and Business Sector represents the largest contributing sub sector – characterised by a contribution of 21.7% in 2010

Economic Growth

- ✓ The long run annual growth rate of the local economy averaged at **3.8% between 1995 and 2010**. The district averaged at a slightly lower rate of 2.2% over the same period.
- ✓ The short run economic growth trend of the local economy average 1.9% from 2005 to 2010, and 1.4% for the district economy over the same period.
- ✓ The stronger year-to-year (2003 – 2008) growth mainly reflected a rebound in the real value added by the secondary sector alongside stronger growth in the real value added by the tertiary sector.

Manufacturing Sector

- ✓ The Manufacturing sector contributed 16.8% towards the GVA of the district. Kungwini LM contributed 79.0% towards the GVA of district's manufacturing sector and Nokeng tsa Taemane 21.0%.
- ✓ The district is characterised by a strong local Manufacturing sector, indicating the relative importance of this sector.
- ✓ Most manufacturing and distribution related companies are located in the industrial areas in close proximity to Bronkhorstspuit – Bronkhorstspuit Light Industrial to the north-west of Bronkhorstspuit Town and Ekandustria.
- ✓ The sector also serve as catalyst for supporting economic activities contributing to economic growth within an area and positive spin-off effects on the whole economy.

Trade Sector

- ✓ The Local Economy Trade sector contributed 73.5% towards the Trade Sector of the district economy in 2010.
- ✓ The long run average annual growth rate of the Local Economy Trade Sector averaged at **4.7% between 1995 and 2010**. The district averaged at a slightly lower rate of 4.4% over the same period.
- ✓ Average Annual Employment growth (1995 – 2010) – District 3.5% and Kungwini Local Employment 4.0%.

Final consumption expenditure

- ✓ **Final consumption expenditure** of the local economy obtained an average annual growth rate of **5.1%** over the time period 1995 – 2010.
- ✓ Growth in real disposable income of households moderated from an annualised rate of 4.7% over the time period 1995 - 2010.

The following section provides a demographic overview with regard to the market area concerned.

➤ **DEMOGRAPHIC OVERVIEW – Refer to Chapter 4**

Understanding demographics is imperative to product development and segmentation, especially with regard to understanding trends in the market place. Demography (the study of age, sex, education, family status, life cycle etc.) is an excellent tool for product developers and marketers. The subject therefore plays a key-role in decision-making regarding demand for commercial and residential products.

Table 4: Kleinfontein Indicators, 2011

Variable	Primary Market Area
Socio-Economic Indicators	
Number of people	✓ 980 people
Number of households	✓ 380 households
Household Size	✓ 2.6 people/ household
Racial Distribution	✓ 100% - Whites
Gender Profile	<ul style="list-style-type: none"> ✓ 51.3% - Male ✓ 48.7% - Female
Age profile	<ul style="list-style-type: none"> ✓ Large mature component (78.2%), 16.0% of the market population is between the ages 36 and 50 years and 62.2% is persons between 50 to 81+ years of age ✓ Young economically active age group of between 15 to 35 years of age (11.5%) which is supported by a smaller segment of young and upcoming consumers aged between 0 to 14 years of age (10.3%)
Highest level of education	<ul style="list-style-type: none"> ✓ 84.0% of Kleinfontein population has at least Grade 12 (42.0%) or obtained higher educational levels (42.0%) ✓ A share of 8.0% of the market population aged 20 years and older has some level of secondary education. ✓ 55.4% of household members in Kleinfontein attend pre-primary, primary and secondary schools.
Level of employment	<ul style="list-style-type: none"> ✓ 47.9% of Kleinfontein population are pensioners / retired ✓ 32.4% is employed in permanent positions ✓ 11.3% is employed in temporary jobs ✓ 8.5% are classified as contract workers. ✓ Kleinfontein is characterised by a large segment of pensioners living of monthly pension income. The presence of a large pensioner segment serves as indication lower monthly disposable income available for a specific household. It is anticipated that this could impact on the average monthly household income of Kleinfontein and the qualitative demand for commercial and residential products and services.
Occupation profile	✓ The largest proportion of Kleinfontein population is employed in finance and business and community, social

Variable	Primary Market Area
	and personal services – 27.5% respectively. ✓ Manufacturing (15.0%) ✓ Wholesale and retail trade (7.5%) ✓ Construction (7.5%) ✓ Utilities (7.5%) ✓ Mining (5.0%)
Weighted Average household income distribution (2011)	✓ The largest segment of households within the market area (61.1%) earns an average household income below R153 524. ✓ Evident from above, the market area is split between low to lower-middle income earners and middle income earners ✓ This income distribution is typically evident of a large segment of pensioners that has less average annual disposable income ✓ The income distribution evidently reflect lower demand thresholds that can be met by households ✓ The weighted average annual household income of Kleinfontein is approximately R125 080 per annum, which translates into R10 423 per month (2011 values).

Source: Demacon, 2011

Kleinfontein market profile reveals the following pertinent characteristics:

- ✓ An estimated **980 people or 380 households reside within the Kleinfontein area** in 2011. The average household size amounts to approximately 2.6 members per household.
- ✓ The population is characterised by an anomalous relationship between skills levels and income: extremely high skills levels, coupled with a lower-middle income profile – a typical sign of the socio-economic effects in the aftermath of a change in political regime.
- ✓ Political reform led to a decline in white participation in the public sector labour market. These reforms resulted in the loss of skilled white workers.
- ✓ Older white employees (those 50 and over) were offered “voluntary retrenchment” packages that usually included pension earned to date with some “sweetener” included to expedite the process. This created space for the democratic state to recruit a labour force with which it shared a joint vision of national transformation. This was imperative, given that the democratic state inherited a technocratic labour force with which it shared no common ideology or vision of national transformation. However, as with any (pension) policy terminated prematurely, these packages may have appeared appealing at the time, but were not sufficient for longer term retirement purposes and many of these ‘retirees’ had to attempt to re-enter the job market – however, with a vastly changing new set of rules. Quite a challenge at retirement age.
- ✓ From an economic point of view, these changes in the socio-political landscape also translated into discernible economic and spatial impacts – including the displacement of certain households with previously high levels of disposable income to more affordable locations where real estate values and municipal service charges are lower and more aligned with their adjusted lower disposable income levels.
- ✓ Situated just above the government minimum household income levels to qualify for subsidies / government assistance (R3 500 per household per month for fully subsidised houses and R3500 – R7500 for financed linked product – such as provided for by government in the Cosmo City Development). This situation leaves these households in a peculiar position – very similar to what is presently termed the “gap market” (where household incomes range from R7 500 – R15 000 per household per month).
- ✓ Although decentralized the Kleinfontein development can therefore not be viewed as “high-income” estate by any means.

➤ **LOCATION ANALYSIS– Refer to Chapter 2**

Summary of Characteristics of Metsweding District:

- ✓ District characterised by three dominant urban areas – Bronkhorstspuit, Cullinan and Rayton
- ✓ 80% of land focused towards agricultural activities – emphasis on areas to the north and south
- ✓ Relatively concentrated economic land use base
- ✓ The bulk of the major business activities occur in Silver Lakes, Bronkhorstspuit town, Roodeplaat, Cullinan and to a limited extent in Rayton
- ✓ Tourism opportunities vested in the development of the Dinokeng Project – Roodeplaat Dam as well as Bronkhorstspuit Dam
- ✓ Dominant Industrial Node vested in Ekandustria
- ✓ Demand for high and low income residential developments
- ✓ High density development zones vested within the district boundaries include; Bronkhorstspuit and Bronkhorstspuit Dam, Ekandustria, Cullinan/Refilwe, Rayton and Steve Bikoville
- ✓ External pressures from Tshwane and Ekurhuleni Borders – High-income and low-income residential developments, rural residential development and industrial development pressures.

Development Implications for Kleinfontein:

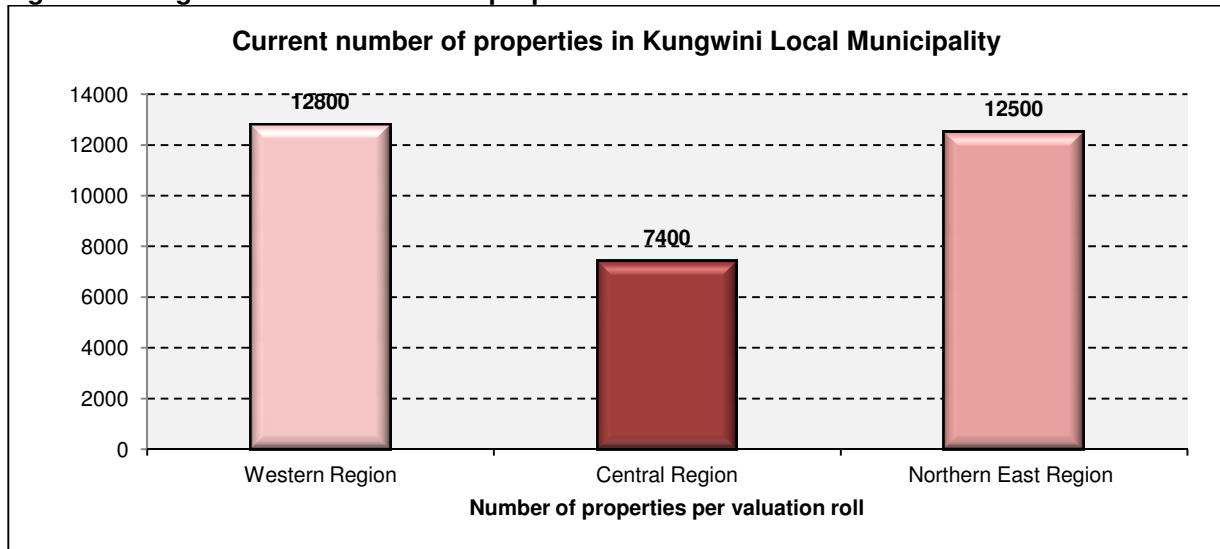
- ✓ From the spatial analysis it is evident that Kleinfontein falls within the West Region of Kungwini Local Municipal area. Population growth over the 2001 to 2009 period has resulted in the high growth of 52% for the West Region. The very high population growth in the West Region is due to the new residential developments occurring adjacent to the Tshwane and Ekurhuleni municipal boundaries.
- ✓ The proximity of the “economic hub” of Gauteng to the west of Kungwini is resulting in the strong growth of the western part of Kungwini. The Kungwini West region has been identified as a development concentration area and should be regarded as a residential nodal area. Very low levels of disposable income is evident in this sub-region and make sustainable development difficult. The main economic sectors currently contributing to local GDP are manufacturing, services, finance and trade.
- ✓ Business/Commercial activities within the area can be categorised as very limited. The bulk of the major business activities happen in Silver Lakes, Bronkhorstspuit town, Roodeplaat, Cullinan and to a limited extent in Rayton. Due to increased development pressure on the periphery of these towns, there is great demand for the development of new centres in these peripheries. These centres have the ability of becoming major centres and thus competing with the traditional urban centres.
- ✓ In conclusion, the district is divided into two distinct areas - the areas south of the N4, Bronkhorstspuit, Zithobeni, Ekandustria, Ekangala and rural areas to the North-East are predominantly characterised by higher LSM profiles, compared to the remainder of areas north of the N4. Given the location of Kleinfontein the area reflects moderate to high living standards. It is anticipated that this in conjunction with moderate population densities will result in moderate to high demand densities, resulting in high development potential within this area.

Building Plan Data

Overall it is evident that approximately **1 045 residential building plans are passed per annum within the Kungwini Local Municipal Area**, resulting in the **construction** of approximately **907 residential units** (excluding government subsidised housing). The amount of non-residential floor space approved and built is also indicative of low levels of commercial development pressure within the market area.

Kleinfontein falls within the **West Region of Kungwini Local Municipal** area. Population growth over the 2001 to 2009 period has resulted in the high growth of 52% for the West Region. The very **high population growth** in the West Region is due to the **new residential developments** occurring adjacent to the Tshwane and Ekurhuleni municipal boundaries. The Kungwini West region has been identified as a development concentration area and should be regarded as a **residential nodal area**. The Western Region of Kungwini Local Municipality has **high growth potential** due to its proximity to Tshwane and its access to services. The up-market western suburbs of Silver Lakes and Mooikloof play a **major role in the local economy of Kungwini (now part of Tshwane)**.

Figure 2: Kungwini current number of properties



Source: Demacon Ex. Kungwini Valuation Roll 2010

Table 5: Kleinfontein Location Assessment Findings

Land Use	Score
Residential	75.2%
Retail	74.3%
Light Industrial	68.3%
Offices	66.3%
Private Medical Centre	61.2%
Private School	60.1%

Note: 80%+ indicates an exceptional site rating; a site rating of 70 – 80% is high and indicates that most important fundamentals for successful development are in place; a rating of 60 – 70% indicates some critical factors may be lacking but could possibly be addressed; projects with a sub 60% rating are not recommended for consideration.

Overall, it is evident that the most important fundamentals are in place for successful residential and retail development. Some critical factors may be lacking for successful development of offices, medical and private school uses. The emphasis should be on low-key facilities that cater to the needs of the local population.

These ratings seem very favourable to development in Kleinfontein. However, initial indicators and private sector investment prospects will be framed by local market size. Given the benchmark of 100 000 people within a 10km radius, and in the case of Kleinfontein only 980 people, it is anticipated that private sector investment potential will be extremely limited.

➤ MARKET POTENTIAL ANALYSIS

Social facilities

Given the small population of Kleinfontein, demand for social facilities will be limited. Table 6 provides an overview of the social facility demand. It is evident that social facilities will not be sustainable within Kleinfontein.

Table 6: Social Facility Market Gap

	Parameter – Population per facility	Minimum	Maximum
Crèche	5000	0.20	0.00
Primary School	5000	0.20	0.10
Secondary School	6600	0.15	0.15
Clinic	5000	0.20	0.04
Day-Hospital	10000	0.10	0.05
Community Hospital	80000	0.01	0.02
Library	10000	0.10	0.00
Community Centre	10000	0.10	0.05
Sports Stadium	50000	0.02	0.06
Post Office	11000	0.09	0.00
Police Station	25000	0.04	0.01
Fire Station	60000	0.02	0.02
Sport Fields	7700	0.13	0.08
Public Open Space	1000	0.99	0.05

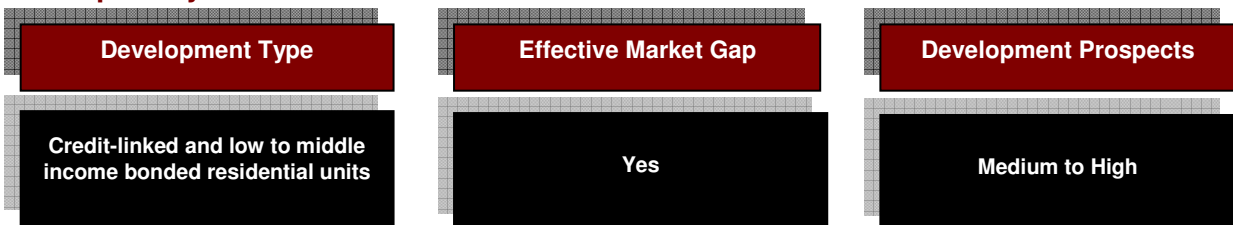
Note: Parameter reflects the number of people required to support development of a specific facility

Source: Demacon, 2011

Evidently, the Kleinfontein development with its further expansion potential does not warrant the imposing of conditions of social facility supply as the population threshold does not warrant sizable investment in this respect.

Residential

✓ **Gap Analysis**



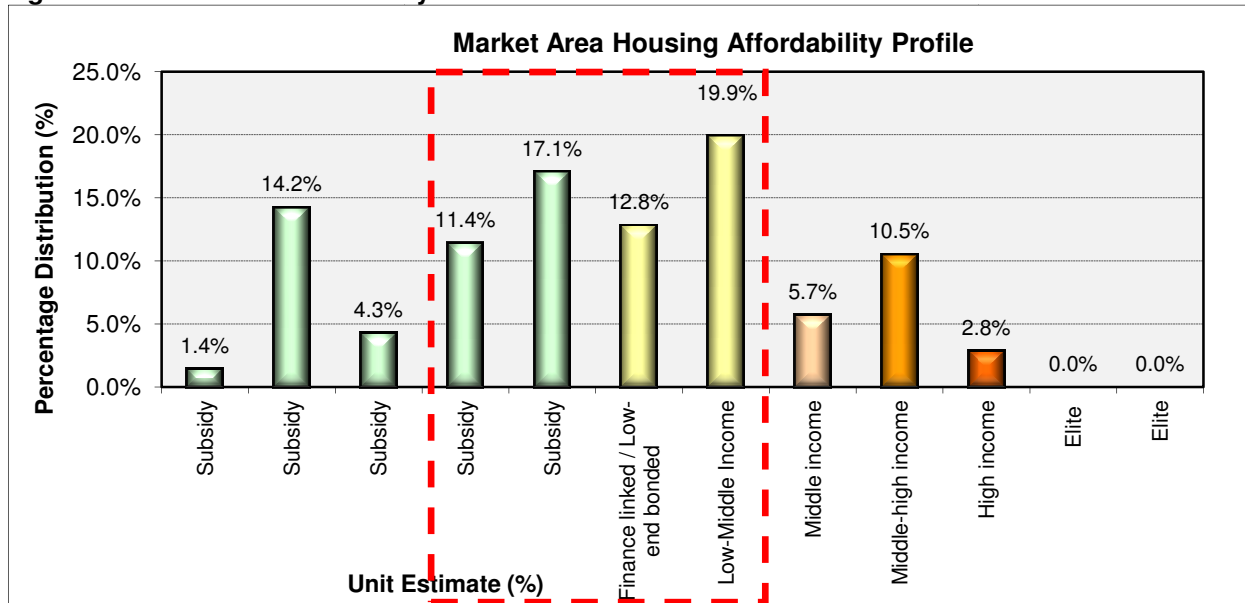
✓ **Residential Market Development Potential**

Table 7: Residential Affordability Profile

Income Midpoint 2011 (R)	House Price (Midpoint)	Distribution	Classification
R 0	R 0	48.3%	Freestanding low cost home
R 3,072	R 9,469		Freestanding low cost home
R 9,217	R 28,408		Freestanding low cost home
R 18,434	R 56,815		Freestanding low cost home
R 36,867	R 113,628		Freestanding low cost home
R 73,734	R 227,254	12.8%	Gap & Entry level Economic Freestanding / Group
R 147,466	R 454,506	19.9%	Low-Middle Income
R 294,932	R 909,009	5.7%	Middle Income
R 589,864	R 1,818,016	10.5%	Middle-high income
R 1,179,727	R 3,636,031	2.8%	High income
R 2,359,452	R 7,272,060	0.0%	Elite
R 3,173,074	R 9,779,720		Gap & Entry level Economic Freestanding / Group

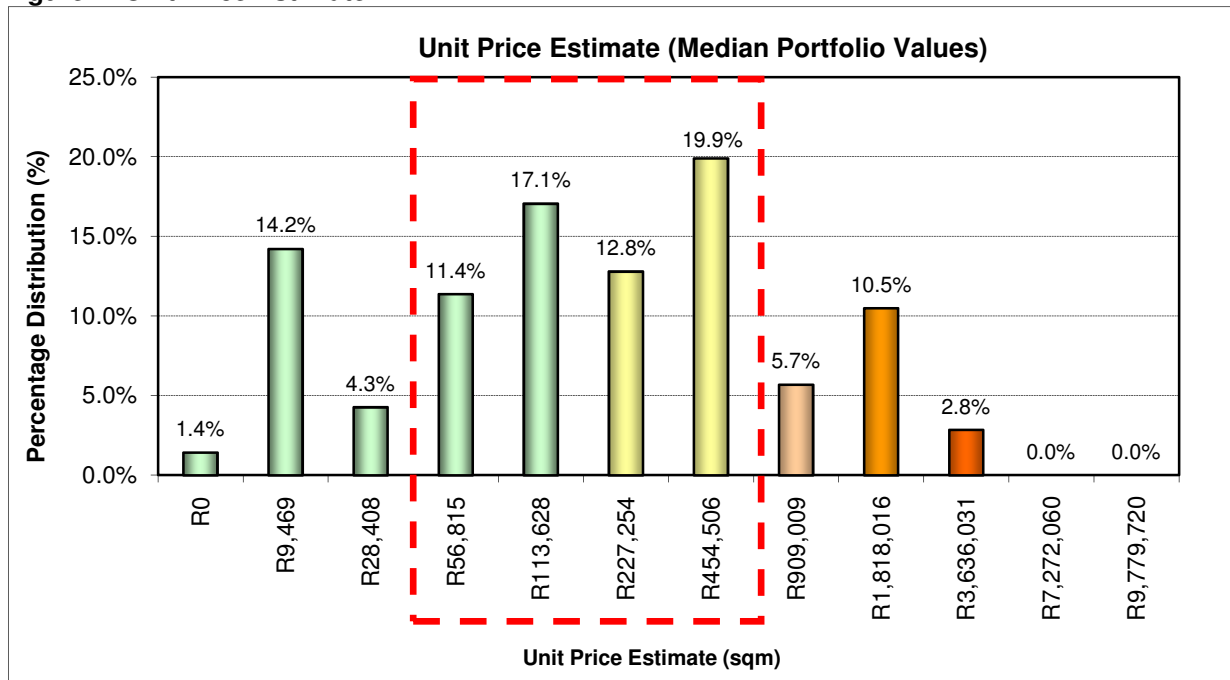
Source: Demacon, 2011

Figure 3: Residential Affordability Profile



Source: Demacon, 2011

Figure 4: Unit Price Estimate



Source: Demacon, 2011

✓ **Project Size and Anticipated Take-Up**

Table 8 indicates the current market performance and the market share that the proposed project could attract.

Table 8: Summary of Market Recommendations

TOTAL MARKET			
A	Additional HH 2011 to 2016		285
B	Annualised Market growth (full housing spectrum)		48
C	Credit-linked and Bonded Segment		51.7%
D	Credit-linked and Bonded Segment take-up per annum		25
E	Annual secondary market contribution (units / annum)	Min	1

F		Max	1
G	Total annual new Credit-linked and Bonded Segment	Min	25
H		Max	25
PROJECT SPECIFIC			
I	Project Credit-linked and Bonded Segment Units		744
J	Forecast market share of total market sales	Min	100%
K		Max	100%
L		Min	25
M	Project forecast total annual take-up rate (units / annum)	Max	25
N	Years to 80% take-up (Credit-linked and Bonded Segment units)	Min	29.4
O		Max	29.6
P		Avg	29.5

Explanatory Notes:

A = increase in demand for new rental units, 2011 – 2016

B = Annualised market growth, i.e. of A/5

D = B x C

E & F = Annual secondary market contribution (i.e. the contribution made by re-sales in the target affordability income brackets)

G & H = Annual new credit-linked and bonded demand; D + E and D + F

I = Project credit-linked and bonded units

J & K = assumed market share of market area

L = G x J

M = H x K

N = I / L

O = I / M

- ✓ The modelling portrays demand and take-up based on market growth trends.
- ✓ Table 6.3 shows two sections, 1) total market and 2) project specific. Between 2011 and 2016 an estimated 285 new households will seek accommodation in the target geographic market area, resulting in an annual growth in demand of approximately 48 units per annum (across the full housing spectrum).
- ✓ Under present market conditions, the credit-linked and bonded segment (51.7%) will yield a take-up rate of 25 units per annum.
- ✓ Given a take-up rate of 10 years, it is estimated that 744 credit-linked and bonded units could be absorbed within Kleinfontein settlement – emphasis on long-term take-up prospects.

Phasing and Composition

- ✓ It is recommended that the project should be developed in phases. The first phase should focus on the first ten years – 200 units
- ✓ Top Structures: From 40m²
- ✓ Stand Sizes: From 150m² to 400m² - can also include a number of larger stands
- ✓ Value: Priced from R220K to R900K.

Retail Market Development Potential

✓ **Gap Analysis**

Development Type	Effective Market Gap	Development Prospects
Convenience Retail	Yes	Medium to High

✓ **Recommendations**

Based on the demand modelling results, the following table indicates the recommended retail options.

Table 9: Recommended centre options

	Community Centre (Rand / sqm)
Market size (2011) – annual consumer retail spend	R 54,205,171
Optimum retail size (m² GLA) – including banking & services	1 723m²
Annual sales potential	R35,214,072
Employment opportunities (on site)	57
Capital investment	R13,097,143
Parking bays required	69
Parking infrastructure & landscaping cost	R1,827,810

- ✓ It is recommended that the proposed centre should represent a convenience type centre of approximately 1 723m² GLA.
- ✓ The centre could have an annual sales potential of R37.2 million and could create ±57 permanent on-site jobs.
- ✓ It will represent a convenience type retail centre consisting of 5 to 25 shops
- ✓ Main tenants could include a supermarket and a few convenience stores
- ✓ Ample paved parking should be provided at a ratio of 4 bays per 100m² retail GLA.
- ✓ Performance will be dependent on, *inter alia*, appropriate tenant composition.

Office Market Development Potential

✓ **Gap Analysis**

Development Type	Effective Market Gap	Development Prospects
Small Office Component	Yes	Very Low

Table 10: Office Floor Space Demand (Kleinfontein Potential) - m² GLA (constant values)

Cumulative Additional Space Demand	Up to 2017	Up to 2022	Up to 2027
Finance & Insurance (sqm GLA)	5,844	12,636	18,773
Business services (sqm GLA)	58,235	125,524	187,794
TOTAL: Kungwini	64,079	138,160	206,567
Project Market Share (average development potential)	961	2,072	3,099

Source: Demacon Office Space Demand Model, 2011

Table 11: Recommended Size

Recommended Sizes	Rand per annum / m ²
Size of development (sqm) (up to 2017)	961m ²
Office Capital investment (2011 NPV)	R8,4 million
Employment opportunities	48
Parking bays required	38
Parking infrastructure & landscaping cost (2011 NPV)	R3,5 million
Point of Market Entry	2012 / 2013

Source: Demacon Office Space Demand Model, 2011

✓ **Recommendations:**

- ✓ Market demand for office floor space as part of the Kleinfontein settlement node increases cumulatively from **961m²GLA in 2017 to 2 072m²GLA in 2022.**

- ✓ It is recommended that the settlement should accommodate an office component of approximately **1 000m²GLA – 2 000m² GLA**, with point of market entry at approximately 2016/2017.
- ✓ This should represent a low-key office development (low rise office development) focused on accommodating small office functions predominantly servicing the community itself – example: professional services, business centre, estate agency, medical practitioners etc.
- ✓ This could be developed adjacent to the proposed retail centre.

Light Industrial Market Development Potential

✓ **Gap Analysis**

Development Type	Effective Market Gap	Development Prospects
Light Industrial, storage and warehousing	Yes	Medium

Table 12: Industrial Space Demand (Kleinfontein Potential) - m² GLA (constant values)

Cumulative Additional Space Demand	Up to 2017	Up to 2022	Up to 2027
Total Manufacturing (Hectares)	3.55	10.57	16.91
Total Warehousing (Hectares)	5.37	16.78	27.72
TOTAL: Kungwini	8.92	27.35	44.64
Project Market Share (average development potential)	0.67	2.05	3.35

Source: Demacon Office Space Demand Model, 2011

Table 13: Recommended Size

Recommended Sizes	Rand per annum / m²
Size of development (sqm) (up to 2017)	10,257m² / 2.05ha
Industrial Capital investment (2011 NPV)	R46,1 million
Employment opportunities	293
Parking bays required	205
Parking infrastructure & landscaping cost (2011 NPV)	R18,9 million
Point of Market Entry	2017

Source: Demacon Light Industrial Space Demand Model, 2011

✓ **Recommendations:**

- ✓ Market demand for light industrial floor space as part of the Kleinfontein settlement node increases cumulatively from **0.67ha in 2017 to 2.05ha in 2022**
- ✓ It is recommended that the settlement should accommodate a light industrial component of approximately **10 257m²GLA/2.05ha**, with point of market entry at approximately 2016/2017.
- ✓ It should represent a combination of light industrial floor space, storage and warehousing opportunities.

School Market Development Potential

✓ **Gap Analysis**

Development Type	Effective Market Gap	Development Prospects
School	Yes	Medium

Table 14: School demand

Cumulative Additional Space Demand	2016	Up to 2021	Up to 2026
Ages 5 - 9	42	74	130
Ages 10 - 14	59	103	182
Ages 15 - 19	55	97	170
Project Market Share (Number of Pupils)	156	274	483

Source: Demacon School Demand Model, 2011

✓ **Recommendations:**

- ✓ It can be concluded that there is a demand for an additional school in Kleinfontein – average development potential reflect a school of 156 children to be accommodated in 2016
- ✓ It is recommended that a secondary phase be included as part of the development. The secondary phase could make provision for selected specialist services (for instance a specialist sport academy).

Private Medical Facility

✓ **Gap Analysis**

Development Type	Effective Market Gap	Development Prospects
Day Clinic	Yes	Medium

✓ **Recommendations:**

Table 15: Medical Market Potential Assessment

MARKET POTENTIAL ASSESSMENT			
MARKET DEMAND (LSM 6 - 10+)			
PRIMARY DEMAND	2011	2016	2021
2011 Medically insured population (people)	980	1,724	3,035
Additional units per annum		149	262
Population growth rate (% / annum - compound growth)	12%	12%	12%
beds / 1000 population medically insured (private beds) - LSM 6-10+	6.8	6.8	6.8
Private beds in demand (LSM 6-10+)	7	12	21
TOTAL MARKET DEMAND			
Number of beds (private beds)	7	12	21
MARKET POTENTIAL			
Net effective demand (residual market capacity - additional beds)	7	12	21
Market share (% market share of total beds for facility)	60%	60%	60%
Market potential (total number of viable beds for facility)	4	7	12
Project specific additional area requirement (sqm hospital floor space)	300	528	929

From the findings it is recommended that a **day clinic** be developed with a capacity of approximately **7 beds (2016)** and provide various levels of care as well as a series of services.

Development Considerations:

Independent Consulting Rooms:

- ✓ The facility could be part of the day clinic and could include one or more independent practitioners to see ambulatory patients for consultation, examination, investigation and treatment.
- ✓ Specialist consulting rooms – one or more professionals register as medical practitioners and who are registered as specialists deliver health services
- ✓ Registered practitioner consulting rooms – where one or more professionals registered in any of the allied health professions deliver health services

Level of Care:

- ✓ **Day Care:** Treatment, observation or assessment that requires an extended stay, usually beyond the treatment or consultation as an outpatient, but less than 1 day. Day care patients do not get counted in midnight bed count.

Frail Care Facility:

- ✓ Two, three and four bedded wards offering residents full 24 hour nursing care with all daily activities. A few single rooms offering resident more privacy.
- ✓ Caring matrons should be on duty each day to attend to the well being of each resident. Outings and entertainment could also be arranged. Temporary care should be available for residents and for non-residents wishing to recuperate or rehabilitate after an illness or surgery.
- ✓ 24 Hour nursing care facility with experienced nursing staff.
- ✓ **Features to be provided:**
 - Recreation centre
 - Library
 - Hairdresser
 - Tranquil gardens for residents to relax in
 - All meals and laundry provided
 - Podiatrist and Physiotherapist visits
 - Cozy lounges for residents to receive their visitors
 - Weekly entertainment arranged.

Land budget

Table 17 illustrates the spatial recommendations for economic uses that could be included as part of the development.

Table 17: Land Budget

Land use	Size	Net demand up to 2016	Surplus buffer (20 - 30%)	Roads, etc (20%)
Economic Uses				
Residential	744 units	18.60	22.32	27.9
Retail	1,723	0.52	0.62	0.8
Offices	2,072	0.35	0.41	0.5
Industrial	10,257	2.05	2.46	3.1
Day Clinic	528	0.09	0.11	0.1
School	600	0.60	0.72	0.9
Hectare Take-up	15,180	22.20	26.64	33.3

Source: Demacon, 2011

In order to accommodate the economic uses a total of 33.3 ha will be required. Depending on residential density the proposed expansion will require a net area of at least 30ha – 35 ha.

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

Chapter one provides an introduction and concise roadmap of *the Kleinfontein Mixed Use Development*. The chapter also provides concise background to the project, a study area description as well as a report outline.

1.2 PROJECT BRIEF AND METHODOLOGY

Demacon Market Studies were commissioned by **Plan Practice**, to perform in-depth market research to assess the development potential and optimum mix (“Highest and Best Use”) of ancillary facilities for a mixed use development in Kleinfontein, east of Pretoria.

Kleinfontein is an existing settlement which incorporates certain **existing land uses**, including small scale retail, residential, retirement facilities, a caravan park, etc. It is understood that the purpose of the exercise is twofold: *first and foremost* to **formalise existing facilities**; and *secondly*, to plan and provide for **future growth and expansion** in a balanced, harmonious way.

It is our understanding that a comprehensive mixed use market study is required to inform strategic planning and investment decisions regarding the formalisation and future expansion of the Kleinfontein mixed use development east of Pretoria in the Donkerhoek area. It is understood that our assessment should focus, in particular on three project components.

✓ Methodology

Within the context of the research brief, market research for the **Kleinfontein Mixed Use Development** will be structured in terms of the following main steps.

- ✓ Step 1: Project Inception
- ✓ Step 2: Macro & Micro Market Analysis
- ✓ Step 3: Market Potential assessment and implications
- ✓ Step 4: Development Recommendations.

Step 1: Step 1 entails a refinement of the project brief, timeframe and deliverables. Relevant base data and documents will be collated and site-specific detail acquired from the client.

Step 2: Macro & Micro Market Analysis analysed development trends in terms of key indicators, including economic drivers, detailed demographics, e.g. income & LSM profiling. The assessment included nodal development trends, including anticipated impact of turnkey **medium term interventions**, housing developments, road upgrades, commercial nodes, etc in the larger market area.

The local **Spatial Development Framework** was analysed in terms of its vision for the project area. Trade area based growth trends and residential expansion proposals were factored into a *5 and 10 year market demand forecast*. **The objective** was to analyse the market in the context of regional nodal development trends and to provide strategic input with regard to forecast market growth, nodal expansion potential and growth in optimum consumer demand thresholds.

Step 3: Sector-specific instruments will be applied to estimate current market potential and future growth, as well as take-up rates, taking due cognisance of strategic location and sub-regional economic drivers. Based on the above target market analysis, *residential effective*

demand and take-up / sales rates was forecasted, including the optimum point of market entry and indicative incremental phasing.

Step 4: Market based development recommendations was made with regard to market potential for various project components that form part of the Kleinfontein mixed use development, including residential, retirement facilities and localized convenience retail.

In the context of the concise project brief and subsequent discussion, a market study is required to provide market based data and recommendations in terms of, *inter alia*:

- ✓ Demographic status quo and trends of Kleinfontein, including number of households, affordability profiles, etc.
- ✓ Economic status quo and trends, including main economic drivers in the region
- ✓ Location analysis, including proximity to amenities
- ✓ SDF / Urban Design Framework Alignment
- ✓ Catalytic effect of new projects in the larger market area
- ✓ Market activity and growth, including residential activity, sales and pricing analysis (current values, i.e. most recent market activity)
- ✓ Forecast take-up rates
- ✓ Extrapolated market profile, i.e. future resident population
- ✓ Corresponding product offer and type
- ✓ Timing / phased implementation and optimum point of market entry
- ✓ Future demand thresholds
- ✓ Market potential assessment (including 5 and 10 year growth forecast)
- ✓ Recommendations, including optimum project mix and detailed recommendations.

Demacon's approach is purely market based and we will apply our extensive involvement as well as recent research and market intelligence on the subject matter to complement the market study.

1.3 KLEINFONTEIN OVERVIEW

Following the Great Trek, Boer pioneers expressed a drive for self determination and independence through the establishment of several Boer Republics during the 19th century. Two Boer pioneers applied for a loan in 1992 for Kleinfontein farm, 30km south-east of Pretoria, to establish an independent Boer Republic. The first two houses was built and completed in 1996 by residents of Kleinfontein. After this, Kleinfontein expanded at a fast rate, from the original 500ha to almost 860ha today, stretching from the N4 to Boschkop gravel road. It is estimated that approximately 900 Afrikaners is present on Kleinfontein during the day whereas almost 650 of these are permanent residents.

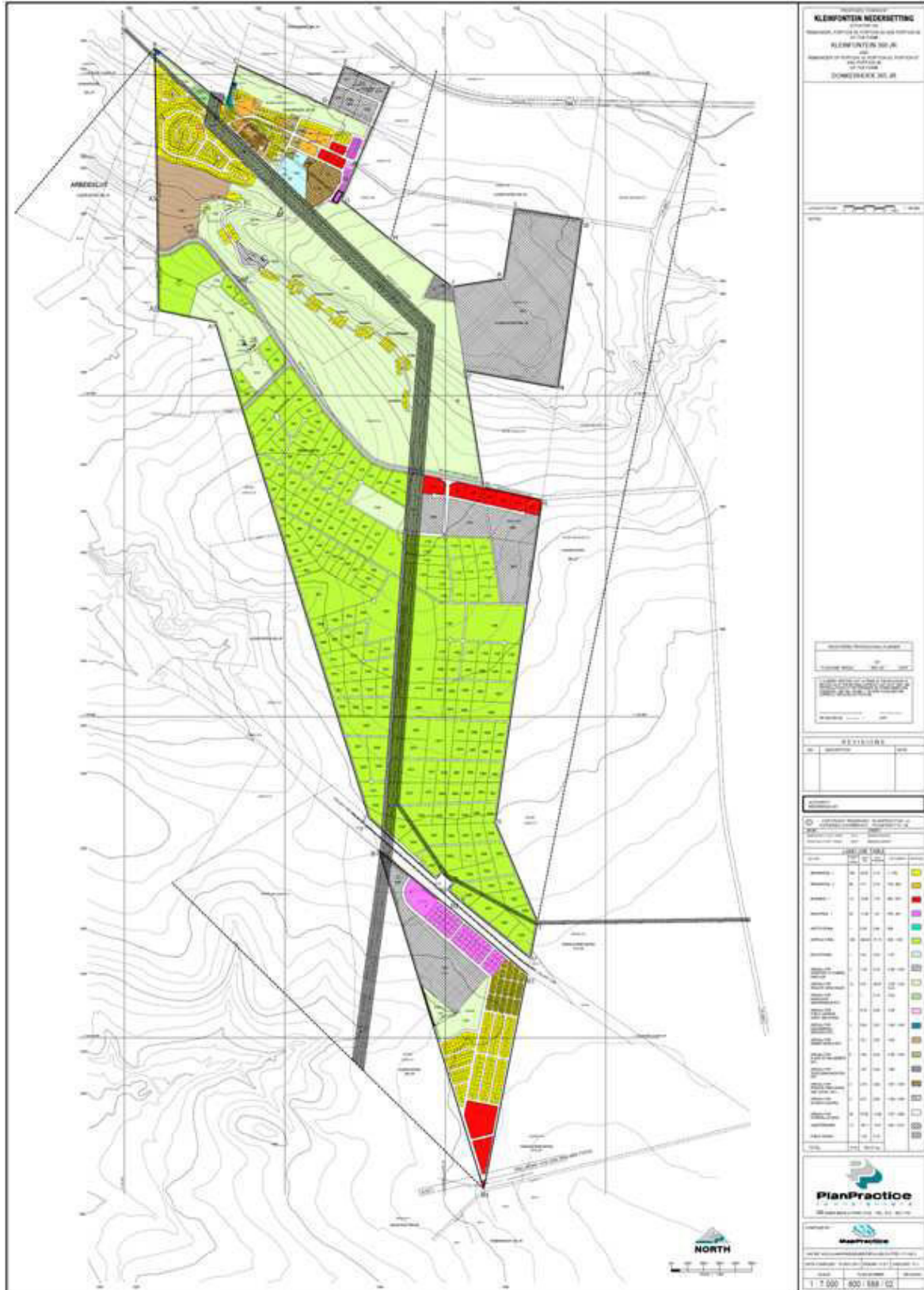
Kleinfontein has the following pertinent characteristics:

- ✓ Dispersed settlement with low population densities
- ✓ Moderate living standard levels underlined by moderately low demand densities
- ✓ Kleinfontein reflect limited to no private sector investment
- ✓ Kleinfontein reflect small business development predominantly in the nature of some small-scale formal businesses and home based businesses.
- ✓ The school receives minimal subsidisation from the government and is therefore dependent on donations from students' parents as well as incessant fund raising projects to generate enough money to keep it alive.

1.4 STUDY AREA DELINEATION

Kleinfontein is located roughly half-way between Pretoria and Bronkhorstspuit. It lies just south of the N4, just west of the R515, a few kilometres south of Rayton.

Map 1.1: Kleinfontein Settlement Plan



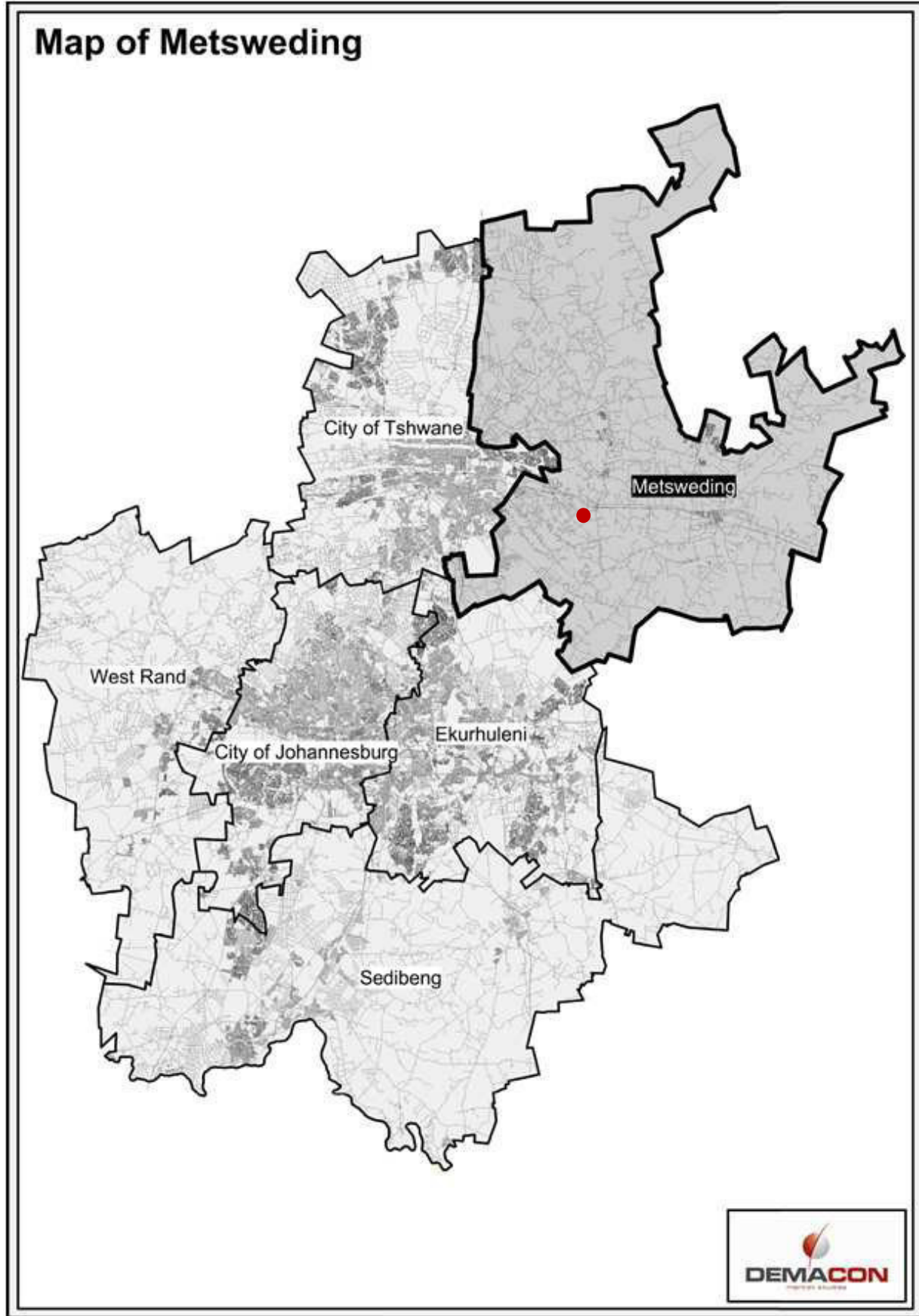
1.5 REPORT OUTLINE

The remainder of the report is structured in terms of the following main headings:

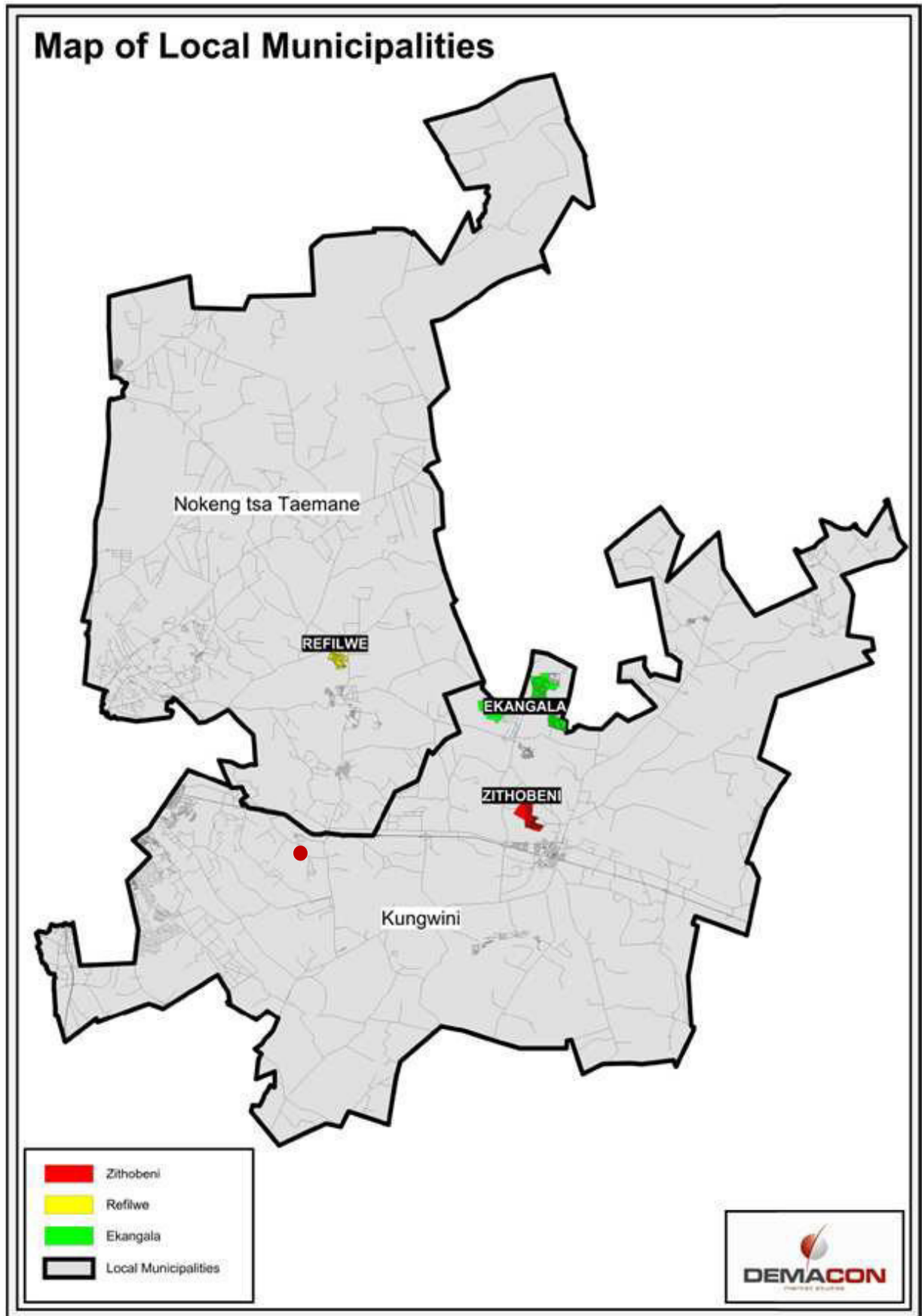
- Chapter 2: Location Analysis
- Chapter 3: Economic Market Overview
- Chapter 4: Demographic Market Overview
- Chapter 5: Qualitative Overview of Kleinfontein
- Chapter 6: Kleinfontein Growth Trends and Development Prospects
- Chapter 7: Development Recommendations.

The following Chapter focuses on the location aspects in the market with the objective of estimating the development potential within the designated area.

Map 1.1: Location of Metsweding District Municipality within Gauteng Province



Map 1.2: Location of Local Municipal Areas



CHAPTER 2: LOCATION ANALYSIS

2.1 INTRODUCTION

This chapter focuses on the location aspects in the market with the objective of estimating the development potential within the designated area.

Market potential is influenced by; *inter alia*, the characteristics of Kleinfontein. Certain types of developments each have specific location requirements and should subsequently be assessed in terms of selected location criteria. To this effect, the site evaluation model is utilised. The study area falls within the Metsweding District Area – Kungwini Local Municipality. The purpose of this chapter is three folded:

- ✓ Firstly, to provide some regional context to the spatial reality in which the study area is located,
- ✓ Secondly, to provide an overview of the existing spatial development guidelines and projects applicable to the area,
- ✓ Thirdly, to provide a more detailed status quo profile for the study area and key focus nodes.

2.2 REGIONAL / DISTRICT CONTEXTUAL PERSPECTIVE

Metsweding District - Metsweding was integrated into Tshwane from May 2011.

The Metsweding District Municipality (also referred to as Metsweding) was established as a category C municipality in terms of section 155(1)(c) of the Constitution of the Republic of South Africa and demarcated as such in terms of the Local Government: Municipal Demarcation Act, 1998. The district is situated in the north eastern area of the Gauteng Province and is under the administrative area of the Gauteng Provincial Government.

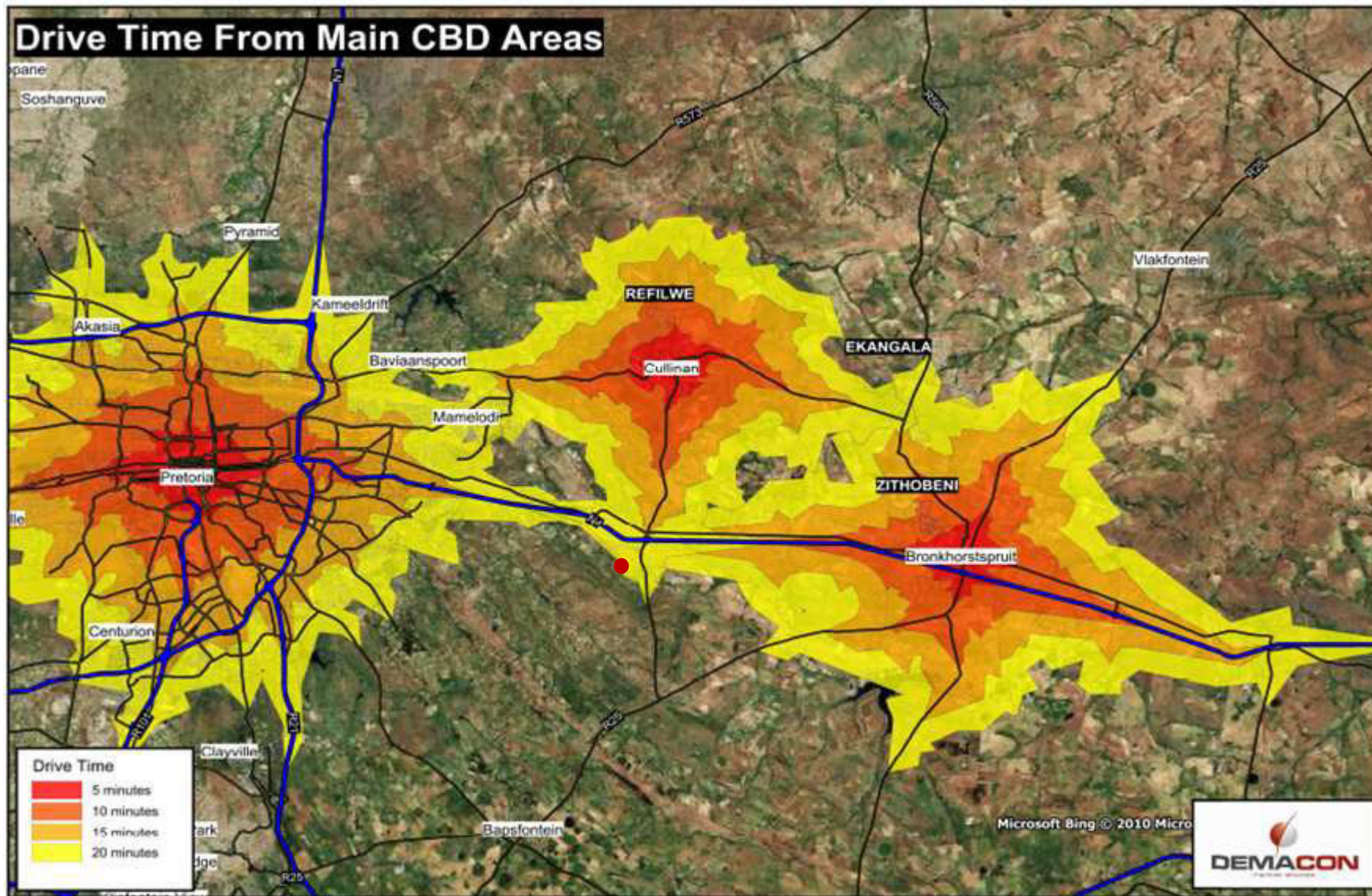
Metsweding borders Tshwane in the west, Ekurhuleni in the southwest, Waterberg District Municipality which is on the northwest of the district and located in the Limpopo Province, Nkangala District Municipality which form the north and southeast borders of the district on the Mpumalanga Province side – (Refer to Map 1.1 in the previous Chapter).

Metsweding consists of two local municipal areas – Nokeng Tsa Taemane and Kungwini.

Nokeng Tsa Taemane Local Municipality (NTLM) is located in the north eastern part of Gauteng Province. It is approximately 45km from the City centre of Tshwane. To the north, the municipality is bordered by Limpopo Province especially Belabela Municipality linked by the N1 North in the South Northern direction. In the eastern side the municipality is bordered by Mpumalanga province where Thembisile Local Municipality is situated. In the South and still within the district area, the municipality is bordered by Kungwini Local Municipality and more crucially the N4 Road linking the municipality with the city of Tshwane in the east-west direction located within the Maputo Development Corridor which is in the N12 direction parallel.

Kungwini Local Municipality is situated on the north-eastern side of the Gauteng province. The municipality shares the boundary with the Tshwane Metropolitan Council on the west and the Emalaheni Local Municipality to the east, Delmas local municipality to the south, Thembisile Local municipality to the north-east and Ekurhuleni Metropolitan Council to the south-west. It consists predominantly of the areas of Bronkhorstpruit, Ekangala, Kungwini and Rethabiseng.

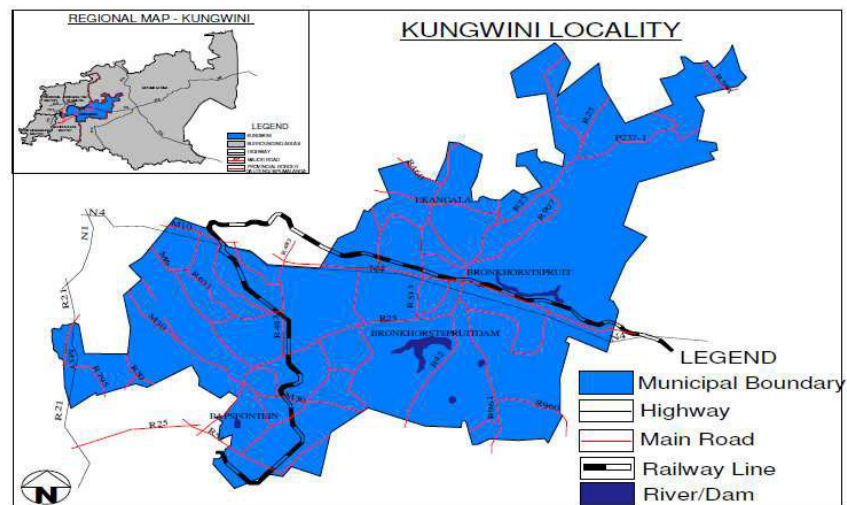
Map 2.1: Drive Time Map



2.3 KUNGWINI LOCAL MUNICIPAL AREA

2.3.1 Overview

From a regional context, Kungwini Local Municipality is well connected by road and is within 30 minutes' commuting distance to Olivier Tambo International Airport and Waterkloof International Airport. The N4 national highway (Maputo Corridor) traverses the municipal area running from east to west. This highway passes Bronkhorstspruit in Kungwini, connecting Botswana in the west, passing through the



Tshwane Metropolitan Area in Gauteng, Witbank, Middleburg, Belfast and Nelspruit in Mpumalanga and Maputo to the east. The R25 is also an important road linkage transversing the area diagonally from south to north. The significance of these major corridors for development cannot be ignored as they not only provide good access to the Kungwini area, but provided “trade lifelines” for goods and services of the area to support the development of the local economy. The railway line parallel to the highway forms a strong spatial structuring element of the municipality.

Kungwini has divided the municipal area into three regions namely West, North East and Central.

Kungwini West Region comprises the following areas:

- ✓ Bashewa AH
- ✓ Cullinan (SH)
- ✓ Donkerhoek SH
- ✓ Doornkloof SH
- ✓ Silver Lakes
- ✓ Mooikloof
- ✓ Mooikloof SH
- ✓ Mooiplaas SH
- ✓ Olympus AH
- ✓ Shere AH
- ✓ Tierpoort AH
- ✓ Valtaki (AH)
- ✓ Tweedracht AH.

Kungwini North East Region comprises:

- ✓ Ekangala
- ✓ Rethabiseng
- ✓ Ekandustria
- ✓ Sokhulumi.

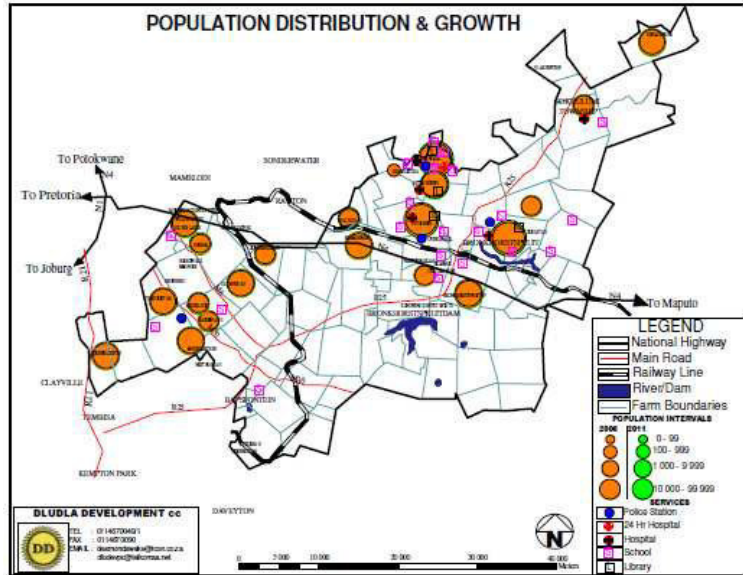
Kungwini Central Region comprises:

- ✓ Bronkhorstspruit
- ✓ Bronkhorstspruit Plots
- ✓ Cultura Park

- ✓ Sehlakwana
- ✓ Valtaki AH
- ✓ Riamar Park
- ✓ Valtaki AH
- ✓ Zithobeni
- ✓ Bronkhorstpruitbaai (dam area).

The central region has the bulk of the population at 43.9%, followed by North East Region at 34.7% and lastly the Western Region at 21,2%. Population growth over the 2001 to 2009 period has resulted in the high growth of 52% for the West Region, 20.5% for the North East and 18.3% for the Central Region.

The very high population growth in the West Region is due to the new residential developments occurring adjacent to the Tshwane and Ekurhuleni municipal boundaries. The 20.5% population growth experienced in the North East Region is mainly attributable to the informal settlements occurring around Ekangala and Rethabiseng.



The 18.3% population growth is attributable to new residential townships around Bronkhorstpruit, such as China City, and informal settlements occurring in Zithabeni. The Central and North East Region account for the majority of informal households. Informal settlements occurring in the farms are not accurately recorded.

2.3.2 Contextual Analysis & Key Issues

Analysis

- ✓ The proximity of the “economic hub” of Gauteng to the west of Kungwini is resulting in the strong growth of the western part of Kungwini.
- ✓ Official population and other statistics are unreliable as an indicator of spatial development.
- ✓ Bronkhorstpruit functions as the main mixed use node for the Municipal area.
- ✓ The N4 Platinum Corridor, R25 Provincial Road and existing rail line are strong “corridors” and spatial structuring elements in the area.
- ✓ The industrial area of Ekandustria and the large residential population of Ekangala nearby will need to be considered in the strategic “tradeoffs” that may need to be made between servicing existing populations and the ideal spatial structure for future development.
- ✓ The spread of informal settlements due to farm displacements and evictions is creating further pressure on the need for social infrastructure and housing.

Key Issues

- ✓ Rapid “unbalanced” development of the western part of Kungwini which must be addressed.
- ✓ Reliable socio-economic data required for focused integrated development.
- ✓ Reinforcement of Bronkhorstpruit as the central node of the study area.
- ✓ Existing nodes and corridors need to be reinforced

2.3.3 Infrastructural Perspective

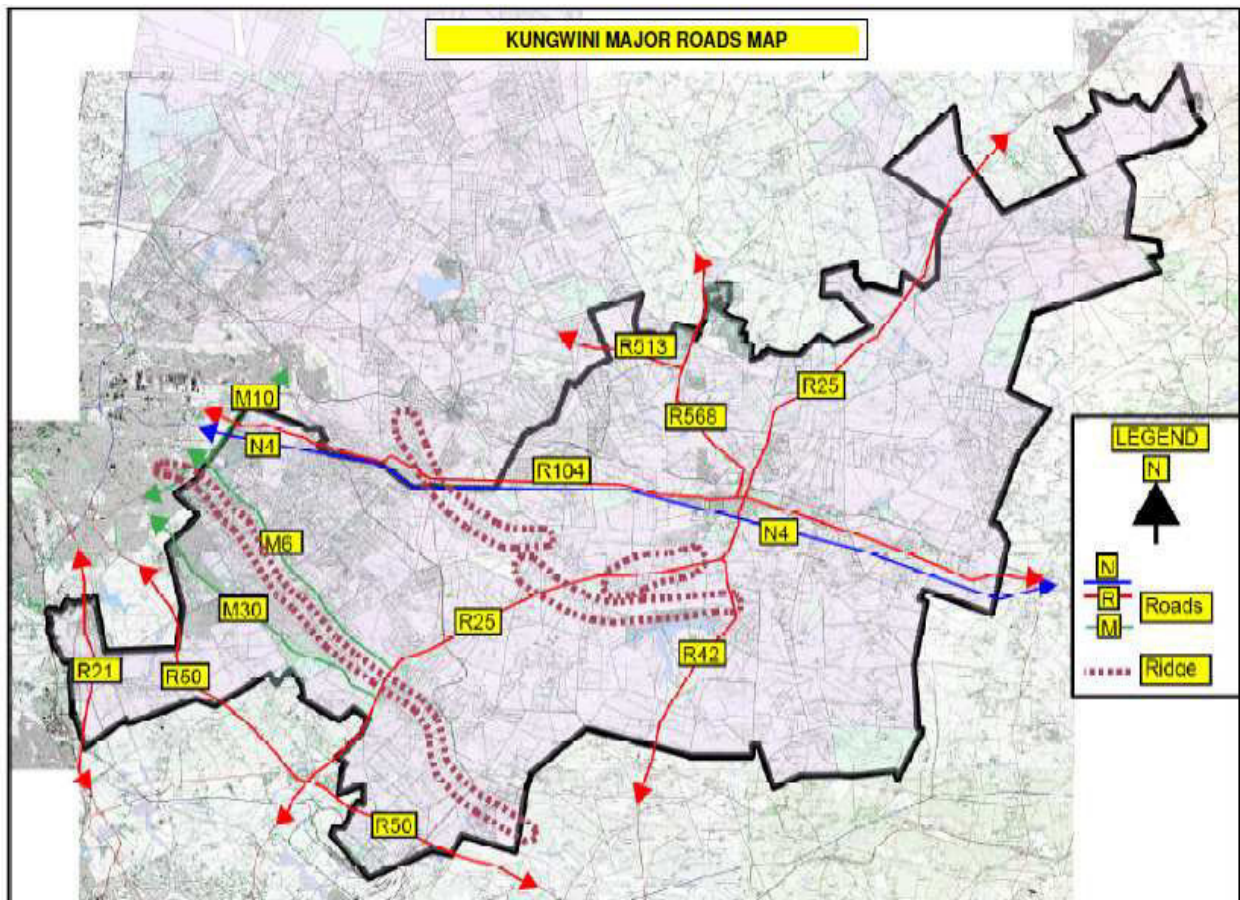
Transportation

- ✓ Emphasis is placed on road transport as this is the dominant mode of transport in the study area.
- ✓ The municipal area is characterised by excellent regional accessibility. The major transport corridor is the N4 freeway which traverses Kungwini in an east-west direction. A secondary corridor is the north-south R25 Provincial road.
- ✓ The road network in Metsweding District Municipality comprises approximately 5 000km of roads (MDM's Integrated Transportation Plan, 2004). The Kungwini Local Municipality road network is about 1 900 km. Most roads in the informal areas are gravel roads (56%).

Some of the major routes within the study area are as follows:

- ✓ The N4 freeway traverses the area in an east-west direction.
- ✓ The R25 Provincial Road serves the eastern part of Kungwini and the south-east between Bronkhorstspruit/Sokhulumu and Kanana/Bapsfontein. This route also links the area with O.R. Tambo International Airport.
- ✓ The R104 Provincial Road R104 runs through Kungwini in an east-west direction parallel to the N4. This route links the Kungwini Local Municipality with Emalahleni Local Municipality to the east and Tshwane to the west.
- ✓ The north-south access is provided by the R175 and R670 Provincial roads, linking Kungwini Local Municipality with Thembisile Local Municipality to the north and Ekurhuleni to the south-west.
- ✓ The R175 road links the industrial area of Ekandustria with O.R. Tambo International Airport.

Map 2.2: Kungwini Major Roads Map



2.3.4 Spatial Structure

Kungwini Central Region

The most dominant land use in the Kungwini area is agriculture, but although agriculture accounts for approximately 80% of the land use in the area, it only contributes approximately 3.7% to the total economy. The bulk of production within the agriculture sector takes place on privately owned commercial farms, notably farms around Bronkhorstspuit.

Bronkhorstspuit is rich in heritage resources. The tourism industry in the area is regarded as small, but developing. Well known tourist attractions in the area include the following:

- ✓ Bronkhorstspuit Dam
- ✓ Various Nature Reserves
- ✓ Conference and accommodation facilities
- ✓ Sizanani Cultural village
- ✓ The Nan Hua Buddhist Temple.

Bronkhorstspuit Dam is the major water resource for the Central and North east regions of Kungwini, as well as for other municipalities to the east of the municipal area. Most manufacturing and distribution related companies are located in the industrial areas in close



Bronkhorstspuit Dam



The largest Buddhist Temple in Africa: Nan Hua Buddhist Temple

proximity to Bronkhorstspuit i.e. Bronkhorstspuit Light Industrial to the north-west of the town Bronkhorstspuit and Ekandustria. Zithobeni is the main outlying residential township development within the Bronkhorstspuit activity node.

Kungwini North East Region

- ✓ The Kungwini North East region is mostly dominated by industrial areas of Ekandustria.
- ✓ Ekandustria is also regarded as being the economic hub of Kungwini.
- ✓ As in the Bronkhorstspuit light industrial area, manufacturing is also carried out in Ekandustria.
- ✓ The region comprises two township residential areas i.e. Ekangala and Rethabiseng.



Kungwini West Region

The Kungwini West region has been identified as a development concentration area and should be regarded as a residential nodal area. This region includes:

- ✓ Silver Lakes
- ✓ Willow Acres
- ✓ Mooikloof
- ✓ Bronberg
- ✓ Boardwalk

✓ Rietfontein Ridge.

This region is situated on the western section of the municipal periphery, sharing a boundary with Tshwane Metropolitan Municipality. As a result of this location, engineering services contributions are divided between the adjacent municipalities.



2.3.5 Spatial Key Structuring Elements

- ✓ As illustrated on the map below, more than 80% of the land in Kungwini is used for agriculture, yet this sector contributes only 3% to the local Gross Domestic Product. (LGDP). Manufacturing services, while using less than 5% of the land, are responsible for 57% of the local economy.

Factors affecting the spatial development of Kungwini include the following:

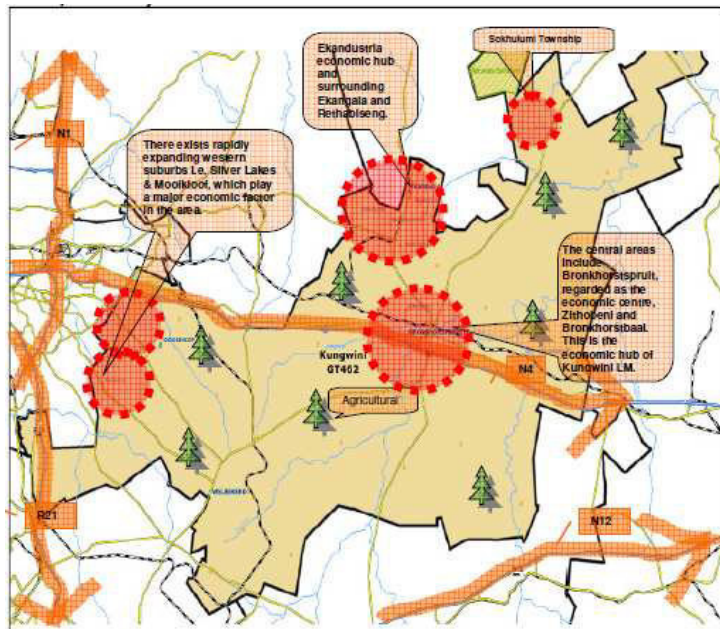
- ✓ The disparate location of urban settlements (Bronkhorstspuit, Ekangala, Ekandustria and Silverlakes) influences the spatial arrangement of the area negatively as it cannot be planned as one consolidated and compact unit.

- ✓ This is contrary to the provisions of the principles enshrined in the Development Facilitation Act. Furthermore, certain areas within the municipal areas are environmentally sensitive and should not be developed.

- ✓ These sensitive areas are mainly on the south-western portion of the municipal area as well as the lake.

- ✓ Other areas of less environmental significance occur throughout the area. These can be developed to a certain extent.

- ✓ Provision of services has further entrenched the spatial inequality of the area as these are provided mainly in the affluent urban areas, excluding the poor communities. Added to this is the amalgamation of the former areas of the KwaNdebele homeland and Bronkhorstspuit, which is yet to be addressed adequately.



The presence of the N4 highway, together with the rail line, forms an east-west spatial axis, while the R25 and Lynwood routes form a north-south axis. These axes provide the potential for corridor development. The geographic spread of an informal settlement has not influenced the spatial pattern of the area.

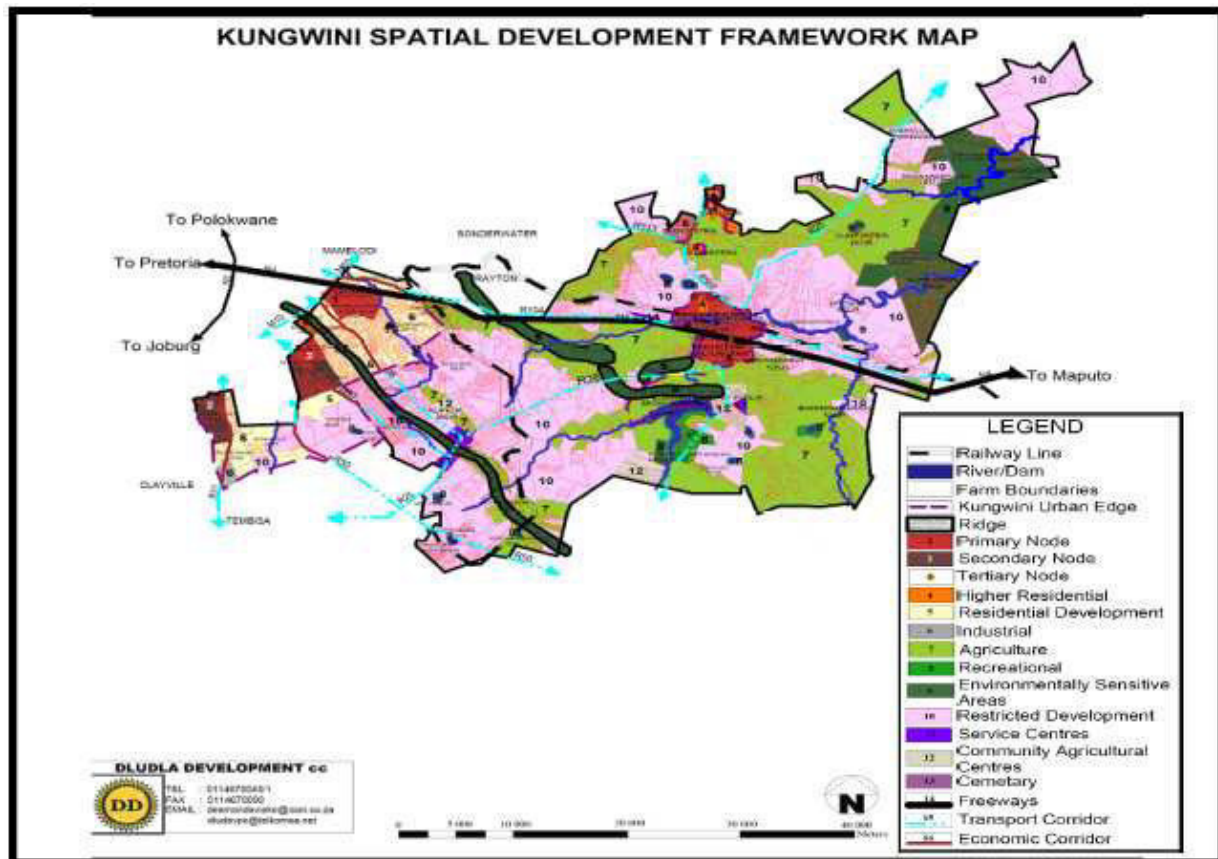
The main “preliminary structuring elements” for the Kungwini Local Municipality are as follows:

Nodes

- ✓ Primary Node: Bronkhorstspuit Central Business District, which is the primary mixed use node in the study area.

- ✓ Secondary Node: Ekundustria Industrial Area is an area that has excess infrastructure capacity for current usage and the Ekangala and Rethabiseng residential areas.
- ✓ Secondary Node: the rapidly expanding western residential Area
- ✓ Secondary Node: Sokhulumu Township
- ✓ Secondary Node: Hazeldene N4 Node
- ✓ Recreational Node: Bronhorstspruit Dam and surrounding areas.
- ✓ Service centres at various locations.

Map 2.3: Kungwini Spatial Development Framework



Corridors

- ✓ N4 Maputo Corridor (major east- west corridor)
- ✓ R25 (secondary north- south corridor)
- ✓ Lynwood Road extension M6 (secondary north- south corridor)
- ✓ There are a number of major and minor corridors in Kungwini.
- ✓ The two major ones are the Maputo corridor along the N4, running east-west and the Ekurhleni corridor along the R21, which runs north-south from the airport to Tshwane.
- ✓ Both of these have attracted large nodes. On the N4 the Hazeldene Node, between Silver Lakes and the Pienaar’s River is about 1 200 ha. The developer is constructing a new interchange with the N4, to service this mixed land use node.
- ✓ On the R21, a developer is planning a similar large node which will straddle the motorway. They are also constructing an interchange on the R21 to service their development. This nodes is planned to cover about 2 400 ha and to create 80 000 to 100 000 jobs if successful.
- ✓ Minor corridors are developing along Garsfontein road, Lynwood Road and Boschkop Road. These corridors are also attracting nodal development. On Garsfontein Road, a shopping centre is developing opposite the existing Mooikloof up-market housing estate, which will become the Mooikloof Mall. The centre will be approximately 700 ha. Lynnwood Road already has shopping and office developments around its interchange with Hans Strýdom Avenue.

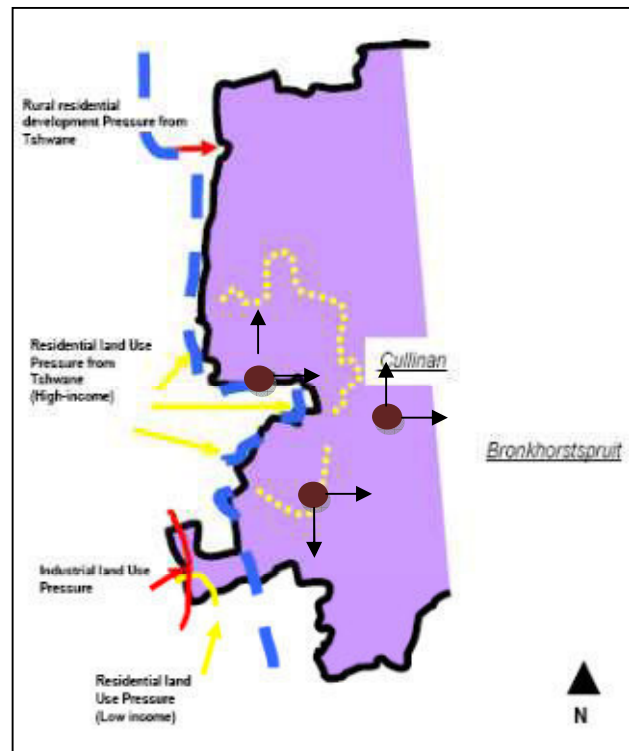
- ✓ The development of the Misty Lakes up-market housing estate on Boschkop Road has also prompted mixed use development along the road from Lynnwood Road to Misty Lake and the Kitty Hawk Aerodrome.
- ✓ The above developments fall within the official Kungwini Urban Edge and are the main driving force of development in the area.

2.4 DEVELOPMENT PRESSURES AND DEMANDS

Dominant development pressures and demands

The following dominant development pressures characterises the district area:

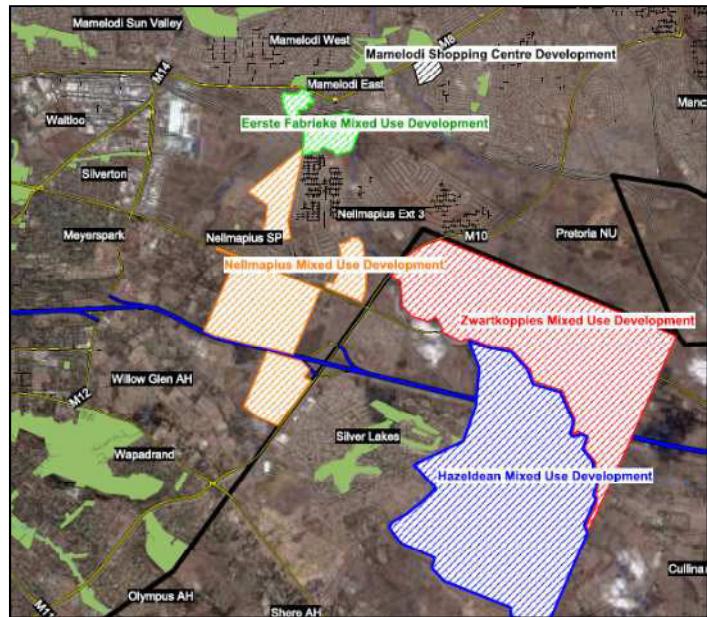
- ✓ Urban and high density developments around Bronkhorstspuit, Ekandustria, Cullinan, Silver lakes, Rayton, Roodeplaat Dam Area and Steve Biko
- ✓ Rural and Conservation trends – surrounding urban high density zones – emphasis on agricultural land, Roodeplaat Dam, Bronkhorstspuit Dam
- ✓ Tourism development as part of the Dinokeng Project
- ✓ Need for higher income housing at Steve Biko, Cullinan, Bronkhorstspuit Dam and Ekandustria
- ✓ Need for lower income housing at Bronkhorstspuit/Zitobeni, Rayton, Cullinan/Refilwe, Roodeplaat dam area and Silver Lakes.
- ✓ Urban and rural development opportunities, supported by housing intensification trends identified at Steve Biko Ville
- ✓ Housing intensification trends identified for the Roodeplaat Dam Area, Silver Lakes, Rayton and Cullinan/Refilwe
- ✓ Urban and rural development opportunities identified at Cullinan/Refilwe
- ✓ Housing intensification trends identified for Ekangala, Rethabiseng, and Zithobeni.
- ✓ Urban and rural development trends identified for Ekandustria and Bronkhorstspuit
- ✓ Housing intensification trends identified for Bronkhorstspuit Dam.



External Development Pressures:

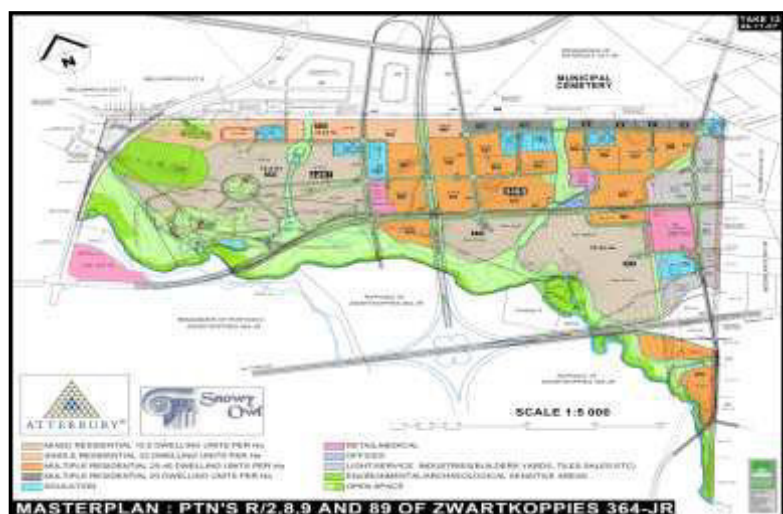
- ✓ Eastern expansion of the Temba / Hammanskraal Area in the north of Tshwane, which emanated in the development of Steve Bikoville east of the N1 freeway
- ✓ Eastern expansion and pressure emanating from the Zone of Choice in Tshwane, resulting in the formation of settlements in the vicinity of the Roodeplaat Dam
- ✓ Northern expansion of Mamelodi – currently considered to relief housing backlog
- ✓ Southern expansion of Mamelodi – pressure to extend it southwards to deal with housing demand
- ✓ Eastern expansion along the N4 freeway – development along this freeway is resulting in pressure on the Donkerhoek area and result in the formation of informal settlements along the freeway

- ✓ Southeastern expansion of Tshwane's middle to high-income areas - There are three dominant growth areas inducing development pressure on the district: Development areas around the Mooikloof Node, areas around Zwartkoppies/Silver Lakes and areas around Zambesi.
- ✓ The Zambezi Area is characterised by a number of new residential developments including Strelitzia (1 033 units priced from R400k) east of the N1, between the Molotto Road and Kameeldrift, supported by Zambezi Estate (300 units priced from R595k), Roodepark Eco Estate (priced from R462k), Two Rivers (590 units priced from R600k), Pebble Rock (300 stands priced from R450k), Zambezi Country Estate (750 stands priced from R425k) to name just a few. In general the Zambezi Region growth by 1 500 to 2 000 residential units per annum.



- ✓ This area is also experiencing growth in terms of retail developments – Capicol are involved in the extension of Zambesi Mall to within the 60 000m² range. Plans are also submitted to develop a new Zambesi Checkers Hyper opposite the Zambesi Mall. Commercial development in the node will increase as a more direct link is created with the Mamelodi Market. Large percentages of the township's population are employed within these northern suburbs of Tshwane creating an injection of buying power into the area.
- ✓ The Zwartkoppies/Silver Lakes area is also characterised by a number of new developments. Zwartkoppies Mixed Use - A recent application has been done for a mixed-use development consisting of 7 000 mixed residential units, neighbourhood centre, lifestyle centre, office park, automotive space, private hospital, private school and light industrial and warehousing. This development is located just north of Silver Lakes.

- ✓ Plans are also in the pipeline for a mixed-use development in Nelmapius to consist of a medium sized retail centre, industrial and office uses. This is supported by the Hazeldean Development - Abland Precinct. The new precinct of Hazeldean will serve as an integrated multifunctional neighbourhood. Besides from the residential and retirement options, Hazeldean will offer commercial, institutional, educational and recreational facilities , including the Curro Private School, the 16 000m² Hazeldean Square Shopping Centre (with anchor tenants Pick 'n Pay, Woolworths, Virgin Active, an Intercare Clinic and Dis-Chem), the 22 450m² Hazeldean Office Park and a fully



equipped acute hospital. Other future developments at Hazeldean include Hazeldean Homeworld, a 9 000m² decor shopping complex, which is in the final planning stages. Plans are also in the pipeline for the development of a Bronberg Private School.

- ✓ The area around Mooikloof also represent a growth area, a total of 141 new estates are in various stages of completion within the areas of Equestria and areas east of Hans Strijdom. This amounts to approximately 26 914 units, with a take up of approximately 2 000 units per annum. Predominantly middle to higher priced units.
- ✓ A proposed mixed use development is also proposed for the Mooikloof Area. The proposed development will include a regional mall, speciality centre, big box retail, automotive uses, offices, residential and a private hospital. The project will be developed over a phased timeframe.
- ✓ To the South of Metsweding is the Ekurhuleni Metropolitan area. This area is also posing serious development pressures on the south of Metsweding for the same reason - people in Ekurhuleni see the district as being within reasonable distances from their major centres and from their places of work.
- ✓ Industrial development intrusion in the region is another pressure difficulty experienced by the region
- ✓ Southern expansion along the R21 – corridor development is evident along the road in the form of offices, light industries and residential estates.

Overall Development Guidelines for the Development of the District Municipal Area

- ✓ Cullinan, Rayton and Bronkhorstspuit are identified as less stable economic growth areas that need to be stabilised
- ✓ Cullinan, Rayton and Bronkhorstspuit are identified as urban towns that need to be contained with a clearly defined urban edge
- ✓ Rural settlements (small holdings with a rural character) are identified in areas that are in the rural environment outside of the urban edge. These areas are not supposed to become urban or their urbanisation process must be managed and as such a set density is required for these areas by the local municipalities.
- ✓ Intensive rural areas have been identified in the northern area of Nokeng Tsa Taemane; these areas are identified as such because they will be used extensively for agriculturally related uses
- ✓ Extensive rural areas were identified as to be used for extensive farming and to retain their rural character
- ✓ In terms of mobility, the following roads are critical for the Metsweding District Municipality, N1, N4, R575, R25, R42 and other provincial roads in the district. These mobility roads and rail play an important role in improving the movement of goods and services in the district.

Commercial/Business Opportunity Location guidelines:

- ✓ Business/Commercial activities within the district can be categorised as very limited and growing.
- ✓ The bulk of the major business activities happen in Silver Lakes, Bronkhorstspuit town, Roodeplaas, Cullinan and to a limited extent in Rayton.
- ✓ Due to increased development pressure on the periphery of these towns, there is great demand for the development of new centres in these peripheries.
- ✓ These centres have the ability of becoming major centres and thus competing with the traditional urban centres.
- ✓ In order to protect the heritage of these towns and their status within the urban hierarchy, a set of principles for the development of a business location policy and strategy by the different local municipalities is proposed.
- ✓ In the absence of a set guidelines and strategy for Commercial/Business Opportunity location in the local municipalities, the following will apply:

- ✓ A hierarchy of centres should be established in all local municipalities
- ✓ From a district point of view, the following is the hierarchy that will be encouraged and reinforced: Cullinan/Refilwe, Rayton, Ekandustria, Silver Lakes, Ekangala (special urban development centre) and Bronkhorstspuit will be considered as major urban centres.
- ✓ The following are the business location tenets that will need to be followed in the approval of applications:
 - ✓ All commercial, retail and industrial proposals with a total retail bulk distribution of more than 5 000m² must be directed to the major urban centres.
 - ✓ No development with a total bulk more than 5 000m² should be approved outside the central business areas of these major centres.
 - ✓ All local municipalities must define the CBD's for each of these major urban centres.
 - ✓ Existing developments that have a bulk of more than 5 000m² and are located outside of these major urban centres should not be considered as urban centres as yet, nor should their bulk be allowed to increase in future, unless the local municipality sees one of those areas as a future major urban centre.
- ✓ To avoid any unmanaged or unplanned development in Metsweding, the following development direction is proposed for the district:
 - ✓ Cullinan and Refilwe must be contained and be allowed to grow towards Rayton.
 - ✓ Rayton on the other hand must be contained and be forced to grow towards Silver Lakes.
 - ✓ The Roodeplaat dam area must be contained and managed as per DOSS
 - ✓ The Silver Lakes area must be forced to intensify first and later be allowed to grow within its containment area.
 - ✓ Ekangala must be allowed to grow towards Ekandustria and Rethabiseng
 - ✓ Bronkhorstspuit must be allowed to grow within its contained area as determined in the Gauteng SDF 2000.

Summary of Characteristics:

- ✓ District characterised by three dominant urban areas – Bronkhorstspuit, Cullinan and Rayton
- ✓ 80% of land focused towards agricultural activities – emphasis on areas to the north and south
- ✓ Relatively concentrated economic land use base
- ✓ The bulk of the major business activities happen in Silver Lakes, Bronkhorstspuit town, Roodeplaat, Cullinan and to a limited extent in Rayton
- ✓ Tourism opportunities vested in the development of the Dinokeng Project – Roodeplaat Dam as well as Bronkhorstspuit Dam
- ✓ Dominant Industrial Node vested in Ekandustria
- ✓ Demand for high and low income residential developments
- ✓ High density development zones vested within the district boundaries include; Bronkhorstspuit and Bronkhorstspuit Dam, Ekandustria, Cullinan/Refilwe, Rayton and Steve Bikoville
- ✓ External pressures from Tshwane and Ekurhuleni Borders – High-income and low-income residential developments, rural residential development and industrial development pressures.

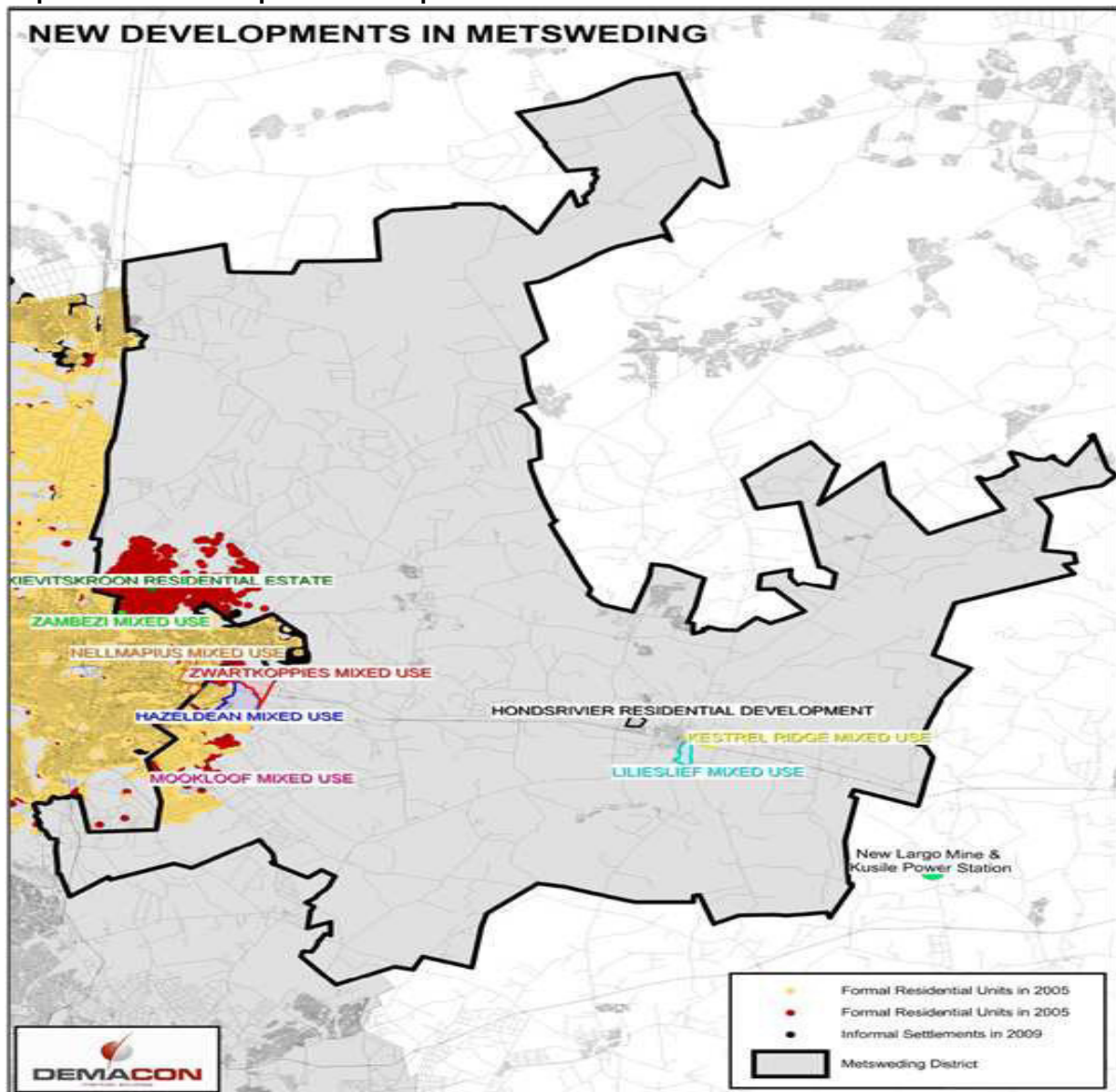
2.5 SELECTED PROPOSED DEVELOPMENTS

Map 2.4 indicates the location of selected proposed development projects identified within and just beyond the district borders. Table 2.1 summarises the land uses proposed as part of each of the developments.

Table 2.1: Selected Proposed Development

Development	Land Uses
Lilieslief Mixed Use	Regional Retail Centre, middle income residential, retirement units, offices, industrial uses
Kestrel Ridge Mixed Use	Middle income residential, retirement, local convenience retail
Zwartkoppies Mixed Use	Minor Regional Centre, offices, automotive uses, private hospital, private school, industrial uses
Hazeldean Mixed Use Precinct	Regional mall, retail park, business park, residential uses, medical centre, private school, higher learning node, conference and recreation centre, agriculture centre
Mooikloof Mixed Use	Regional mall, big box retail, speciality/value centre, automotive uses, residential, private hospital
Nellmapius Mixed Use	Regional centre, offices, industrial
Zambesi Development	Regional Centre, Checkers Hyper Centre, Hotel
Kievitskroon Residential Estate	Up-market residential estate

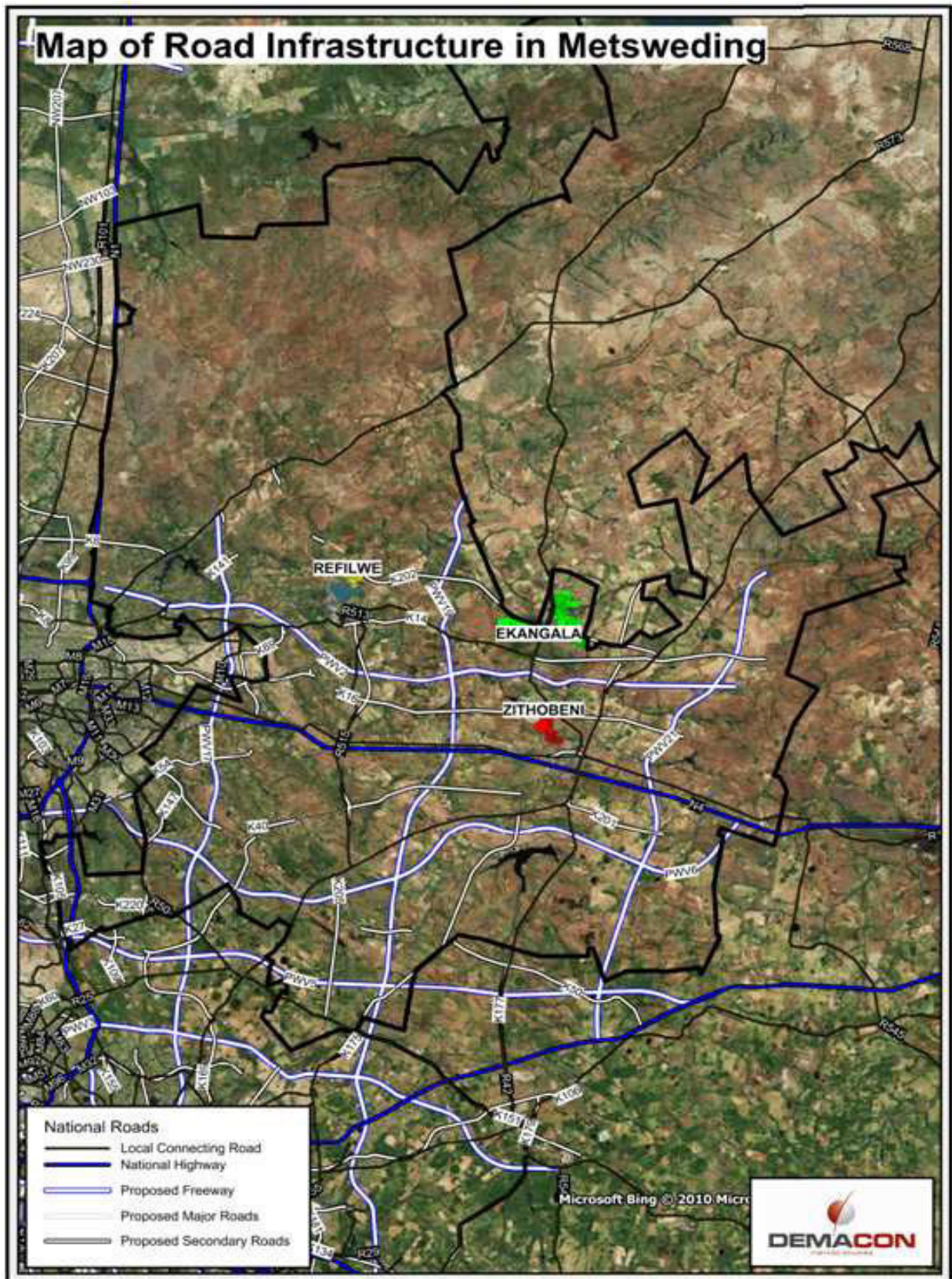
Map 2.4: Selected Proposed Developments



2.5.1 Existing and proposed movement network

Map 2.5 indicates the existing and proposed road infrastructure within Metsweding.

Map 2.5: Existing and Proposed Road Infrastructure

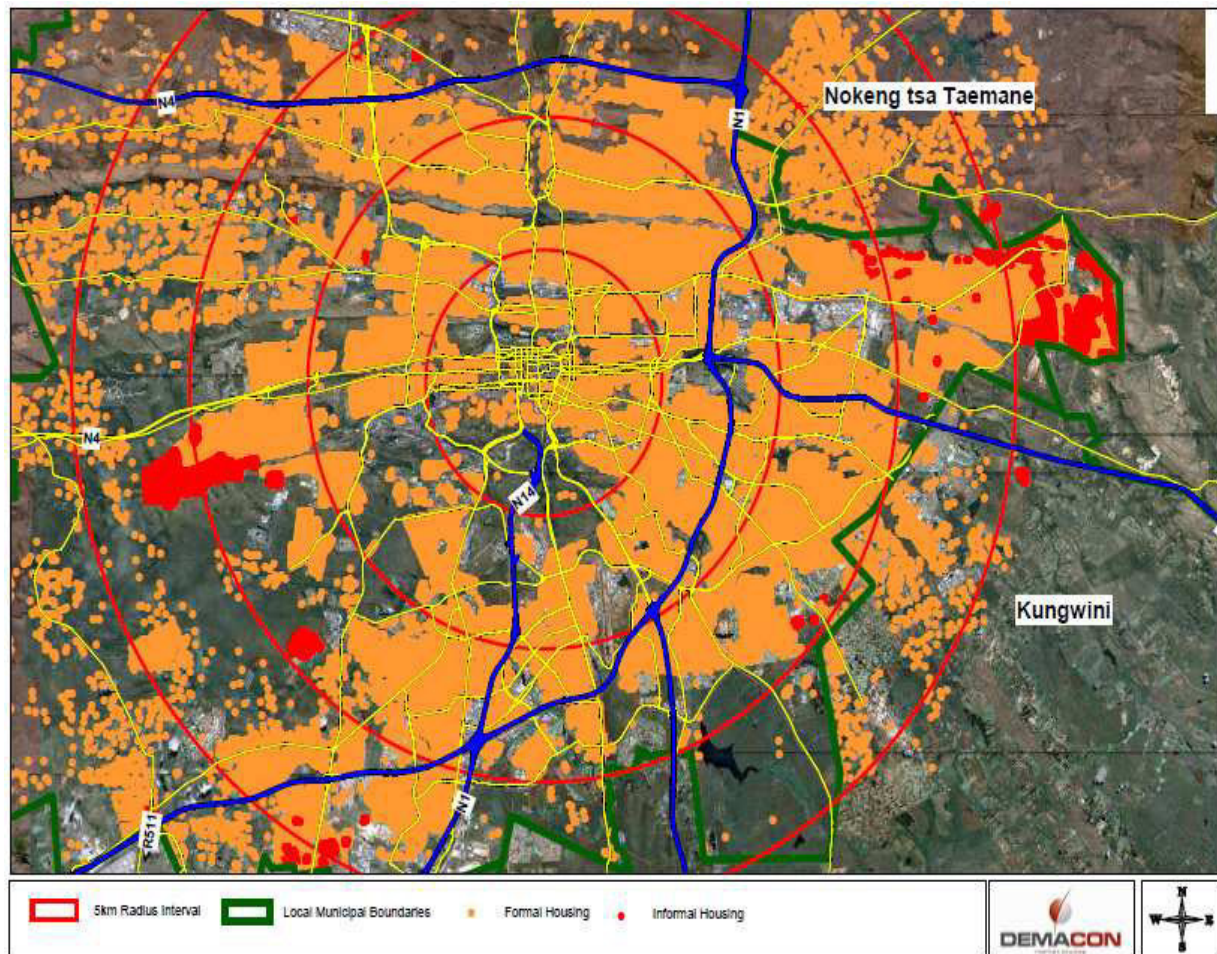


The N1 and N4 freeways provide the area with regional accessibility - Connecting Tshwane East and Emalahleni to the South on the one hand and Tshwane North with Hammanskraal. The R513, R515, R104, R568, R25 and R42 play a critical role within the local accessibility of the area.

A number of proposed roads will also contribute to increased levels of accessibility within the district with emphasis on the proposed PWV 17, 19 and 21 routes improving North-South linkages and the proposed PWV 2, 5 and 6 routes improving East-West linkages. This will be supported by a number of proposed secondary roads. This bodes well towards increased levels of accessibility.

2.5.2 Tshwane Formal and Informal Housing Growth

Map 2.6: Formal and Informal Housing

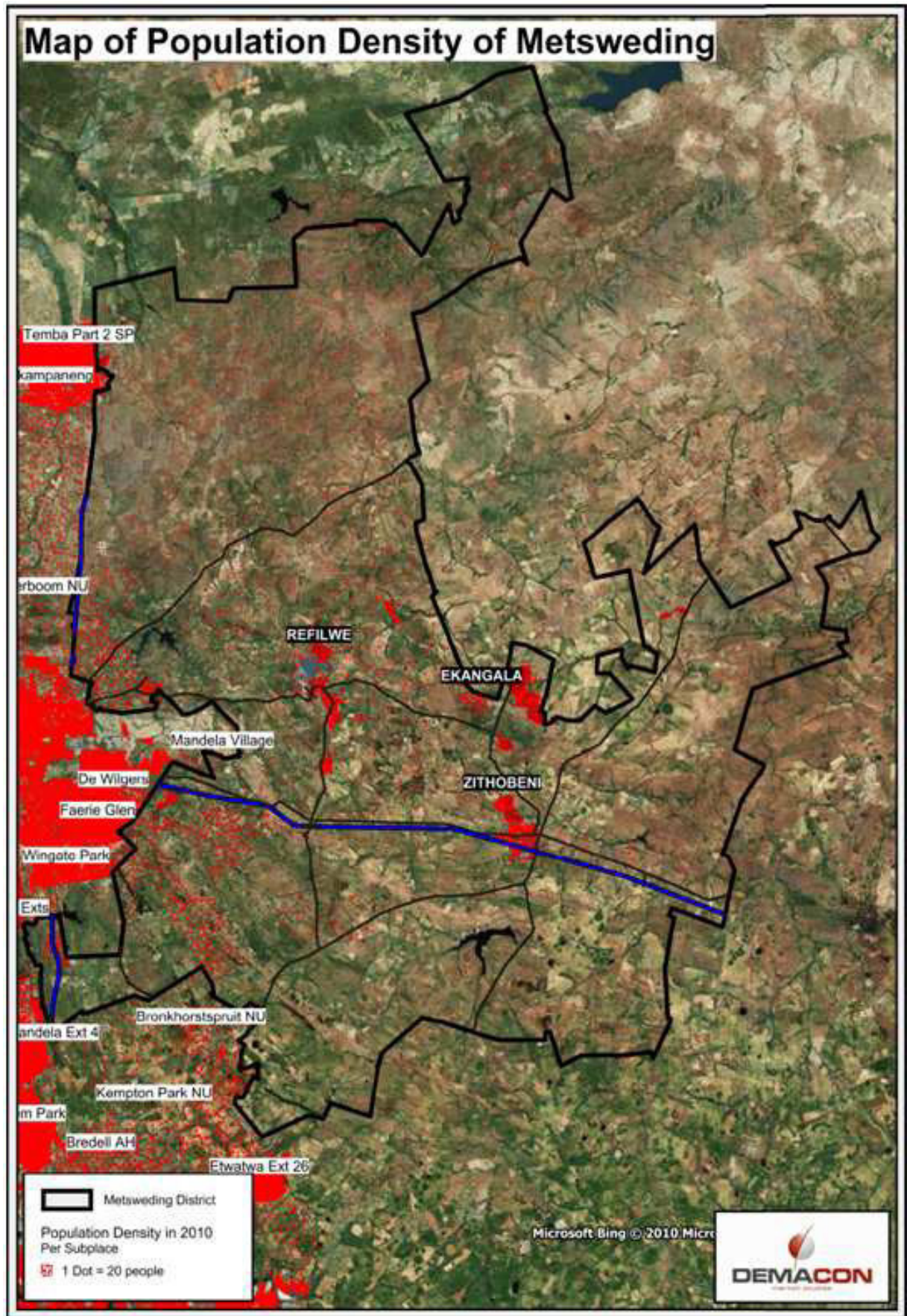


2.5.3 Population density

Map 2.7 the population density of the Metsweding District.

It is evident from the map that the areas with the highest population densities include the Cullinan /Refilwe area, Bronkhorstspuit / Zithobeni and surrounds, Ekangala / Ekandustria/ Rethabiseng. Due to a strong correlation between population density and demand density it is anticipated that the highest demand densities will be found within proximity to these areas.

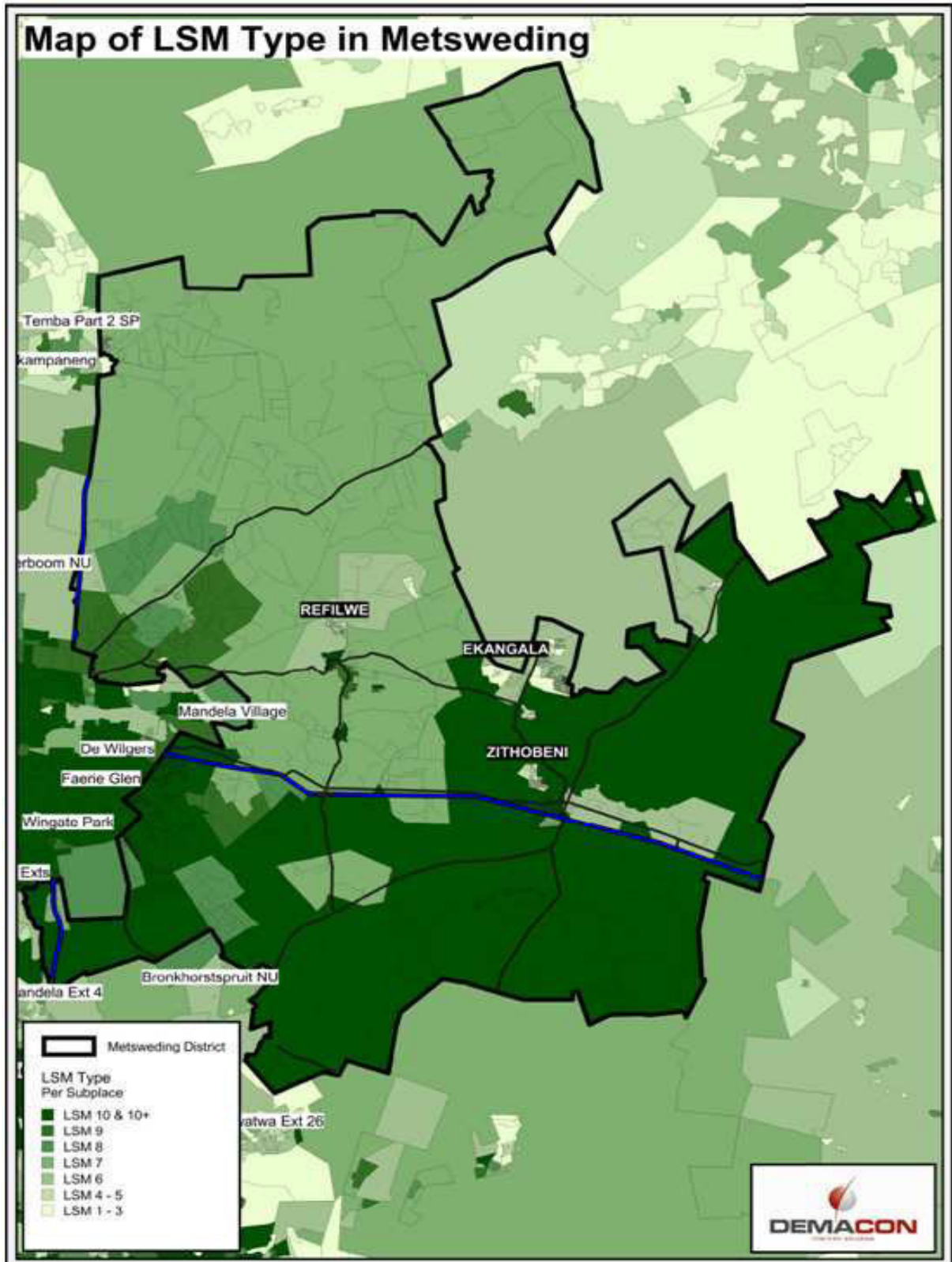
Map 2.7: Population Density



2.5.4 LSM profile

Map 2.8 indicates the LSM profile of the district.

Map 2.8: LSM Profile



Map 2.8 indicates that the district is divided into two distinct areas - the areas south of the N4, Bronkhorstspuit, Zithobeni, Ekandustria, Ekangala and rural areas to the North-East are predominantly characterised by higher LSM profiles, compared to the remainder of areas north of the N4. In general the area under investigation reflect moderate to high living standards. It is anticipated that this in conjunction with moderate population densities will result in moderate to high demand densities, resulting in high development potential within this area.

2.5.5 Retail Supply

Map 2.9 indicates that a small number of retail centres are located within the district itself. However, a number of larger centres are located on the western border of the district (retail offerings of Tshwane East and Tshwane North). Table 2.2 provides an overview of the retail centres located within the district itself.

Table 2.2: Retail centres within Metsweding District, 2011

Retail Centre	Suburb	m ² GLA	Type	Anchors
Hazeldean Centre	Tshwane	17 000.0	Community Centre	Pick n Pay Corporate, Woolworths, Virgin Active
Bronkhorstspuit Centre	Bronkhorstspuit	6 548.4	Neighbourhood Centre	Shoprite Checkers, Clicks, Truworths
Cullinan Jewel Shopping Centre	Cullinan	6 082.0	Neighbourhood Centre	Spar
Bronkor Shopping Centre	Bronkhorstspuit	3 900.0	Local Convenience Centre	Spar
Mooikloof Village	Tshwane	3 861.0	Local Convenience Centre	Spar, Coco Bistro, BSXI Hydro Spa
Total		37 391.4		

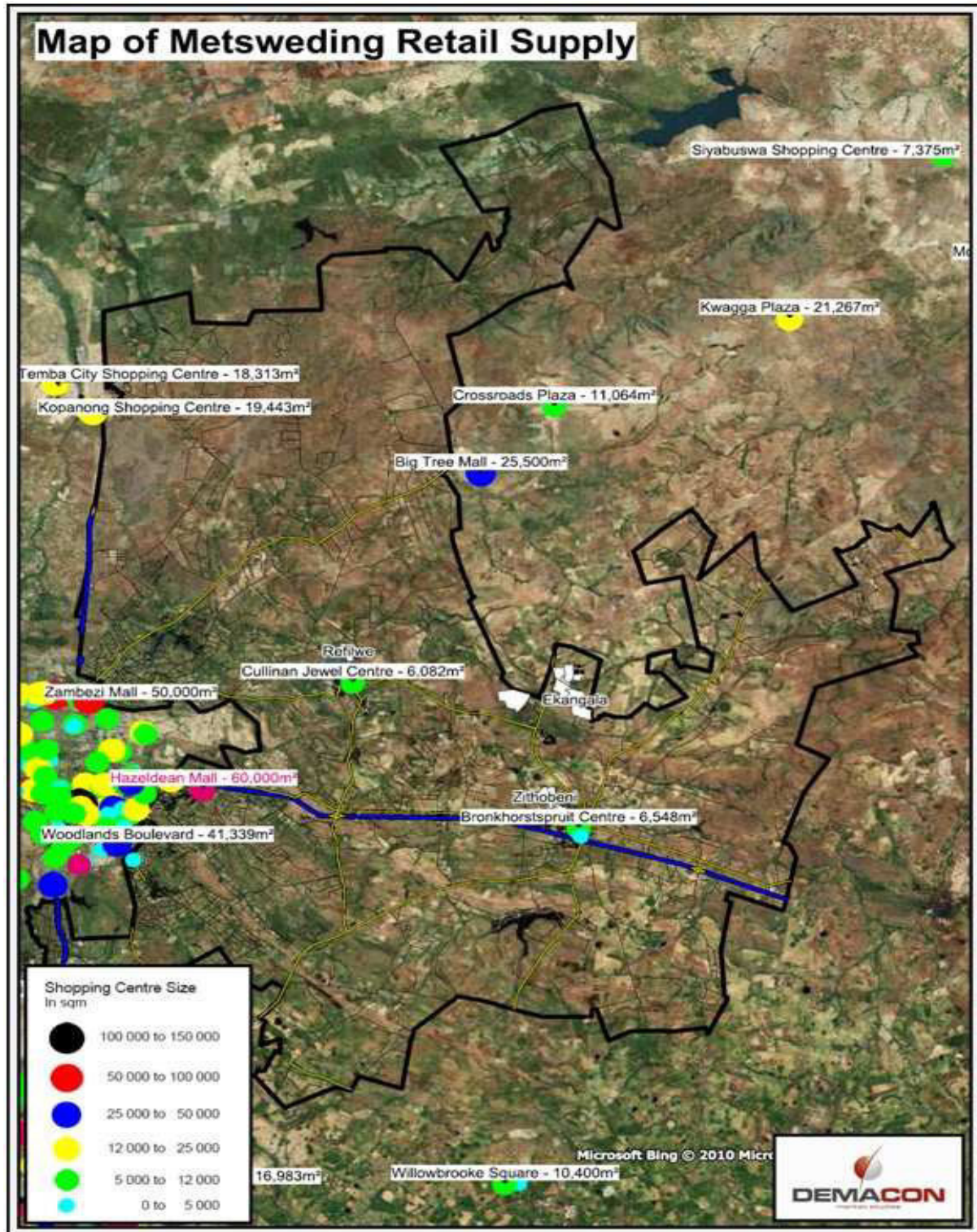
Source: Shopping Centre Directory, 2006 to 2011

The district retail supply includes one community centre, two neighbourhood centres and two local convenience centres.

Besides current supply a number of retail centres are being planned for the larger market area – predominantly as part of mixed use precincts:

- ✓ Hazeldean Regional Mall of ±60 000m²
- ✓ Mooikloof Regional Centre and Speciality Centre of ±60 000m²
- ✓ Zwartkoppies Regional Centre of ±40 000m²
- ✓ Lilieslief Regional Centre of ±26 000m².

Map 2.9: Retail supply in proximity to study area



Development Implications:

From the spatial analysis it is evident that Kleinfontein falls within the West Region of Kungwini Local Municipal area. Population growth over the 2001 to 2009 period has resulted in the high growth of 52% for the West Region. The very high population growth in the West Region is due to the new residential developments occurring adjacent to the Tshwane and Ekurhuleni municipal boundaries.

The proximity of the “economic hub” of Gauteng to the west of Kungwini is resulting in the strong growth of the western part of Kungwini. The Kungwini West region has been identified as a development concentration area and should be regarded as a residential nodal area. Very low levels of disposable income is evident in this sub-region and make sustainable development difficult. The main economic sectors currently contributing to local GDP are manufacturing, services, finance and trade.

Business/Commercial activities within the area can be categorised as very limited. The bulk of the major business activities happen in Silver Lakes, Bronkhorstspuit town, Roodeplaat, Cullinan and to a limited extent in Rayton. Due to increased development pressure on the periphery of these towns, there is great demand for the development of new centres in these peripheries. These centres have the ability of becoming major centres and thus competing with the traditional urban centres.

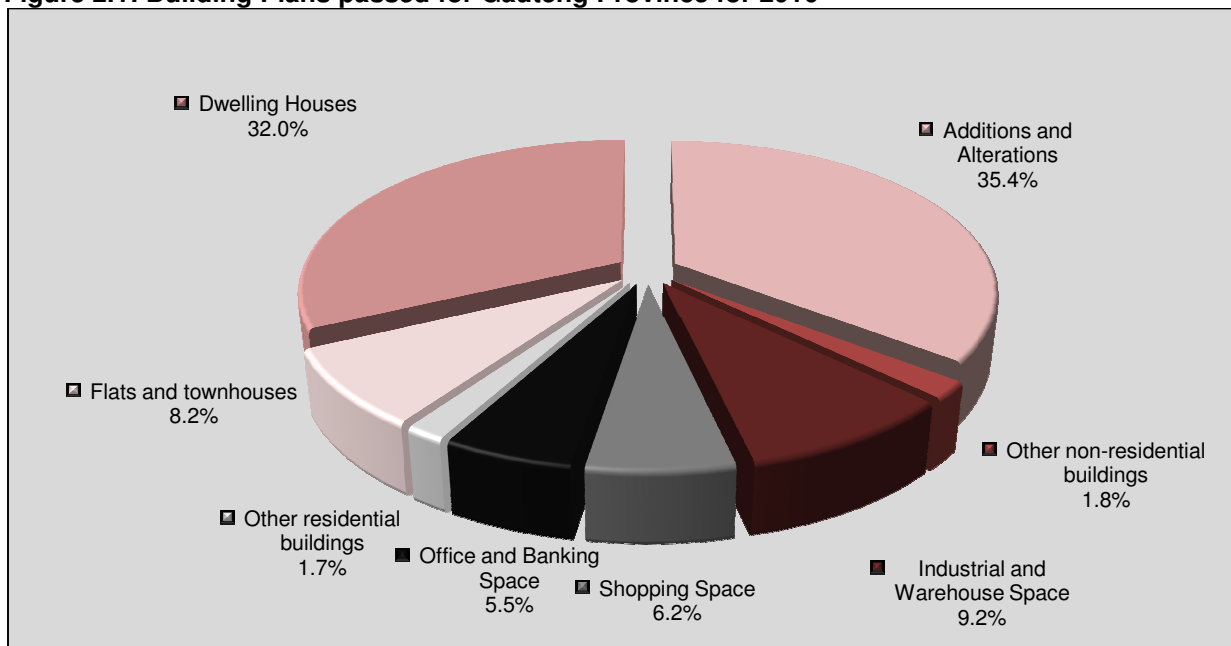
In conclusion, the district is divided into two distinct areas - the areas south of the N4, Bronkhorstspuit, Zithobeni, Ekandustria, Ekangala and rural areas to the North-East are predominantly characterised by higher LSM profiles, compared to the remainder of areas north of the N4. Given the location of Kleinfontein the area reflects moderate to high living standards.

2.6 BUILDING PLAN DATA – BUILDINGS COMPLETED

2.6.1 Gauteng building plans 2010

Key findings of building plans passed for Gauteng for 2010

Figure 2.1: Building Plans passed for Gauteng Province for 2010



Source: Demacon Ex. Stats SA, 2011

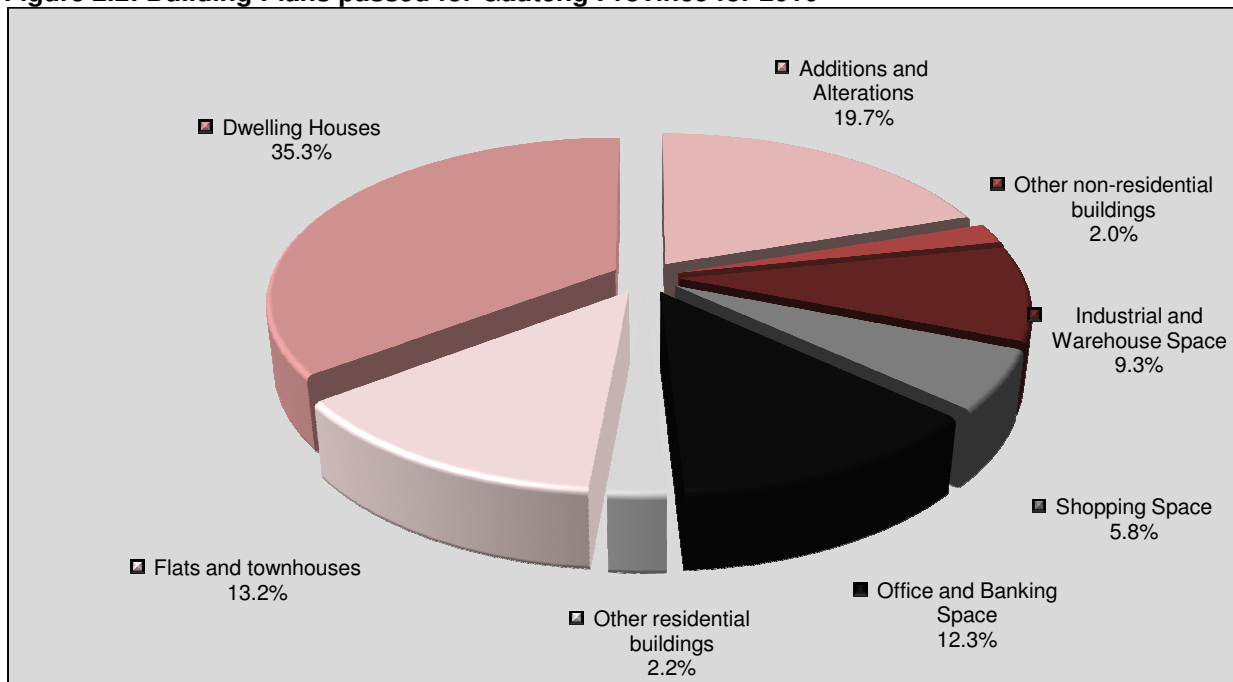
- ✓ Ekurhuleni Metropolitan Municipality took the lead in recording the highest value for building plans passed for 2010, contributing 32,5% or R8 305.3 million to the total of R25 522,1 million reported for Gauteng, followed by City of Tshwane (32,4% or R8 281.2 million) and City of Johannesburg (22,0% or R5 619.4 million).
- ✓ Additions and alterations contributed 35,4% or R9 045.5 million to the total value of building plans passed, mainly due to additions to dwelling-houses (R5 814.9 million), of which R1 836.4 million, R1 746.6 million and R1 540.8 million were reported for City of Tshwane, Ekurhuleni Metropolitan Municipality and City of Johannesburg respectively.

- ✓ The largest contributions for residential building plans passed were recorded for dwelling-houses (31,9% or R8 148.4 million) and flats and townhouses (8,2% or R2 094.2 million).
- ✓ The main contributors to dwelling-houses were Ekurhuleni Metropolitan Municipality (R2 649.7 million) and City of Tshwane (R2 403.2 million). High contributions for flats and townhouses were reported for City of Tshwane (R936.1 million) and Ekurhuleni Metropolitan Municipality (R675.5 million).
- ✓ The largest contributors for non-residential building plans passed were recorded for industrial and warehouse space (9,2% or R2 350.1 million of the total value of building plans passed), shopping space (6,2% or R1 584.2 million) and office and banking space (5,5% or R1 415.8 million).
- ✓ The main contributors to industrial and warehouse space were Ekurhuleni Metropolitan Municipality (R1 290.7 million) and City of Tshwane (R482,1 million).

Key findings of buildings completed for Gauteng for 2010

- ✓ The total value of buildings completed during 2010 for Gauteng amounted to R17 807,9 million, of which 33,9% or R6 030,4 million was recorded as completed for City of Tshwane, 31,9% or R5 675,5 million for City of Johannesburg and 26,4% or R4 709,8 million for Ekurhuleni Metropolitan Municipality.
- ✓ The value of dwelling-houses and flats and townhouses completed in Gauteng during 2010 contributed 35,3% or R6 284,4 million and 13,2% or R2 353,2 million respectively to the total value of buildings completed.

Figure 2.2: Building Plans passed for Gauteng Province for 2010



Source: Demacon Ex. Stats SA, 2011

- ✓ The highest value for dwelling-houses completed was reported for City of Johannesburg (R2 094,2 million), followed by City of Tshwane (R1 874,1 million) and Ekurhuleni Metropolitan Municipality (R1 435,0 million).
- ✓ Regarding flats and townhouses, Ekurhuleni Metropolitan Municipality took the lead recording the completion of R960,3 million, followed by City of Tshwane (R659,0 million) and City of Johannesburg (R562,5 million).
- ✓ The main categories of non-residential buildings which made noteworthy contributions to the total value of buildings completed for Gauteng were office and banking space (12,3% or R2 197,8 million), industrial and warehouse space (9,3% or R1 663,6 million) and shopping space (5,8% or R1 031,2 million).

2.6.2 Kungwini Local Municipality building plans 2010

Figures 2.3 and 2.4 illustrate the residential, non-residential and alteration floor space approved and completed within the Kungwini Local Municipal Area between 2006 and 2010.

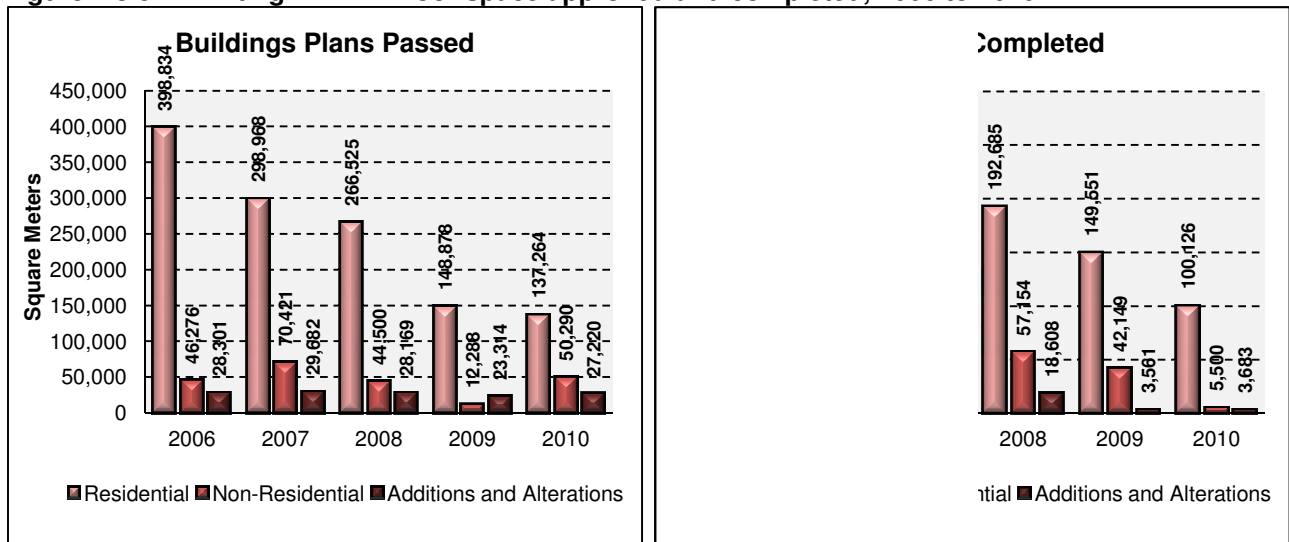
Tables 2.3 and 2.4 illustrate building plans passed and buildings completed for residential and non-residential uses within the Kungwini Local Municipal Area between 2006 and 2010.

Table 2.3: Kungwini LM Residential Building Plans Passed and Completed, 2006 to 2010

	Plans Passed					Buildings Completed				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Dwelling Houses	811	706	519	349	338	555	733	652	556	289
Flats	60	83	391	-	0	-	59	18	41	8
Townhouses	590	495	302	533	45	121	864	295	338	9
Other	4	1	1	1	0	-	-	-	-	1
Total	1 465	1 285	1 213	883	383	676	1 656	965	935	307

Source: Demacon Ex. Stats SA, 2011

Figure 2.3 & 2.4: Kungwini LM Floor space approved and completed, 2006 to 2010



Source: Demacon Ex. Stats SA, 2006 to 2010

Findings: (Table 2.3)

- ✓ In terms of building plans passed, it is evident that the residential market within the local municipal area has experienced a relatively cyclical growth trend between 2006 and 2010.
- ✓ Dominant categories of building plans passed are vested in dwelling houses and townhouse categories
- ✓ The average annual number of residential building plans passed between 2006 and 2010 is **1 045.8 units**.
- ✓ In terms of residential buildings completed, it is evident that the local municipal area also experienced a cyclical movement in construction moving between 307 units and 1 656 units per annum.
- ✓ The average annual number of residential buildings completed between 2006 and 2010 is **907.8 units**.

Table 2.4: Kungwini LM Non-Residential Building Plans Passed and Completed, 2006 to 2010

	Plans Passed					Buildings Completed				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Office & Banking Space	14 059	2 016	17 023	-	5 068	1 187	10 860	11 343	6 583	2 382
Shopping Space	23 861	33 832	21 599	1 448	685	3 903	5 191	43 065	20 753	0
Industrial & Warehouse Space	-	10 781	4 196	8 168	36 665	-	-	-	13 237	0
Total	37 920	46 629	42 818	9 616	42 418	5 090	16 051	54 408	40 573	2 382

Source: Demacon Ex. Stats SA, 2011

Findings: (Table 2.4)

In terms of non-residential building plans passed the following is evident:

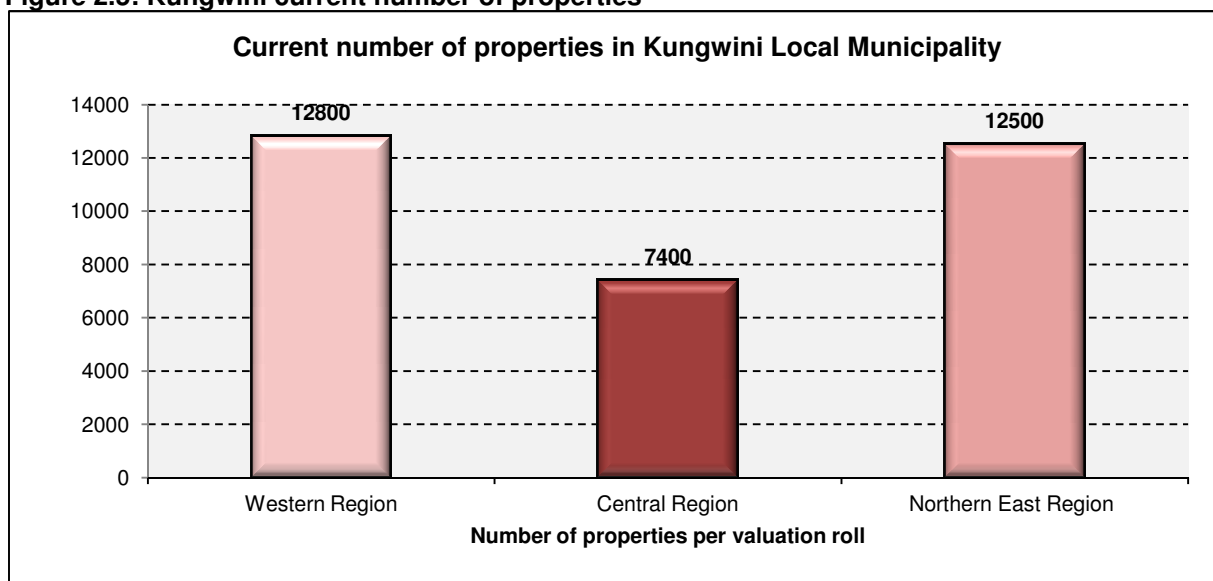
- ✓ Average annual building plans (2006 to 2010) were approved for:
 - ✓ 7 633.2m² office and banking space
 - ✓ 16 285m² retail/shop floor space
 - ✓ 11 962m² of industrial and warehousing space.
- ✓ It is evident that the retail sector is outperforming the office and industrial sectors within the local municipal area with reference to building plans passed
- ✓ Building plans passed for commercial floor space averaged at 35 880m² per annum over this time period.

In terms of average annual non-residential buildings completed (2006 to 2010) the following is evident:

- ✓ 6 471m² of office floor space has been completed
- ✓ 14 582m² of retail / shop floor space has been completed
- ✓ 6 618m² of industrial and warehouse space has been completed
- ✓ It is evident that moderate levels of growth have been recorded in the commercial market between 2006 and 2010, commercial floor space completions averaged at 23 700m² per annum.

2.6.3 Kungwini Western Region current number of properties¹

Figure 2.5: Kungwini current number of properties



Source: Demacon Ex. Kungwini Valuation Roll 2010

¹ Kungwini Status Quo SDF Report, 2011

Findings: (Figure 2.5)

- ✓ The above figures derived from the Valuation Roll data base only reflect registered formal erven. Informal settlements and farming areas which make up a large percentage of the population, are yet to be captured into the data base.
- ✓ The Western Region of Kungwini Local Municipality has high growth potential due to its proximity to Tshwane and its access to services. The up-market western suburbs of Silver Lakes and Mooikloof play a major role in the local economy of Kungwini.
- ✓ The 2010 estimates by the infrastructure co-ordinator for Kungwini indicate that the highest population and greatest number of structures in the Western Region are in Silver Lakes.

Development Implications

Overall it is evident that approximately **1 045 residential building plans are passed per annum within the Kungwini Local Municipal Area**, resulting in the **construction** of approximately **907 residential units** (excluding government subsidised housing). The amount of non-residential floor space approved and built is also indicative of low levels of commercial development pressure within the market area.

Kleinfontein falls within the **West Region of Kungwini Local Municipal** area. Population growth over the 2001 to 2009 period has resulted in the high growth of 52% for the West Region. The very **high population growth** in the West Region is due to the **new residential developments** occurring adjacent to the Tshwane and Ekurhuleni municipal boundaries. The Kungwini West region has been identified as a development concentration area and should be regarded as a **residential nodal area**. The Western Region of Kungwini Local Municipality has **high growth potential** due to its proximity to Tshwane and its access to services. The up-market western suburbs of Silver Lakes and Mooikloof play a **major role in the local economy of Kungwini (now part of Tshwane)**.

2.7 SYNTHESIS

Summary of Characteristics of Metsweding District:

- ✓ District characterised by three dominant urban areas – Bronkhorstspuit, Cullinan and Rayton
- ✓ 80% of land focused towards agricultural activities – emphasis on areas to the north and south
- ✓ Relatively concentrated economic land use base
- ✓ The bulk of the major business activities occur in Silver Lakes, Bronkhorstspuit town, Roodeplaats, Cullinan and to a limited extent in Rayton
- ✓ Tourism opportunities vested in the development of the Dinokeng Project – Roodeplaats Dam as well as Bronkhorstspuit Dam
- ✓ Dominant Industrial Node vested in Ekandustria
- ✓ Demand for high and low income residential developments
- ✓ High density development zones vested within the district boundaries include; Bronkhorstspuit and Bronkhorstspuit Dam, Ekandustria, Cullinan/Refilwe, Rayton and Steve Bikoville
- ✓ External pressures from Tshwane and Ekurhuleni Borders – High-income and low-income residential developments, rural residential development and industrial development pressures.

Development Implications for Kleinfontein:

- ✓ From the spatial analysis it is evident that Kleinfontein falls within the West Region of Kungwini Local Municipal area. Population growth over the 2001 to 2009 period has resulted in the high growth of 52% for the West Region. The very high population growth in

the West Region is due to the new residential developments occurring adjacent to the Tshwane and Ekurhuleni municipal boundaries.

- ✓ The proximity of the “economic hub” of Gauteng to the west of Kungwini is resulting in the strong growth of the western part of Kungwini. The Kungwini West region has been identified as a development concentration area and should be regarded as a residential nodal area. Very low levels of disposable income is evident in this sub-region and make sustainable development difficult. The main economic sectors currently contributing to local GDP are manufacturing, services, finance and trade.
- ✓ Business/Commercial activities within the area can be categorised as very limited. The bulk of the major business activities happen in Silver Lakes, Bronkhorstspuit town, Roodeplaar, Cullinan and to a limited extent in Rayton. Due to increased development pressure on the periphery of these towns, there is great demand for the development of new centres in these peripheries. These centres have the ability of becoming major centres and thus competing with the traditional urban centres.
- ✓ In conclusion, the district is divided into two distinct areas - the areas south of the N4, Bronkhorstspuit, Zithobeni, Ekandustria, Ekangala and rural areas to the North-East are predominantly characterised by higher LSM profiles, compared to the remainder of areas north of the N4. Given the location of Kleinfontein the area reflects moderate to high living standards. It is anticipated that this in conjunction with moderate population densities will result in moderate to high demand densities, resulting in high development potential within this area.

Building Plan Data

Overall it is evident that approximately **1 045 residential building plans are passed per annum within the Kungwini Local Municipal Area**, resulting in the **construction** of approximately **907 residential units** (excluding government subsidised housing). The amount of non-residential floor space approved and built is also indicative of low levels of commercial development pressure within the market area.

Kleinfontein falls within the **West Region of Kungwini Local Municipal** area. Population growth over the 2001 to 2009 period has resulted in the high growth of 52% for the West Region. The very **high population growth** in the West Region is due to the **new residential developments** occurring adjacent to the Tshwane and Ekurhuleni municipal boundaries. The Kungwini West region has been identified as a development concentration area and should be regarded as a **residential nodal area**. The Western Region of Kungwini Local Municipality has **high growth potential** due to its proximity to Tshwane and its access to services. The up-market western suburbs of Silver Lakes and Mooikloof play a **major role in the local economy of Kungwini**.

The above assessment, contextualised by the regional economic overview discussed in Chapter 3, should enable management to make informed decisions regarding future development prospects and investment options pertaining to Kleinfontein and proposed market components. The following chapter provides an overview of economic trends within a macro as well as a local context.

CHAPTER 3 ECONOMIC PROFILE

3.1 INTRODUCTION

An intricate, though well-defined relationship exists between the economy and urban real estate markets. The performance of specific economic sectors serves as proxy for the performance of these real estate markets. The purpose of this chapter is to outline the salient features of the market area economy (reference is made to ***Metsweding District Economy and Kungwini Local Economy***) in terms of selected time series economic indicators; most notably the economic profile and growth trends within the local economy.

As such, this chapter provides insight into the composition and stability of the local economy and hence, provides a more comprehensive assessment of medium- to long-term investment prospects than the conventional demographic analysis.

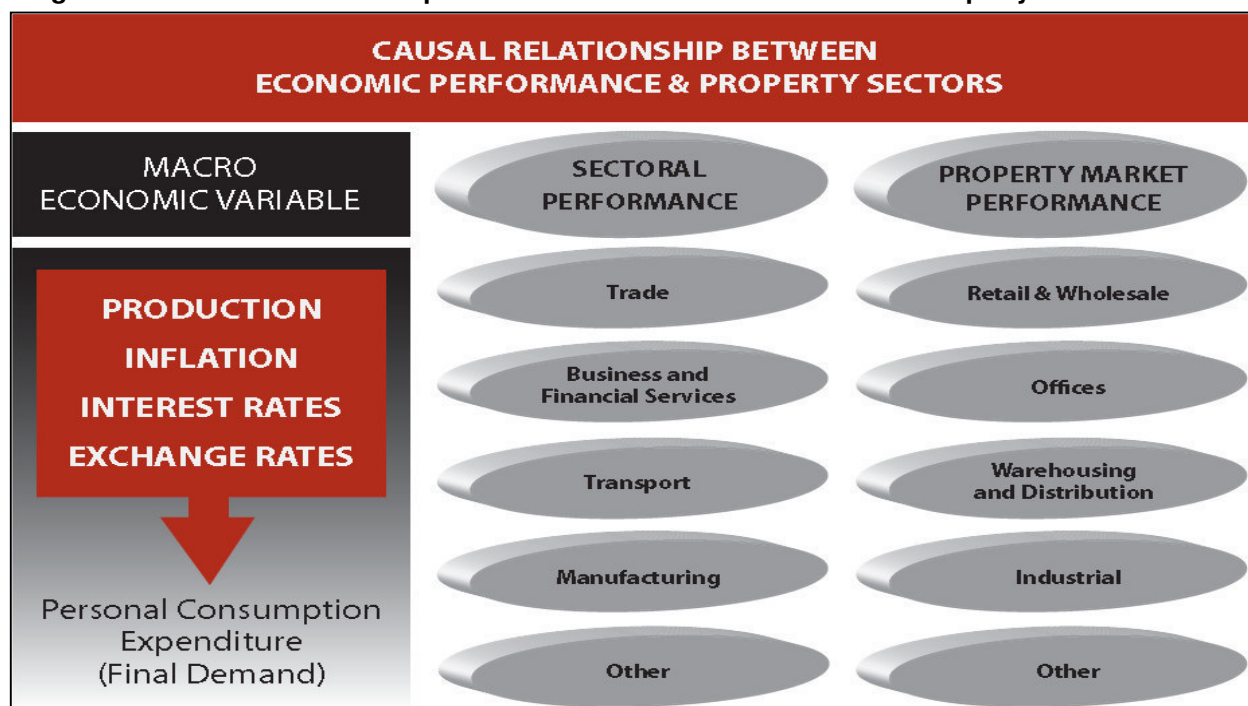
Subsequent sub-sections provide a concise overview of the local economy in terms of the following aspects:

- | | |
|------------------------------|-------------------------|
| ✓ Reference Framework | ✓ Local Economic Trends |
| ✓ Macroeconomic Fundamentals | ✓ Synthesis |

3.2 REFERENCE FRAMEWORK

The causal relationship between economic sector performance and property market performance is illustrated in Diagram 3.1.

Diagram 3.1: Causal Relationship between Economic Performance and Property Sectors



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Indicators such as production, inflation, interest rates and exchange rates influence Personal Consumption Expenditure (PCE). PCE is a major demand driver for a broad spectrum of

economic goods and services, including retail and accommodation. Gross Geographic Product (GGP), in turn, serves as leading indicator for property market performance.

3.3 MACRO-ECONOMIC FUNDAMENTALS

In terms of broad macroeconomic trends, the following are some of the dominant trends regarding the national economy and the impact of macroeconomic indicators on the property sector.

Table 3.1: Macroeconomic Fundamentals

Trend	Short to medium term implications
<ul style="list-style-type: none"> ✓ 2012 economic growth forecast - GDP to average 3.1% between 3.4% ✓ Rising food and fuel prices (exacerbated by a weaker ZARUSD), together with a pick-up in core inflation, leaves us expecting inflation to breach the 6% target ceiling through Q4 11-Q3 12 but base effects and a commodity price cycle losing steam means we are confident that by Q4 12 CPI should be back in the 3-6% target range. ✓ It is expected that the ZAR to remain relatively resilient given that it is not suffering from the same volatile cocktail of large trade deficits, collapsing commodity prices and sharp portfolio outflows that triggered the more dramatic 2008/09 weakening. ✓ The domestic economy is forecast to expand at a rather modest 3.6% rate in 2011, with a gradual acceleration in the growth momentum anticipated in subsequent years. Consumer spending will be the main contributor to economic growth in 2011, whilst fixed investment activity is forecast to pick up from 2012 onwards, led by the public sector. ✓ Current prime interest rates (9.0%) 	<ul style="list-style-type: none"> ✓ Trends in house prices remained mixed in the middle segment of the South African housing market ✓ Nominal year-on-year house price growth improved further in the medium-sized category in September 2011, with price deflation still slowing down in the small segment. In the category for large houses, price growth has been on a declining trend since May last year, which is indicative of the market for these type of properties feeling the effect of economic trends, the state of household finances and lower consumer confidence. Month-on-month price trends remained subdued in all three segments of housing in September. ✓ Strong demand from growing black middle class ✓ Foreign demand for South African property remain buoyant
<ul style="list-style-type: none"> ✓ After rising markedly in the first half of the 2010, nominal and real house price growth slowed down in the third quarter of the year, driven by base effects as well as recent economic developments. ✓ Nominal house price growth of about 7% was recorded for 2010, with 2011 price growth to remain low. Real house price growth in 2011 will depend on nominal price trends as well as consumer price inflation. 	<ul style="list-style-type: none"> ✓ The affordability of housing improved as a result of developments with regard to interest rates, household income and house prices during this period. This is according to the latest trends in the ratios of house prices and mortgage repayments to household disposable income. ✓ Stabilisation in house prices reflect positive increase in residential demand, inducing increased fixed capital formation in residential property
<ul style="list-style-type: none"> ✓ Annual reductions in transfer duties on property as from 1 March 2006 – no transfer duty payable on property valued at R500 000 and less ✓ Abolition of stamp duty on mortgage bonds from 1 March 2004 	<ul style="list-style-type: none"> ✓ Higher real disposable income ✓ Increase in household expenditure, with emphasis on middle and lower income groups
<ul style="list-style-type: none"> ✓ Growth in real disposable income tapered off to 	<ul style="list-style-type: none"> ✓ The lower growth in household income and

Trend	Short to medium term implications
<p>an annualised rate of 4,1% in the 2nd quarter of the year from 5,4% in the 1st quarter, while growth in real final consumption expenditure slowed down to an annualised rate 3,8% in the 2nd quarter (5,2% in the preceding quarter).</p> <p>✓ The ratio of household debt to disposable income was down from 76,8% in the 1st quarter of the year to 75,9% in the 2nd quarter.</p>	<p>consumption was partly the result of increasing inflationary pressures, affecting consumers' purchasing power.</p> <p>✓ Reflecting these developments on the household sector front, including continued tight labour market conditions, consumer confidence was on average lower in the first three quarters of 2011 compared with a year ago.</p>
<p>✓ The ratio of outstanding household mortgage debt to disposable income came to 44,8% in the 2nd quarter of 2011, down from 45,7% in the 1st quarter.</p> <p>✓ This was the net result of growth in household mortgage debt of 0,2% quarter-on-quarter (q/q) and nominal disposable income growth of 2,1% q/q in the 2nd quarter.</p> <p>✓ The cost of servicing household mortgage debt as a percentage of disposable income was marginally lower at 4% in the 2nd quarter from 4,1% in the 1st quarter.</p>	<p>✓ This was due to the growth of household mortgage debt and disposable income, leading to a lower mortgage debt-to-income ratio, while the mortgage rate was stable at 9% in the 1st and 2nd quarters of the year.</p> <p>✓ The ratio of households' mortgage debt to total debt was at a level of 59,1% in the 2nd quarter of 2011.</p>

3.4 Q 4 2011 SA QUARTERLY PERSPECTIVES – ABSA CAPITAL²

- ✓ 2012 economic growth forecast - GDP to average 3.1% between 3.4%
- ✓ The composition of economic growth will remain consumer-heavy for some time longer and emphasise that although the fall in Q3 consumer confidence is certainly something to keep an eye on, supporting fundamentals (high wage settlements, manageable inflation and low-for-longer policy rates) should keep consumer spending afloat.
- ✓ In the near term, Q3 and Q4 GDP growth will be critical to monetary policy decision-making
- ✓ Rising food and fuel prices (exacerbated by a weaker ZARUSD), together with a pick-up in core inflation, leaves us expecting inflation to breach the 6% target ceiling through Q4 11-Q3 12 but base effects and a commodity price cycle losing steam means we are confident that by Q4 12 CPI should be back in the 3-6% target range.
- ✓ It is expected that the ZAR to remain relatively resilient given that it is not suffering from the same volatile cocktail of large trade deficits, collapsing commodity prices and sharp portfolio outflows that triggered the more dramatic 2008/09 weakening.
- ✓ The domestic economy is forecast to expand at a rather modest 3.6% rate in 2011, with a gradual acceleration in the growth momentum anticipated in subsequent years. Consumer spending will be the main contributor to economic growth in 2011, whilst fixed investment activity is forecast to pick up from 2012 onwards, led by the public sector.

	2011				2012F				2011F	2012F	2013F
	Q1	Q2	Q3	Q4F	Q1F	Q2F	Q3F	Q4F			
GDP (% q/q)	4.5	1.3	1.3	2.9	3.8	4.2	4.4	4.3	3.1	3.4	4.2
CPI (%)	3.9	4.6	5.6	6.1	6.1	6.2	6.2	5.9	5.0	6.1	5.6
Repo (eop %)	5.50	5.50	5.50	5.50	5.50	5.50	5.50	6.00	5.50	6.00	7.50
Prime (eop %)	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.50	9.00	9.50	11.00
USD/ZAR (avg)	7.00	6.79	7.05	7.45	7.20	7.05	7.00	7.10	7.10	7.10	7.50

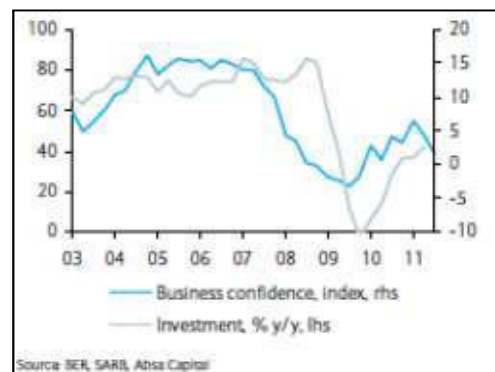
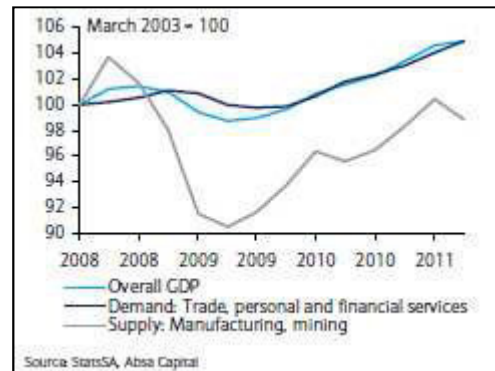
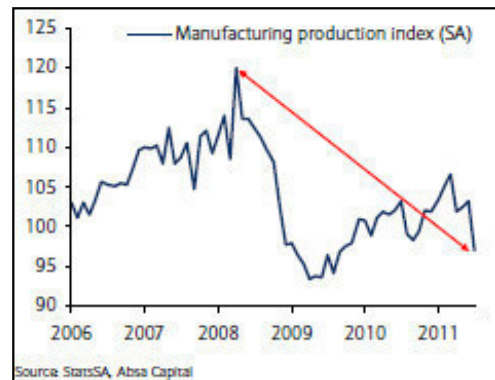
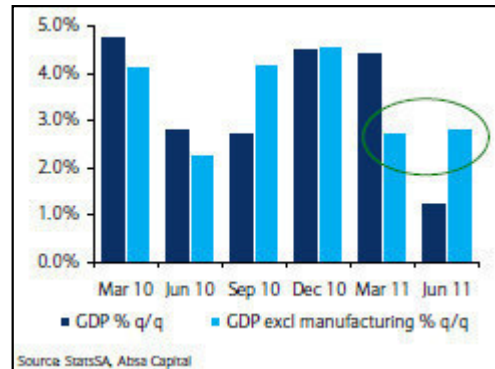
Source: Absa Capital

² Source: Absa Capital, September 2011: 2011Q4 South Africa Quarterly Perspective

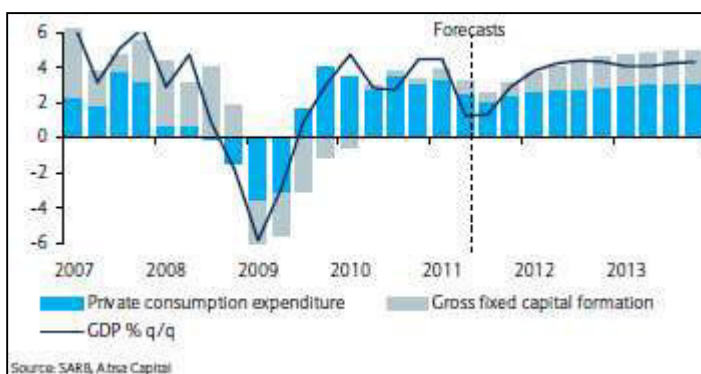
3.4.1 GDP – EARLY SIGNS OF MORE EVENNESS

GDP – global downside risks return

- ✓ Economic indicators in the first half of 2011 were a bit of a mixed bag. Economists cheered as Q1 GDP grew by a robust 4.5% q/q yet when the gains from a manufacturing sector heading off a low base are stripped out, underlying GDP actually measured a more modest 2.8% q/q.
- ✓ Similarly, newspaper headlines lamented that the economy only grew by 1.3% q/q in Q2, yet again, if the manufacturing sector were excluded, underlying Q2 GDP would have measured a better 2.8% q/q.
- ✓ Underlying GDP aside, the low headline Q2 GDP print rocked sentiment and, together with data releases that have so far disappointed to the downside for Q3, a period of sluggish growth now seems likely for the quarters ahead.
- ✓ A key culprit to keep an eye on is the manufacturing sector. Not only has this sector already been very volatile in recent quarters but its exposure to slowing global demand means that it is one of the first sectors likely to lose growth momentum.
- ✓ So far in Q3, things are looking bleak. The PMI sunk well below 50 in July and August and manufacturing production contracted by a significant 13.6% 3m/3m saar in July. It is also concerning that the growth momentum in July mining production fell by a significant 22.8% 3m/3m saar.
- ✓ Though mid-year industrial action likely had a negative influence in both sectors, this explanation is unlikely to account for the full contraction.
- ✓ With the mining and manufacturing sectors accounting for just over 20% of overall GDP
- ✓ Any further declines in these sectors would be a major drag on Q3 economic growth and as a result, it should not be surprising that risks to H2 11 GDP growth are tilted more to the downside than the upside.
- ✓ Despite a fall in Q2 business confidence (to below its neutral level), the most recent quarter of investment measured stronger than expected (4.1% q/q from 3.1% q/q in Q1).
- ✓ Positives aside, there is concern for Q3 investment given the relatively strong link between investment in machinery and equipment (which has been a prominent driver of overall investment growth so far this year) and the growth momentum in manufacturing production.
- ✓ While at the same time, the recent weakening in the currency may also deter imports of machinery and equipment for investment purposes, particularly as the SARB stated this as a key reason for the pick-up in investment in Q2.
- ✓ Adding to Q3 investment woes, another sharp decline in Q3 business confidence (to 39 from 48) suggests that any further improvement in investment growth will be hard fought.



- ✓ According to Absa Capital, no matter which way you cut it, economic growth still depends largely on the state of the consumer and even more so since the supply side of the economy (such as the mining and manufacturing sectors) took a worrying step back in Q2.
- ✓ Alongside robust growth in demand led sectors (retail trade, financial and personal services) Q2 consumption continued to push economic growth along, growing at a relatively buoyant 3.8% q/q.
- ✓ The contribution was broad-spread across most categories of consumer spending though durable goods spending did slow from 21.5% q/q (Q1) to 12.5% q/q (Q2), a loss of momentum but still double-digit growth.
- ✓ All said and done, a saving grace for GDP is that consumer fundamentals remain supportive and intact. Even though Q3 consumer confidence tumbled to 4 points and must be watched closely, high wage settlements, manageable inflation and low policy rates should be enough to sustain consumption expenditure.
- ✓ What's more, relatively steady growth in household credit signals that consumers are willing to carry on spending, corroborated by reports from clothing retailers that sales growth remains relatively robust.
- ✓ Overall consumption is forecasted to grow at a relatively robust rate of 4.3% in 2011 and 4.6% in 2012
- ✓ Altogether, Absa forecast GDP to grow by 1.3% q/q and 2.9% q/q in Q3 11 and Q4, printing a full-year figure of 3.1% for 2011. For 2012 our baseline forecast is for GDP of 3.4%.



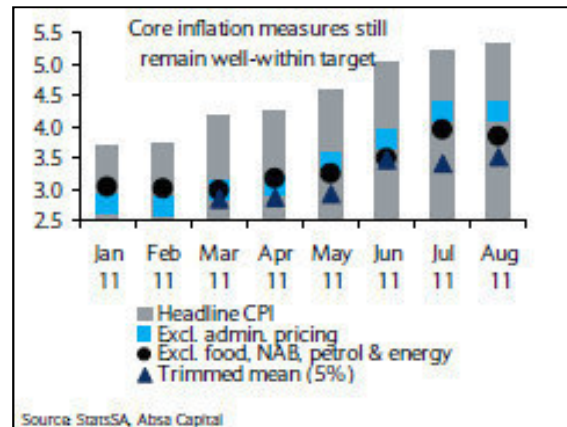
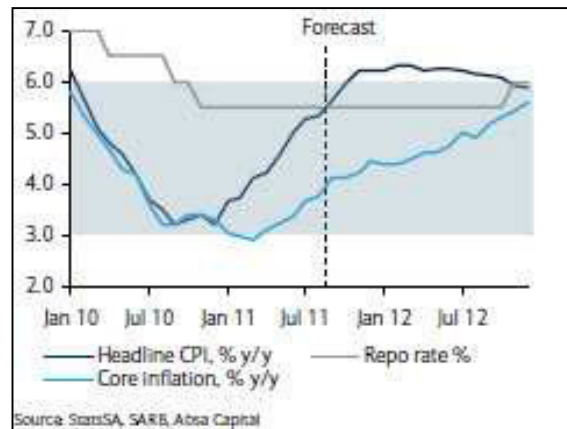
3.4.2 CPI INFLATION – ABSA CAPITAL³

Rates: Tolerating inflation as growth slows

- ✓ Headline CPI troughed at 3.2% y/y in September 2010 and has since climbed to 5.3% y/y in August 2011. While exogenous factors – food and fuel – have been mostly responsible for the rise thus far, a more recent development within consumer inflation is a more marked pick-up in core inflation (CPI excluding food, non-alcoholic beverages, fuel and energy).
- ✓ In August, core inflation measured 3.8% y/y after remaining at a low 3.1% through H1 11.
- ✓ Contributions to core inflation have been relatively broad-based with more than two-thirds of the core inflation basket now rising at a quicker rate than a year ago.
- ✓ By year-end Absa expect this to rise to 4.0-4.5% y/y, which seems reasonable given that consumption growth is expected to sustain at 4.3% in 2011.
- ✓ Food inflation is now anticipated to be somewhat stronger than we had previously thought, peaking around 12% in Q1 12 and persisting for a bit longer (above CPI until Q3 12). Still, Absa continue to believe that this food price cycle will be more muted than the food price spike in 2006-08.
- ✓ Firstly, demand is growing at a slower pace than the 2006-08 cycle and secondly, food retailers inform our view that the pass-through of rising manufacturing food inflation is more difficult in this cycle. Also important is the fact that a much lower weight for food in the CPI basket this time around means that food price inflation is unable to contribute as forcefully to overall CPI as it did in 2006-08.

³ Source: Absa Capital, July 2011: 2011Q3 South Africa Quarterly Perspective

- ✓ For fuel, global oil prices remain around the 110 mark for the rest of 2011 which, together with the recent bout of ZAR weakness, should leave petrol prices around 33 cents/litre higher by year-end and thereby contributing just over 1pp to our year-end CPI forecast of 6.2% y/y.
- ✓ A 15% depreciation in the USDZAR since June 2011 and upward revision to our year-end USDZAR (to 7.40) has forced a small upward move to our year-end CPI forecast to 6.1% y/y (from 6.0% y/y previously) but critically, because of substantial lags between ZAR moves and the pass-through to CPI, a higher projection for the entire 2012 inflation trajectory.
- ✓ Absa now look for CPI to remain outside the target ceiling for a bit longer (averaging 6.2% y/y between Q4 11 and Q3 12) but still believe that inflation will taper back within the 3-6% target range from Q4 12 (due to a combination of base effects and commodity price inflation running out of steam).
- ✓ The 'delicately balanced' inflation outlook the SARB presented in both its July and September MPC statement proves to us just how big a downside risk the global backdrop has become.
- ✓ Even though recent USDZAR weakness will certainly pass through to the inflation trajectory over the coming months, as long as it does not experience further substantial weakness, we continue to believe that monetary policy decisions will be guided by the health of the economy.
- ✓ There is certainly room to move policy rates lower if necessitated by a further economic slump. Not only has this already been priced into the local rates markets, but following a dovish MPC statement in September (and outcome that the repo rate would remain unchanged at 5.5%), the Governor made mention in the Q&A session that further rate reduction was a considerable part of the MPC's discussion and one MPC member argued strongly for a rate cut.
- ✓ Ending off the statement, the Governor asserted that the SARB is ready to act appropriately if the need arises. Considering the current GDP projections at the SARB, it is not evident that policy rates are restrictive of economic growth. Put in context, Absa's 2011 GDP forecast of 3.1% practically matches the view of the SARB (3.2%) and as a result, we infer that Q2 11 and Q3 11 GDP growth would have to surprise our forecasts (1.3% q/q and 2.2% q/q) quite considerably to deem further rate reduction necessary.
- ✓ Absa continue to believe that the SARB will be more responsive to downside growth risks than to upside inflation risks and as such, that policy rates stay unchanged at 5.5% for longer runs the risk of moving in the direction of a cut should GDP deteriorate more than we are expecting.

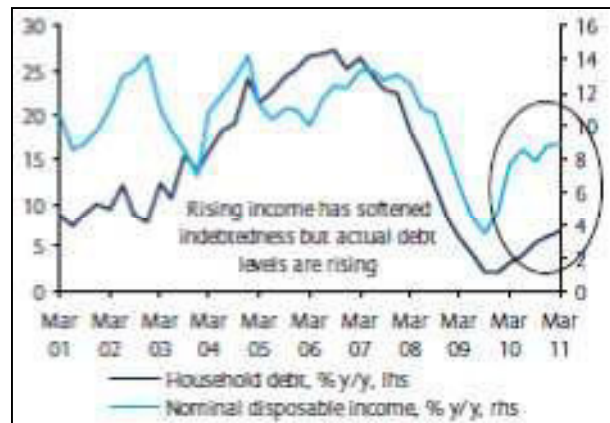


3.4.3 HOUSEHOLD CONSUMPTION

Consumption to sustain but watch for vulnerabilities

- ✓ As the backbone of economic growth in South Africa, household consumption (making up about 60% of GDP) remains the central impetus to domestic demand. This is uneven trend that has persisted since the economy rose out of recession.

- ✓ So far in this cycle, rising real income levels (owing to low inflation and high wage settlements) and low policy rates (easing debt-servicing costs in the consumer pocket book) have been the primary drivers of consumption.
- ✓ Household consumption managed to grow by 5.2% q/q saar in Q1 11, and continues to be helpful to demand-led sectors such as retail trade, financial services and personal services which, as the graph shows are pulling along overall GDP growth.
- ✓ High frequency data in Q2 provides evidence of this: retail sales growth remains steady (proving particularly strong in April at 9.8% y/y) amidst still modest household credit growth (though at unremarkable levels).
- ✓ With debt levels still rising, rate hikes are likely to have a larger impact than before.
- ✓ Despite vulnerable consumer metrics, the factors that enable consumers to spend justifies why current household consumption should sustain (at just below the 5% growth through 2011 and 2012).
- ✓ Inflation is set to rise, food and fuel prices will increase further, but at a slower rate than the 2006-08 cycle while domestic conditions (though improving) are still not strong enough to create a strong impetus for underlying inflation.
- ✓ Disposable incomes should continue to grow around the 5% mark in 2011 and 2012.
- ✓ Policy rates are indeed forecasted to rise it is said that the SARB will be looking for a level of normalisation (taking real rates to a 'neutral level' which is neither too restrictive nor too accommodative) this should limit the magnitude of rate hikes, leaving household consumption sustained and supportive to the medium-term economic growth trajectory.
- ✓ Absa Capital expect consumption to remain supportive to GDP, its momentum is likely to slow in the second half of the year as real income growth tapers off and awareness builds that a rate hiking cycle is looming.
- ✓ For this reason it is critical that consumption 'hands off' its current growth momentum to the supply side of the economy.



The new Economic Growth Path: Focus on Employment

Everyone agrees on the need to generate many more jobs, but finding common policy ground remains elusive. Economic Development Minister Patel unveiled the government's New Growth Path (NGP) blueprint for South Africa recently. Unlike earlier strategic plans such as the Growth, Employment and Redistribution (GEAR) strategy and Accelerated and Shared Growth Initiative (Asgisa), which focussed on lifting economic growth, the NGP puts job creation at the centre of government policy making. Through a combination of coordinated macro- and microeconomic policies, supported by a social pact between the main role players in the economy, the government hopes to create around five million jobs by 2020 and reduce the unemployment rate from 25% currently to about 15%.

Though much detail is yet to be released, the NGP targets six main areas for job creation. Infrastructure is given a prominent position, both in its ability to directly create jobs through construction (particularly housing), the provision of equipment, through operation and maintenance, but also by helping to reduce bottlenecks that have restrained growth and employment elsewhere in the economy. Agriculture, both in terms of smallholder schemes for those working the land in terms of agro processing are highlighted as important ways of creating employment in rural areas.

The promotion of mining is sought, with a particular focus on increased beneficiation as a way of encouraging fabrication and not just smelting, through the introduction of targeted export taxes, and through the setting up of a state-owned mining company to co-exist with the private sector. The manufacturing sector too is discussed, as is tourism and, of course, public sector employment. Just as critical as the actual ideas and policies are for the success of the NGP, any successful implementation will require generating the necessary buy-in within the various factions within the ANC, between the

ANC's political partners, and from business and from civil society. Once the discussion moves from the overview of where jobs might be created, to the micro and macro framework that would support the NGP, things become much more difficult.

Already in the micro policy in the NGP that calls for a national consensus on wages, prices and savings to help ensure greater employment and less inflation. For the labour movement, any discussion of constraining workers wages is a no go areas, as made very clear by Cosatu, whilst any move to constrain the wages of executives is seen as generating a threat of further brain drain by BUSA. Similar conflicts have already emerged with regard the NGP call for a more activist monetary policy designed not only to maintain low inflation but to also ensure a low cost of capital (i.e. low interest rates) and a more interventionist policy against rand strength – all of which is popular - with the space for this easier monetary policy provided by a tighter fiscal policy – which is not.

3.5 COMPOSITE BUSINESS CYCLE INDICATORS – SARB, November 2011⁴

The composite **leading business cycle indicator decreased by 0,3 per cent in September 2011 compared with the preceding month**. Five of the ten component time series that were available for September 2011 decreased, while five increased. The major negative contributors to the movement in the leading indicator in September were the number of residential building plans passed and the twelve-month percentage change in the composite leading business cycle indicator of South Africa's major trading-partner countries. The largest positive contribution came from the twelve-month percentage change in the number of new passenger vehicles sold, followed by the prices of all classes of shares traded on the JSE.



The **composite coincident business cycle indicator** increased by 0,9 per cent in August 2011 compared with the preceding month.

The **composite lagging business cycle indicator** decreased by 2,0 per cent in August 2011 compared with the preceding month.

Table 3.2: Composite Business Cycle Indicators

Description	Oct 2010	Nov 2010	Dec 2010	Jan 2011	Feb 2011	March 2011	April 2011	May 2011	June 2011	July 2011	Aug 2011	Sept 2011
Leading indicator (2000=100)	130.1	129.7	132.6	134.6	136.2	134.4	133.7	131.4	135.5	133.5	130.5	130.1
Coincident indicator (2000=100)	144.2	145.9	148.8	149.1	150.3	150.7	152.0	151.6	152.5	150.7	150.8	
Lagging indicator (2000=100)	00.9	99.0	97.9	97.8	98.9	99.7	98.9	98.8	100.5	100.0	97.9	

Source: SARB, October 2011

The latest Leading Indicator (a good indicator of near term moves in both the economy as well as the residential mortgage market) data point to appear, that of September 2011, indicated a further acceleration, on a month-on-month basis - the value going to a current value of 130.1

Composite leading business cycle indicator

The following 12 components are included in the composite leading business cycle:

- ✓ Job advertisement space in the Sunday Times newspaper: Percentage change over twelve months
- ✓ Number of residential building plans passed for flats, townhouses and houses larger than 80m²
- ✓ Interest rate spread: 10-year government bonds less 91-day Treasury bills

⁴ Source: South African Reserve Bank, 22 November 2011: Composite Business Cycle

- ✓ Index of prices of all classes of shares traded on the JSE
- ✓ Real M1 money supply (deflated with CPI): Six month smoothed growth rate
- ✓ Index of commodity prices in US dollar for a basket of South Africa's export commodities
- ✓ Composite leading business cycle indicator of South Africa's major trading-partner countries: percentage change over twelve months
- ✓ Gross operating surplus as a percentage of gross domestic product
- ✓ Opinion survey of business confidence: Manufacturing, construction and trade
- ✓ Net balance of manufacturers observing an increase in the average number of hours worked per factory worker (half weight)
- ✓ Net balance of manufacturers observing an increase in the volume of orders received (half weight)
- ✓ Number of new passenger vehicles sold: Percentage change over 12 months.

3.6 PROPERTY MARKET PERFORMANCE

Research has shown that there is a time delay of some 6 – 18 months: i.e. response from the property market to, for example, a decrease in interest rates (a macroeconomic variable that stimulates production) becomes evident in the level of activity in the property market some 6 to 18 months after the announced interest rate decrease (Refer to Figure 3.1).

Figure 3.1: Relation between the Business Cycle and Property Markets



This section aims to provide an overview of general trends pertaining to the residential market.

3.6.1 ABSA HOUSE PRICE TRENDS 5

Growth in home values remains relatively low

Trends in house prices remained mixed in the middle segment of the South African housing market, based on the Absa house price indices for small, medium-sized and large house for which the bank approved mortgage finance. In two of the segments trends in price growth appear to be improving, while in the third segment price growth continues to slow down.

Nominal year-on-year house price growth improved further in the medium-sized category in September 2011, with price deflation still slowing down in the small segment. In the category for large houses, price growth has been on a declining trend since May last year, which is

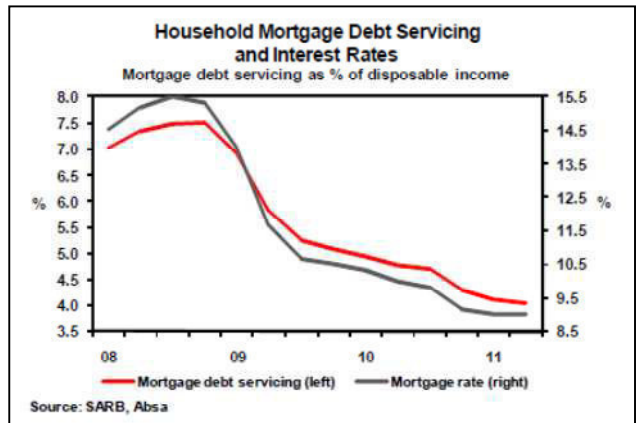
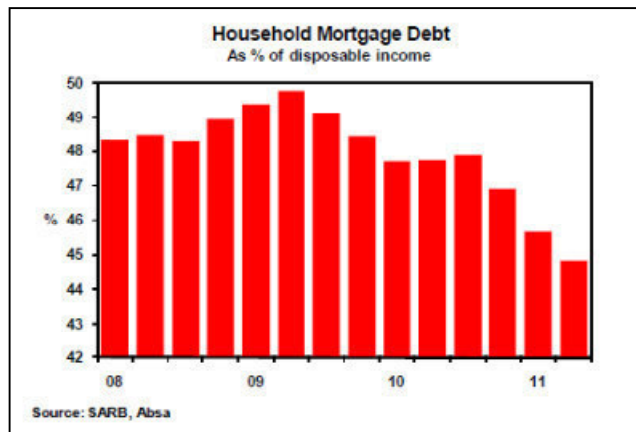
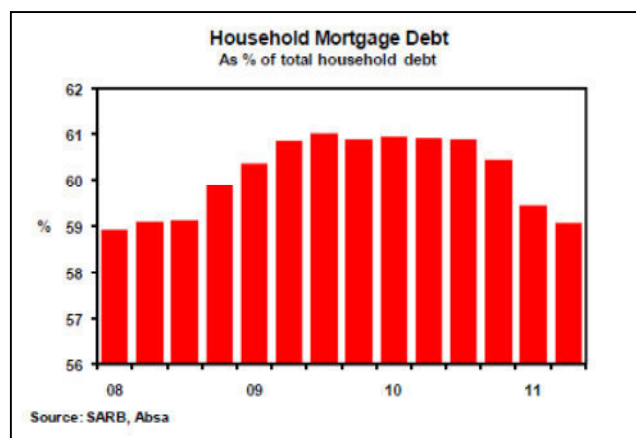
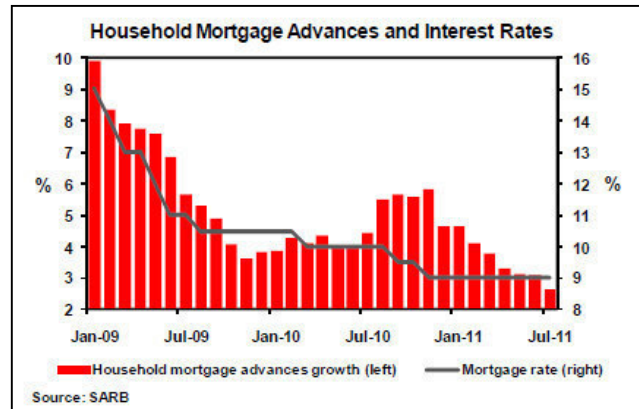
⁵ Absa House Price Indices, 6 October 2011

indicative of the market for these type of properties feeling the effect of economic trends, the state of household finances and lower consumer confidence. Month-on-month price trends remained subdued in all three segments of housing in September.

3.6.2 HOUSEHOLD MORTGAGE DEBT⁶

Latest trends in mortgage debt indicative of economic developments and state of household finances

- ✓ South Africa's real economic growth was significantly lower in the 2nd quarter of 2011 on the back of trends in global economic conditions and domestic demand, as well as labour action in some sectors of the economy during the quarter, which adversely affected production and service delivery. Real gross domestic product (GDP) increased at a quarter-on-quarter seasonally adjusted annualised rate of only 1,3% in the 2nd quarter of the year, after rising by 4,5% in the 1st quarter. Consumer price inflation continued its upward trend, reaching a level of 5,3% year-on-year (y/y) in July this year, whereas interest rates were kept stable since last cut in November 2010.
- ✓ In the household sector, growth in real disposable income tapered off to an annualised rate of 4,1% in the 2nd quarter of the year from 5,4% in the 1st quarter, while growth in real final consumption expenditure slowed down to an annualised rate 3,8% in the 2nd quarter (5,2% in the preceding quarter). The lower growth in household income and consumption was partly the result of increasing inflationary pressures, affecting consumers' purchasing power. The ratio of household debt to disposable income was down from 76,8% in the 1st quarter of the year to 75,9% in the 2nd quarter. Reflecting these developments on the household sector front, including continued tight labour market conditions, consumer confidence was on average lower in the first three quarters of 2011 compared with a year ago.
- ✓ Evident of the abovementioned trends, the residential property market continued to experience relatively tough conditions in 2011 compared with a few



⁶ Absa Household Mortgage Debt, 14 September 2011

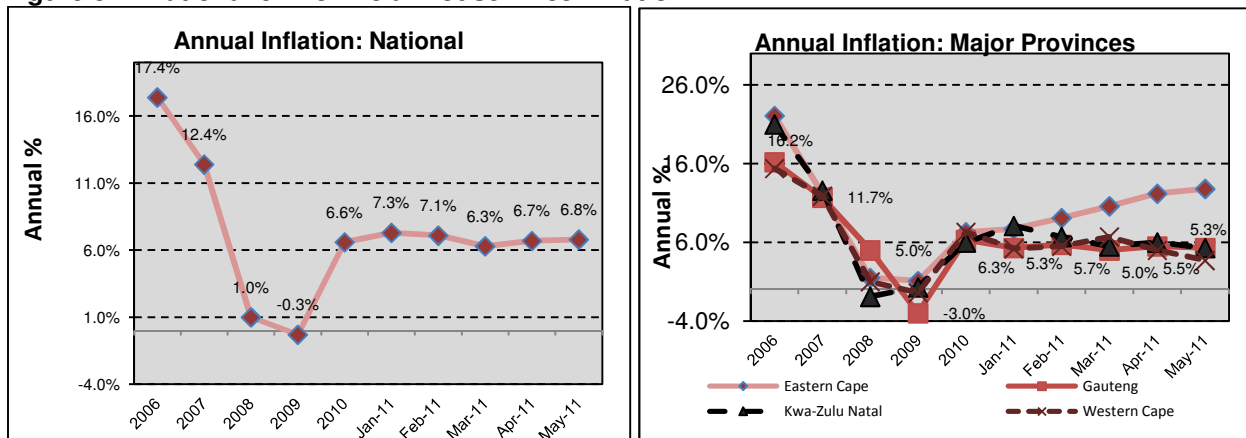
years ago. Nominal house price growth remained low in the first eight months of the year, with prices declining in real terms on the back of rising inflation. The mortgage interest rate is currently at its lowest level since the end of 1973, which resulted in monthly mortgage repayments being 33,5% lower than in December 2008 when the mortgage rate was 15,5%. Although the low interest rate is positively impacting the affordability of housing and mortgage finance, growth in outstanding household mortgage balances slowed down to less than 3% y/y up to July this year.

- ✓ This may be related to a still relatively high household debt-to-income ratio of almost 76%; many consumers having damaged credit records (8,63 million, or 46,4%, of a total of 18,6 million credit-active consumers in the 1st quarter of 2011), which impact their ability to take up credit; and a lower level of consumer confidence compared with twelve months ago.
- ✓ The ratio of outstanding household mortgage debt to disposable income came to 44,8% in the 2nd quarter of 2011, down from 45,7% in the 1st quarter. This was the net result of growth in household mortgage debt of 0,2% quarter-on-quarter (q/q) and nominal disposable income growth of 2,1% q/q in the 2nd quarter. The cost of servicing household mortgage debt as a percentage of disposable income was marginally lower at 4% in the 2nd quarter from 4,1% in the 1st quarter. This was due to the abovementioned trends in growth of household mortgage debt and disposable income, leading to a lower mortgage debt-to-income ratio, while the mortgage rate was stable at 9% in the 1st and 2nd quarters of the year. The ratio of households' mortgage debt to total debt was at a level of 59,1% in the 2nd quarter of 2011.
- ✓ Against the background of uncertain global economic conditions, a slowing domestic economy and rising consumer price inflation, interest rates are forecast to remain unchanged in the rest of 2011 and into 2012. Nominal house price growth is expected to be well in single digits for the full year and in 2012, with prices set to decline in real terms this year and next year.
- ✓ Household mortgage advances are projected to record year-on-year growth of below 10% over the next twelve to eighteen months, which is not expected to lead to a significant increase in the various mortgage debt ratios. The cost of servicing mortgage debt will be driven by the ratio of mortgage debt to income, as well as developments on the interest rate front.

3.6.3 RESIDENTIAL INFLATION TRENDS⁷

The **Lightstone National Inflation Index** reports the current **annual inflation rate of 6.83%**, up 0.5% from the 2011 low of 6.3% of March. The national **monthly inflation index is reported at 0.79%**, continuing its cautiously positive trend since June 2010.

Figure 3.2: National & Provincial House Price Inflation



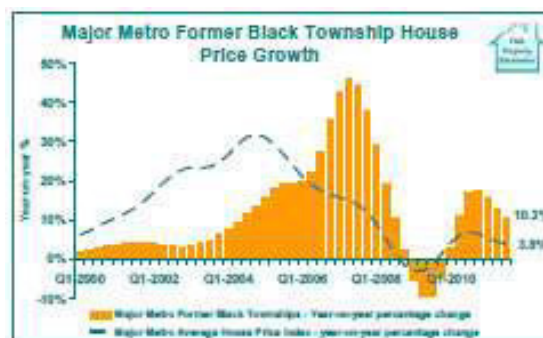
Source: Demacon Ex Lightstone, 2011

⁷ Lightstone Residential Property Indices, 28 September 2011

The **Lightstone National Inflation Index** tracks annual inflation rates of the 4 major provinces in South Africa. **Eastern Cape** boasts the most aggressive annual inflation of the major provinces at a current rate of 13.7%. **Western Cape** values are down a further 0.45% to a current rate of 3.7%. **Gauteng and Kwazulu Natal** both marginally down on last month's figures, currently 5.1% and 5.3% respectively.

3.6.4 TOWNSHIP HOUSEPRICES⁸

- ✓ The housing markets in “Affordable Areas” of the major metros (Tshwane, Joburg, Ekurhuleni, Ethekwini, Cape Town and Nelson Mandela Bay) outperformed the rest of the value bands significantly in terms of house price growth, with a portion of the financially pressured household sector searching for affordability.
- ✓ The most affordable sub-segment of the affordable part of the major metro market is the so-called “Former Black Townships”. Of the houses transacted in major metro townships, the average estimated price was R265,113.
- ✓ It would thus come as little surprise to see Major Metro Former Black Township House Price Index outperforming the rest, growing year-on-year by +10.3% in the 3rd quarter of 2011.
- ✓ This is not to say that these township markets aren't affected by the same economic cycles that other property segments are. Indeed, the 3rd quarter house price growth rate represents a slowdown from the previous quarter's revised 12.7% year-on-year growth rate.
- ✓ However, this remains significantly higher than the estimated +3.8% growth rate for house prices in the 6 major metro regions as a whole.



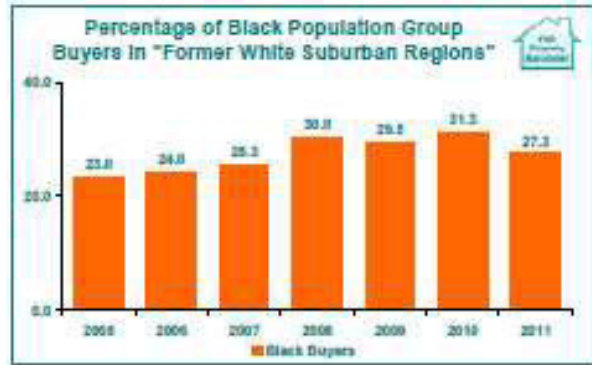
There are 4 factors that is believed to be playing a role in driving this apparent superior performance of the “Township” regions housing markets:

- ✓ Firstly, these markets didn't become as “oversupplied” during the building boom of a few years ago.
- ✓ Secondly, the transformation of the labour market continues, and this implies that off a low base the Black population group's disposable income growth has been the most rapid over a good number of years. This should imply that off a low base this group's home buying should have been growing the fastest, or in recently tougher years perhaps not slowing as rapidly as the others. Indeed, mortgage originator Ooba has pointed to a significant increase in the percentage of successful home loan applicants that are classified as Black.
- ✓ Relatively more Black home buyers doesn't necessarily mean superior Township market performance, however, because many of these buyers migrate to former white suburbs, often following their jobs to a home nearer to major business nodes. However, and this is the 3rd factor, it is just possible that the pace of this migration to the “suburbs” has slowed a little of late, perhaps due to affordability issues in some instances. A hint of this possible slowdown is seen in the FNB Estate Agent Survey, where agents surveyed in the 1st 3 quarters of 2011 have estimated Black population group buyers at a mildly lower 27.3% of total buyers, compared to 31.3% of total suburban buyers in 2010.
- ✓ Fourthly, new “Affordable Housing” developments in the vicinity of former Black Townships do often get introduced to the market at higher prices than the existing housing stock, and a significant portion of overall transactions in these newer developments can raise the average price calculated in the overall Township Index.

⁸ FNB Property Barometer: Township House Prices, 27 October 2011

CONCLUSION

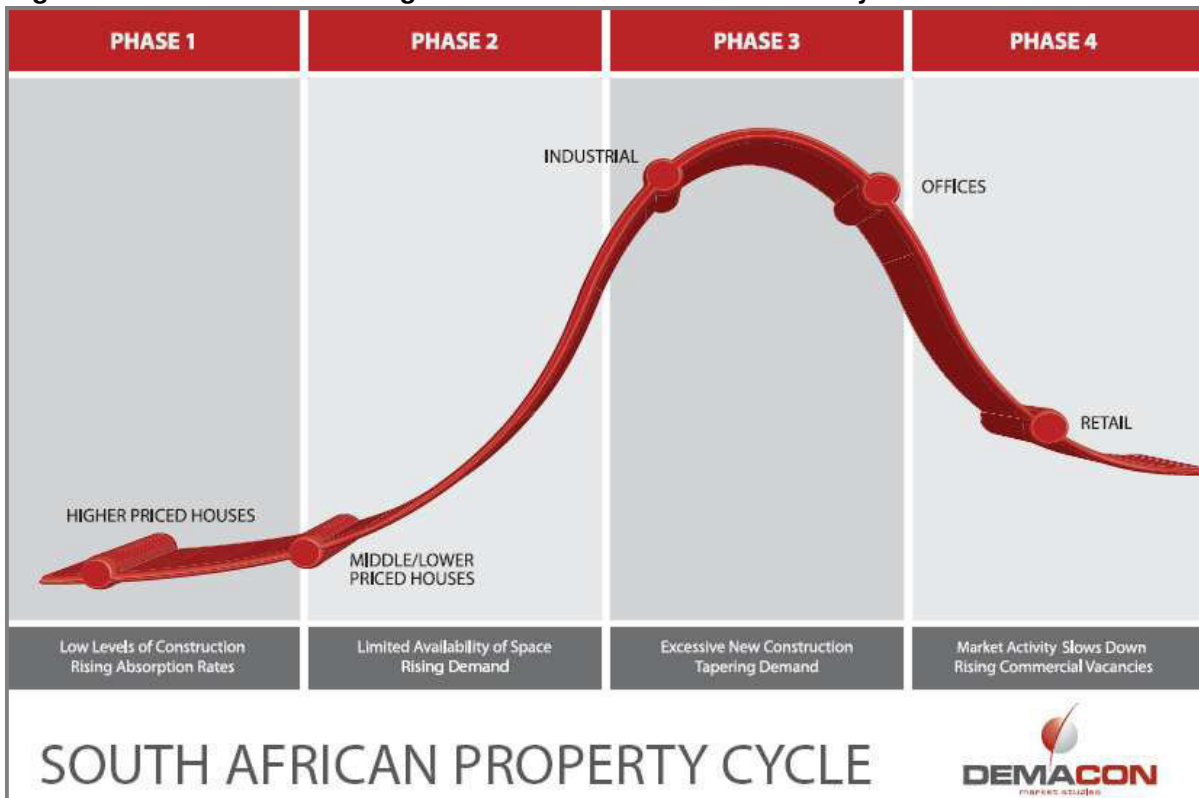
- ✓ We continue to see the former Black Township regions within the major metro areas outperforming the higher priced segments. However, these markets, too, appear to be experiencing slowing price growth as a result of interest rates flattening out in 2010 (following significant cutting) as well as some slowing in economic growth.
- ✓ The superior performance in these township housing segments should come as little surprise, given more rapid Black Population Group income growth off a lower base than the other population groups, along with the current need for affordability in a financially pressured household sector.
- ✓ In the longer term, the “townships” still need to complete their transition from dormitory towns to more mixed use regions with economies of their own. Whilst this process started a few years ago, most noticeable with infrastructure upgrades and retail centre additions, it still has a long way to run once better economic times return.
- ✓ This transition to “mixed use” is expected to greatly improve townships’ attractiveness as places of residence, and we thus believe that the long term prospects are for certain of these township regions to outperform the traditionally “more illustrious” suburban regions in terms of house price growth, off a far lower base, for some years.



3.6.5 SECTORAL POSITIONING OF SOUTH AFRICAN REAL ESTATE

The following figure (Figure 3.3) illustrates the sectoral position that each market (offices; industrial; retail and residential) occupies in the real estate cycle in South Africa, in terms of *level of activity versus time*.

Figure 3.3: Sectoral Positioning of the South African Real Estate Cycle



Retail: The effects of repeated interest rate hikes since 2006 have become visible in the latest retail sales data, and slowed down the prolific growth rates that were last seen in the 1970's. A modest retail sales recovery is expected from 2010, strengthening towards 2011 and fears of a double-dip recession have been laid to rest. In spite of the slowdown (reflected in *national* averages), numerous private sector clients disclosed to Demacon that retail sales in their mall portfolios were up between 15% and 20% in the time period from December 2007 to December 2008, and December 2008 to December 2009.

Offices: In recent years, databases, as well as brokers and real estate professionals, have noted the lack of stock in South African commercial markets, in particular the office and industrial market. Composite rental and vacancy indicators point towards notably rising stock volumes (development proposals and approved rights) and gradually rising vacancy rates in selected nodes. Many nodes with substantial amounts of proposed office rights are poised for phased take-up over the short to medium term. Gautrain Station precincts in particular, can be expected to reveal expanding commercial stock profiles.

Industrial: Similar to the office market, the industrial market has seen dramatic increases in approved rights in selected nodes and corridors. A number of new industrial and distribution parks have come on stream in major metropolitan areas and many of these developments will be poised for phased take-up over the medium to longer term. Industrial parks and hybrid business parks in well located nodes / corridors with good regionally accessible can be expected to perform well and outperform less central / off-centre industrial parks.

Independent **DEMACON** market studies, coupled with extensive network of leading real estate companies, indicate that in spite of turbulent global economic times, the domestic real estate long cycle is currently in an upswing phase and will remain at buoyant levels, despite selected sub-sectors coming under pressure due to short term cyclical trends. Market indicators suggest that the long cycle will only taper off towards 2015, which implies positive market growth conditions for most real estate sub-sectors over the medium to long term.

3.6.6 FUTURE EXPECTATIONS

The Economy

- ✓ The South African economy is forecast to grow by a real rate of around 4% per annum in 2011 and 2012, supported by expected real world economic growth of 4,3% this year and 4,5% next year (as forecast by the International Monetary Fund), as well as growth in domestic demand during this period, driven by a further steady improvement in households' financial position.
- ✓ The headline consumer price inflation rate (CPI) is expected to continue rising in the rest of 2011, reaching a level of 6% by year-end. CPI is forecast to average about 5% this year and 6% next year, driven by factors such as rising transport costs, food prices and housing operating costs.
- ✓ Against the background of these economic and inflation expectations, interest rates are projected to remain unchanged in the rest of the year, but to rise by a cumulative 200 basis points during the course of the first seven months of next year, remaining stable thereafter. This will bring prime and variable mortgage rates to a level of 11% by the end of 2012, which will affect consumers' debt repayments, and the cost and affordability of existing debt and further credit, including mortgage finance.

The Residential Property Market

- ✓ The residential property market will continue to reflect conditions in the macro economy and the household sector up to the end of the year and in 2012. Based on trends in home values in the first half of 2011, and prospects for the economy and household finances, nominal price growth in the middle segment of the market is forecast at between 1% and 2% for the full year, rising to about 4% in 2012. In consideration of the outlook for nominal price growth and the projection of consumer price inflation averaging 5% this year and 6% next year, house prices are set to decline in real terms in both 2011 and 2012.
- ✓ Taking cognisance of the state of household finances (income, saving, debt, credit records, etc.), labour market conditions, the level of consumer confidence, which was lower in the first half of the year compared with the corresponding period last year, and the prospect of rising interest rates in 2012 on the back of inflationary pressures in the economy, the year-on-year growth in mortgage finance extended to the household sector is forecast to remain in single digits up to the end of 2011 and into 2012.

The South African consumer market is also characterised by an increasingly large segment of **socially upward mobile consumers** (with the LSM 6 – 10+ segment growing at approximately 1.3% annually) – the rising black middle class with a set of very strong aspirational values. This trend holds direct beneficial implications for especially the domestic retail and residential sectors.

The following section provides an overview of local economic trends in the market area.

3.7 LOCAL ECONOMIC TRENDS

Subsequent economic indicators provide insight to the performance of **Metsweding District and Kungwini Local Economy**. The assessment serves to highlight local **growth trends** in the market. Future investment opportunities will be informed by this local assessment.

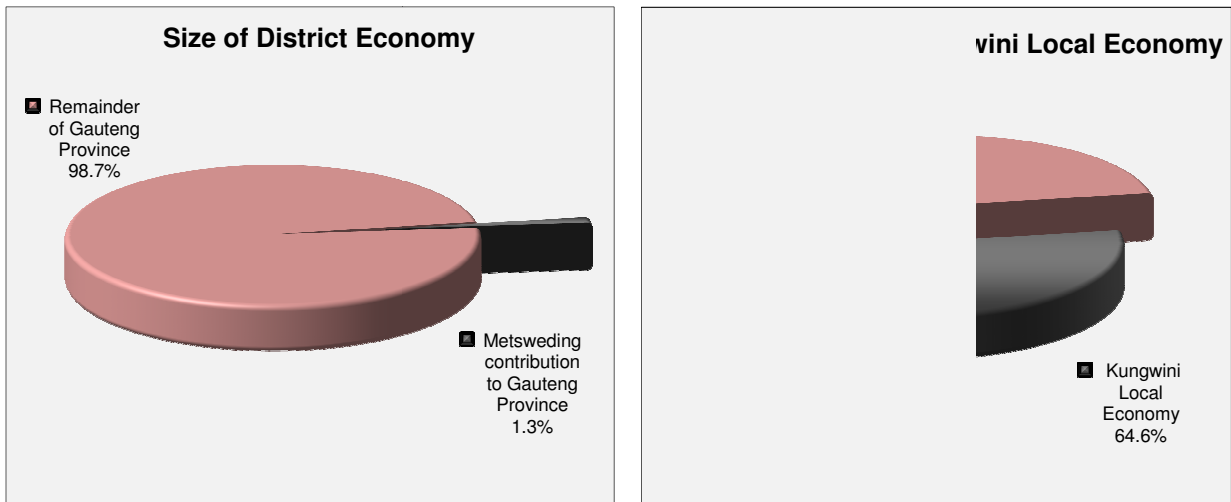
These ten sectors are:

- ✓ General government services
- ✓ Community, social and other personal services
- ✓ Finance and business services
- ✓ Transport and communication
- ✓ Trade sector (Wholesale and retail; catering and accommodation)
- ✓ Construction
- ✓ Electricity and water
- ✓ Manufacturing
- ✓ Mining
- ✓ Agriculture, forestry and fishing.

3.7.1 SIZE OF ECONOMY

Figure 3.4 indicates the size of the district economy in relation to the provincial economies, supported by an indication of the sizes of the two local economies within the district.

Figure 3.4: Size of the economy, 2010 (GVA at basic prices)

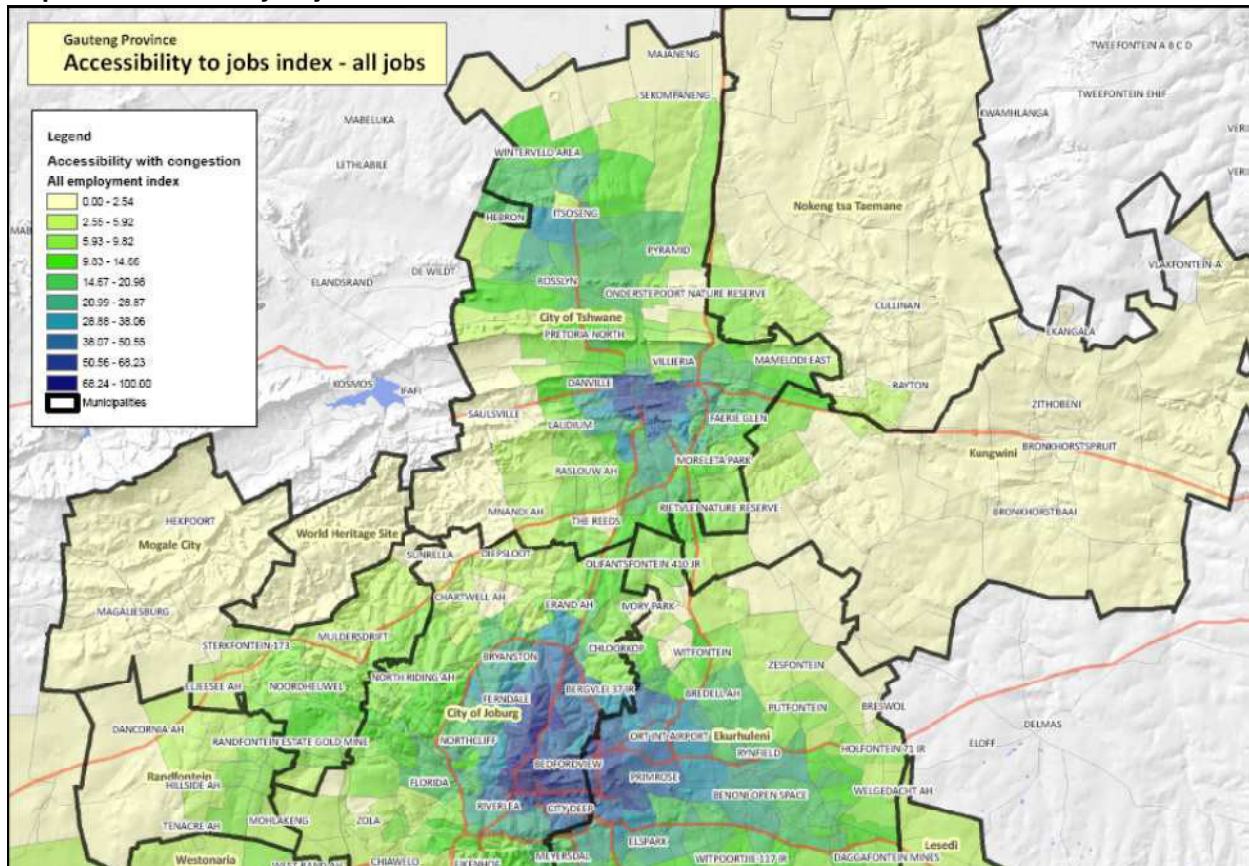


Source: Demacon Ex. Quantec, 2011

Findings: (Figure 3.4)

- ✓ Figure 3.4 indicates that the Metsweding District Economy contributed a mere 1.3% towards the Gauteng Provincial Economy in 2010 – reflecting its small economic base.
- ✓ Figure 3.4 furthermore indicates that the Kungwini Local Economy contributed 64.6% towards the district economy, compared to the 35.4% contribution of the Nokeng tsa Taemane local economy.
- ✓ This economic contribution is vested in the performance of the ten economic sub-sectors discussed in the subsequent paragraphs.

Map 3.1: Accessibility to jobs



It is evident that the dominant economic concentrations are vested towards the central areas of City of Tshwane, City of Johannesburg and Ekurhuleni. It is therefore anticipated that a large segment of the study area population travel to these dominant nodes of employment and economic opportunities.

3.7.2 ECONOMIC PROFILE

The assessment serves to highlight sub-regional **growth trends** in the market. Future investment opportunities will be informed by this sub-regional assessment. Figure 3.4 indicates the contribution of the ten major economic sectors to the total economic production of Metsweding District and **Kungwini Local Economy** for the time period 2006 to 2010.

The ten economic sectors referred to include:

- ✓ General government services
- ✓ Community, social and other personal services
- ✓ Finance and business services
- ✓ Transport and communication
- ✓ Trade sector (Wholesale and retail; catering and accommodation)
- ✓ Construction
- ✓ Electricity and water
- ✓ Manufacturing
- ✓ Mining
- ✓ Agriculture, forestry and fishing.

Table 3.4: Sectoral Performance of the District Economy, 1996 to 2010 (GVA at basic prices)

	1996	1998	2000	2002	2004	2006	2008	2010
Agriculture	3.7	3.5	3.7	3.5	3.0	2.5	2.3	2.1
Mining	19.5	15.2	8.9	7.7	6.7	5.1	3.5	2.5
Manufacturing	21.7	23.4	25.2	26.0	25.3	25.6	25.0	23.0
Utilities	2.1	1.9	1.8	1.7	1.8	1.9	1.8	1.9
Construction	3.0	2.8	3.3	3.4	3.9	4.4	5.1	5.7
Trade	9.4	10.0	12.0	11.8	12.0	12.3	12.0	11.8
Transport & communication	5.3	5.8	6.8	7.3	7.9	8.0	8.3	8.6
Finance & business serv	9.5	10.9	12.4	14.5	15.9	17.8	19.9	21.5
Community, social & personal serv	3.9	4.1	4.4	4.2	4.2	4.1	4.0	3.9
General government serv	22.0	22.2	21.5	19.7	19.3	18.4	18.0	19.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Demacon Ex. Quantec, 2011

Findings: (Table 3.4)

It is evident that the District Economy is based on five dominant pillars:

- ✓ Manufacturing – 23.0%
- ✓ Finance and Business Services– 21.5%
- ✓ General Government Services – 19.0%
- ✓ Trade – 11.8%
- ✓ Transport and Communication Services – 8.6%.

Ten kinds of economic activity are distinguished and are grouped into the three broad sectors of the economy: the primary sector, the secondary sector, and the tertiary sector. The

valuation is at basic prices and the data are provided at constant prices. Figure 3.5 shows the annual real growth in the output of different kinds of economic activity.

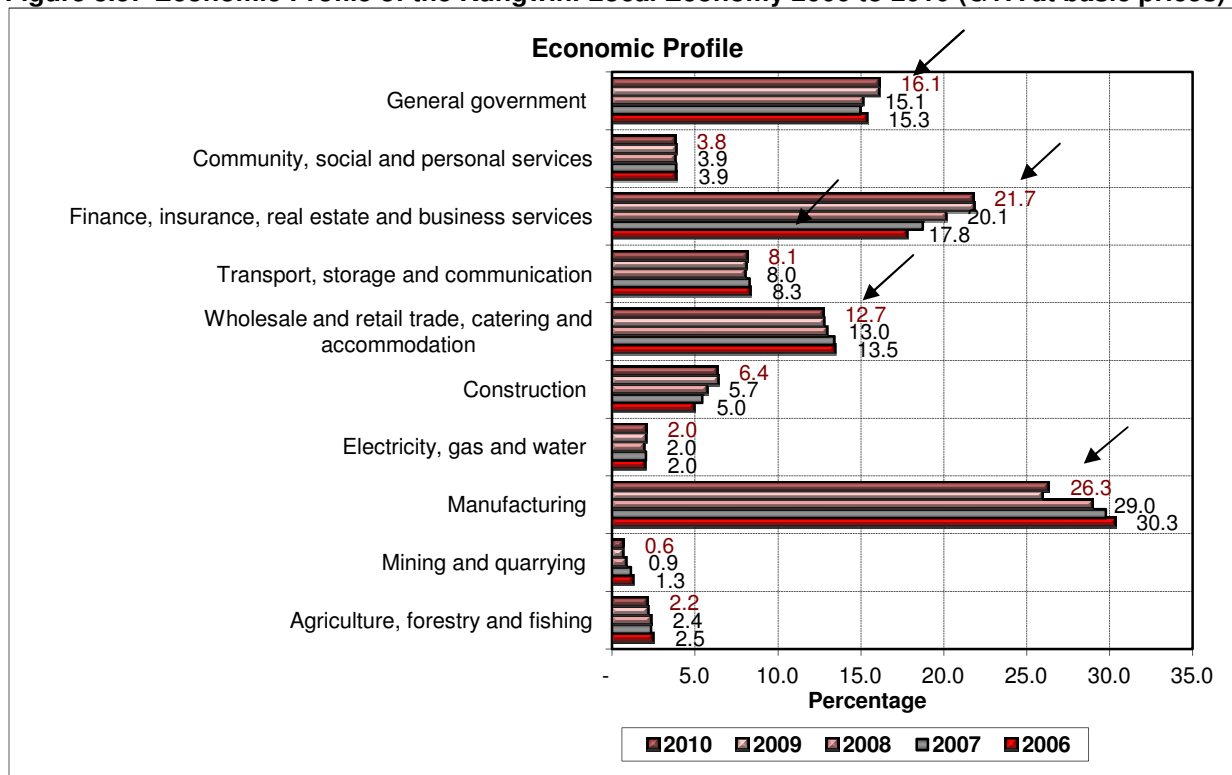
The pillars of Kungwini Local economy include: Manufacturing, Finance and Business Services, General Government Services, Trade Sector and Transport and Communication – contributing approximately **85.0%** towards the sub-region economy in 2010.

Findings (Figure 3.4)

Primary Sector:

- ✓ The real value added by the primary sector increased at a slightly slower pace in 2010 (0.1%) than in 2009.
- ✓ Growth in 2010 moderated to a still-low average annualised rate of 1.4% following a rate of decrease of no more than 1.0% from 2005. This moderation resulted from a slower rate of increase recorded in the agriculture and mining sector.
- ✓ Growth in the real value added by the agricultural sector decreased from an annualised rate of 3.0% in 2005 to 2.2% in 2010.
- ✓ The real output of the mining sector decreased from an annualised rate of 1.7% in 2005 to 0.6% in 2010. Growth in the real value added by the mining sector moderated to an average annualised rate of 1.1% between 1995 to 2010.

Figure 3.5: Economic Profile of the Kungwini Local Economy 2006 to 2010 (GVA at basic prices)



Source: Demacon Ex. Quantec, 2011

Secondary Sector:

- ✓ Growth in the real value added by the secondary sector accelerated to an annualised rate of 11.6% in 2010, following a slight increase of 0.1% from the preceding year.

- ✓ The manufacturing sector contributed to the growth in the secondary sector; as this is the only sector recording growth in 2010 when compared to the previous year.
- ✓ The real value added by the secondary sector decreased by 0.8% in 2010 when compared with 2005.

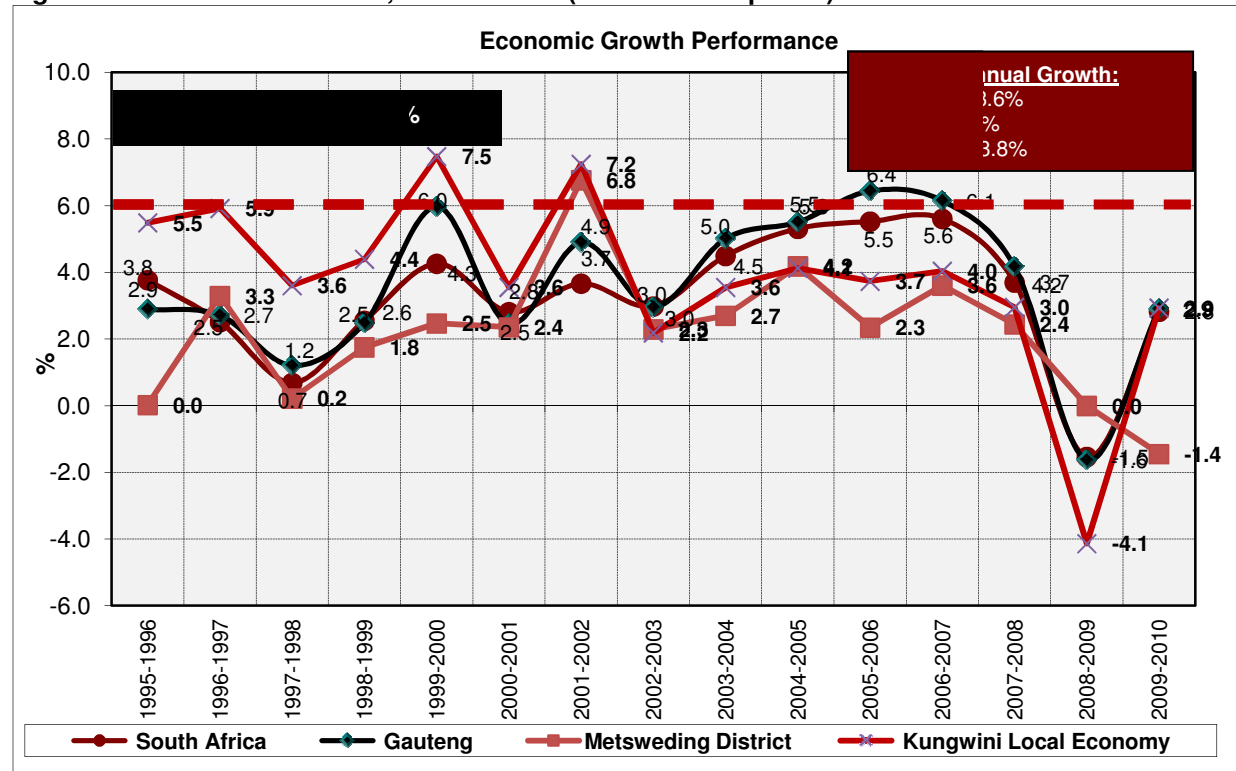
Tertiary Sector:

- ✓ The tertiary sector represent the largest sector within the local economy, with an average contribution of 12.5% in 2010
- ✓ From Figure 3.5 it is evident that this sector recorded stable growth from 2006 to 2010 with slower growth in sub sectors such as trade and community and social services.
- ✓ The Finance and Business Sector represents the largest contributing sub sector – characterised by a contribution of 21.7% in 2010
- ✓ The Government Services Sector represents the second largest contributing sub sector with a contribution of 16.0% in 2010 – the sector’s contribution increased from 15.3% in 2006.
- ✓ The Trade Sector represents the third largest contributing sub sector – characterised by a contribution of 12.7% in 2010.
- ✓ The strong performance of general government mainly reflected a recovery from the strike related lower base in 2009. Overall, the real value added by the general government sector increased by 1.0% in 2010, higher than the growth rate recorded in 2008, indicating the faster pace of increase in employment in general government.

3.7.3 ECONOMIC GROWTH

Figure 3.6 provides detail on the growth performance of Kungwini Local Economy in respect of the district, provincial and national economies between 1995 and 2010.

Figure 3.6: Economic Growth, 1995 to 2010 (GVA at basic prices)



Source: Demacon Ex. Quantec, 2011

Findings (Figure 3.6)

- ✓ The local economy reflected a similar growth trend pattern as the district economy. The local economy peaked during 1999 to 2000, 2001 to 2002, 2004 to 2005 and reached its lowest marks during 1997 to 1998, 2002 and 2003 and in 2008 to 2009.
- ✓ The long run annual growth rate of the local economy averaged at **3.8% between 1995 and 2010**. The district averaged at a slightly lower rate of 2.2% over the same period.
- ✓ The short run economic growth trend of the local economy average 1.9% from 2005 to 2010, and 1.4% for the district economy over the same period.
- ✓ The average annual growth rate of the national economy over this period (1995 – 2010) amounted to 3.3% per annum and the provincial economy amounted to 3.6% per annum.
- ✓ The stronger year-to-year (2003 – 2008) growth mainly reflected a rebound in the real value added by the secondary sector alongside stronger growth in the real value added by the tertiary sector.
- ✓ These positive contributions to economic growth were partly offset by a slower pace of increase in the real value added by the primary sector.

Development implications

- ✓ Economic growth in the sub-regional and regional economy reflects a similar cyclical trend that correlates with growth trends experienced in the SA domestic economy over the same period.
- ✓ 2012 economic growth forecast - GDP to average 3.1% between 3.4%
- ✓ The composition of economic growth will remain consumer-heavy for some time longer and emphasise that although the fall in Q3 consumer confidence is certainly something to keep an eye on, supporting fundamentals (high wage settlements, manageable inflation and low-for-longer policy rates) should keep consumer spending afloat.
- ✓ In the near term, Q3 and Q4 GDP growth will be critical to monetary policy decision-making
- ✓ The domestic economy is forecast to expand at a rather modest 3.6% rate in 2011, with a gradual acceleration in the growth momentum anticipated in subsequent years. Consumer spending will be the main contributor to economic growth in 2011, whilst fixed investment activity is forecast to pick up from 2012 onwards, led by the public sector.

3.7.4 MANUFACTURING SECTOR PERFORMANCE

- ✓ The Manufacturing sector contributed 16.8% towards the GVA of the district. Kungwini LM contributed 79.0% towards the GVA of district's manufacturing sector and Nokeng tsa Taemane 21.0%.
- ✓ Average Annual GVA growth – District 3.0% and Kungwini LM 3.0%
- ✓ Average Annual Employment growth – District 0.8% and Kungwini LM 1.0%
- ✓ Manufacturing is defined as the physical or chemical transformation of materials or compounds into new products.
- ✓ The district is characterised by a strong local Manufacturing sector, indicating the relative importance of this sector.
- ✓ Metsweding has a very small manufacturing base when compared with the remainder of the Gauteng Province. It also does not include any monitored industrial nodes.
- ✓ Manufacturing was however the largest employer in this area in 1996 in spite of the above. Approximately 100 to 150 industrial companies are located within the area.