

MIDSTREAM RIDGE

Township establishment of Midrand Estates New Extensions on the remaining portions of
the farm Olifantsfontein 410JR

Gaut: 002/11-12/E0268

Environmental Impact Assessment Process

Draft EIA Report

November 2012

Prepared by:

ENVIRONOMICS

For

Bondev ***Midrand***

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1. General introduction

This is the second application for development on this site. The previous application was done under the 2006 version of the Environmental Impact Regulations, 2006. The application was made to GDACE with the reference number: Gaut. 002/08-09/N1025. The Scoping Report and Plan of Study for EIA (POSEIA) was submitted on 30 March 2009 and approved on 28 May 2009.

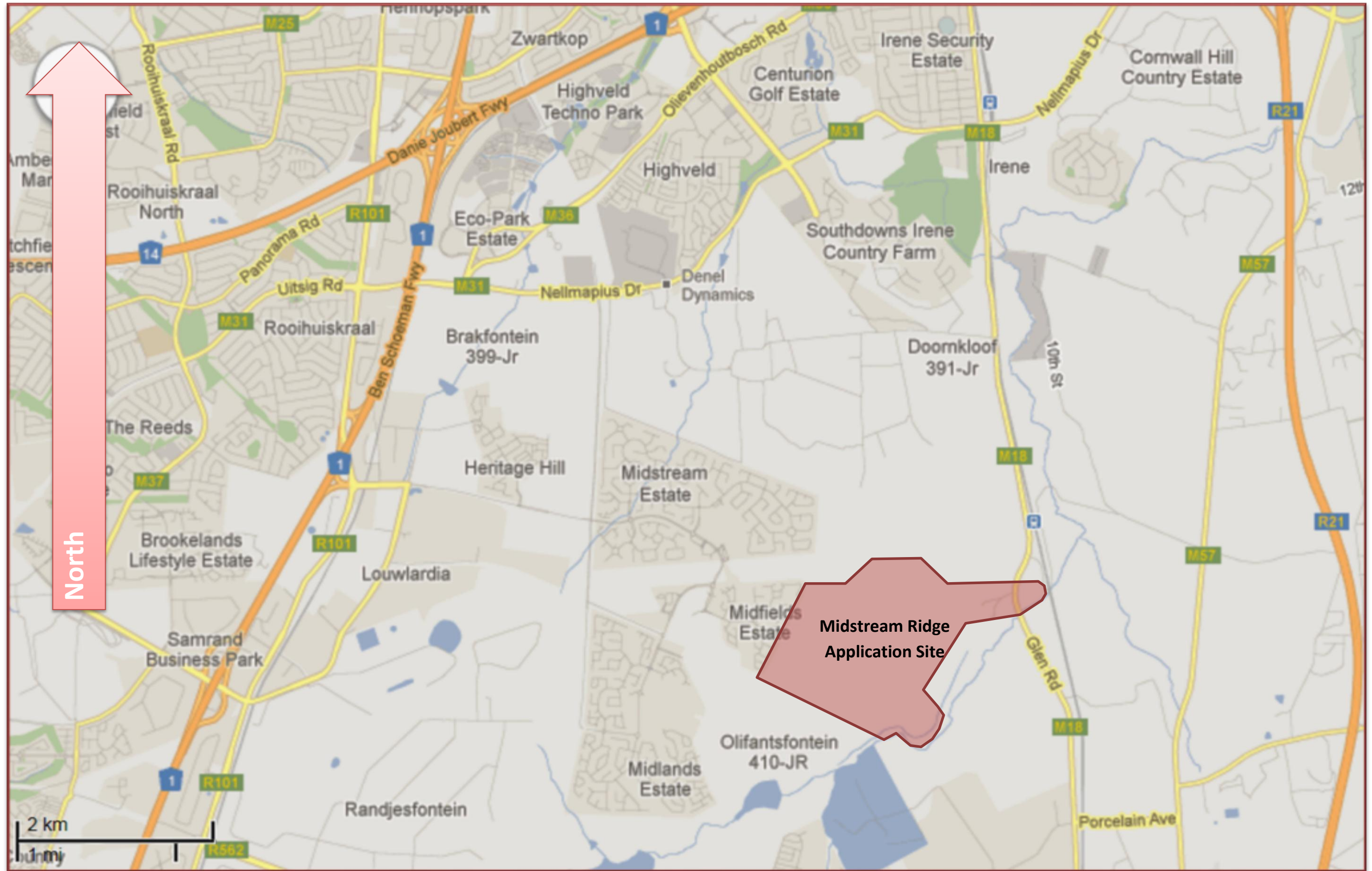
Due to the economic slowdown at the time and changes that occurred in the demand for property it was decided not to proceed with the application at the time. The risks associated with uncertainty about the economy were just too high.

The sales of available sites however continued throughout this period and by the middle of 2011 it was clear that the market for the type of property envisaged was still good and even strengthening. It was then decided to proceed with the application.

During 2010 significant changes occurred in the Environmental Impact Assessment Regulations which meant that it would not simply be a matter of picking up the initial application and continue with it. After deliberation with the competent authority, the Gauteng Department of Agriculture and Rural Development (GDARD), it was decided to start the process from scratch to ensure compliance with the 2010 version of the regulations. A new application was made to GDARD on 1 February 2012 and accepted on 21 February 2012 with the GDARD reference no. Gaut. 002/11-12/E0268.

The area of the original development proposal was also reduced from 435ha to 301ha for the current application.

Figure 1: Location of proposed new development



1.1. Tasks performed in the EIA process (post Scoping)

In accordance with the Scoping Report that was submitted the following tasks have been performed as part of the EIA process:

- Public participation
- Consultation with I&APS
- Specialist inputs required by GDARD¹:
 - Geological assessment including a detailed Geotechnical investigation;
 - Wetland delineation (confirmation of no wetlands in this instance);
 - Cultural historic assessment and comments from SAHRA (still awaiting);
 - Visual impact assessment (contained in the report itself);
 - Vegetation and flora assessment;
 - Economic factors of the development; and
 - Traffic impact assessment.
- Confirmation required from the local authority by GDARD:
 - Availability of water supply;
 - Availability of sewage infrastructure;
 - Availability of electricity; and
 - Adequate provision for stormwater including a Stormwater Management Plan.
- Specific Project Detail:
 - Assessment of potential feasible and reasonable alternatives.
- Impact Assessment:
 - Evaluation of impacts prior to mitigation;
 - Proposed mitigation measures; and
 - Evaluation of impacts after mitigation.
- An opinion from the EAP as to whether or not the activity should be authorised
- An environmental impact statement
- A draft Environmental Management Plan (EMP) for both the construction and operation phases

¹ The requirements for specialist reports were submitted in the previous Scoping Report and POSEIA, GAUT reference No. 002/08-09/N1025 pages 30 and 31. That was accepted by the then GDACE on 28/05/2009 in a letter. The specialist inputs required in this section is replicated from what was earlier accepted by GDACE. In addition the specialist studies will conform to applicable guidelines and requirements of the relevant authorities.

2. The applicant

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Midstream Estate
1692
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Fax No: (012) 661-1139
E-mail: jaz@midrand-estates.co.za
Contact person: Jan Zeederberg

3. Details of the environmental assessment practitioner

3.1. Name of the environmental assessment practitioner

Name of Company: Environomics Environmental Consultants
Postal Address: P.O. Box 400
Midstream Estate
1692
Tel No: 082 779 2262
Fax No: 086 514 7856
E-mail: paul@environomics.co.za
Contact person: Paul Claassen

3.2. Experience of the environmental assessment practitioner

Paul Claassen holds a bachelor degree in Landscape Architecture which he obtained at the University of Pretoria. He has also completed several courses including a course in Practical Techniques in Environmental Impact Assessment at the UCT Business School. He is a member of the South African Chapter of the International Association for Impact Assessment (IAIA) and a founding member of Environmental Assessment Practitioners Association of South Africa (EAPASA).

Paul has worked in the field of environmental impact management for 30 years of which 15 was for the Department of Environment Affairs (DEA) and the rest in private practice. He was intimately involved in the formulation of all stages of the environmental impact assessment regulations under both the old Environmental Conservation Act (ECA) and the current National Environmental Management Act (NEMA). Paul was involved in many EIA processes as the EAP, reviewer or evaluator over the course of his career.

4. Description of the proposed activity

The applicant envisages a low to medium density residential township with supporting community related facilities. The “preferred” alternative is described here. Other alternatives are addressed later on in the report.

4.1. The proposed layout and components of the development activity

Since the application was lodged the study area² was refined slightly (see section 5) and the layout has been developed to be more efficient. This evolution was to a large extent directly due to the interaction between the EIA process and the town planning process that interacted with each other, optimizing the proposed development in terms of both environmental and town planning efficiency and effectiveness. The outcome that is presented here is therefore regarded as the optimum layout.

The proposed development will cover an area of 293.21ha and will consist of the following components (See Map 2):

(a) Midstream Ridge Estate development (100,09ha):

- 1200 low to medium density residential stands; and
- Ancillary uses consisting of roads, stormwater drainage channels and pipes, water pipes, electricity pipes, gas pipes, gas tanks, street lightning, open space³ access control and an estate office.

(b) Mixed uses development areas⁴ (34,64ha⁵):

- Offices;
- Commercial (including postal, banking, vehicle servicing etc.);
- Retail (shops, nursery);
- Religious (churches);
- Restaurants;
- Entertainment and recreation (clubs, tennis courts, gym etc.); and

² The key objective was to include as much as possible natural open space, including that which falls within the Eskom servitude into the Midstream Ridge development where it can be protected and managed properly.

³ See detailed description of open space below that gives a breakdown for the entire application area.

⁴ 3 Areas at strategic positions to facilitate optimal use of roads infrastructure and to enhance the potential of the surrounding areas for development.

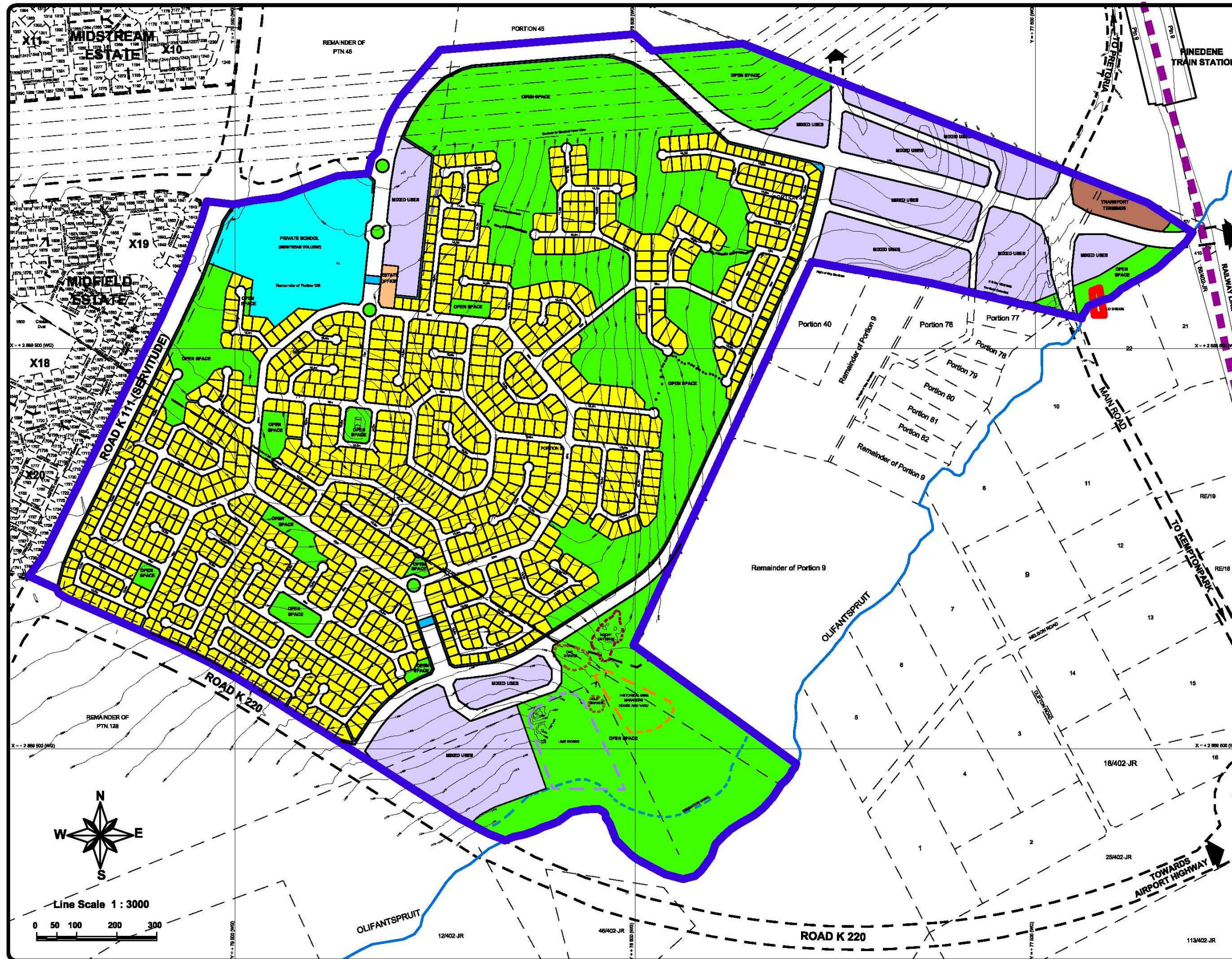
⁵ A specific area breakdown for each sub-component is not possible at this stage as it will depend on the detail site layouts of the buyers of the properties. It will also to an extent be determined by market conditions at the time of development.

- Medium to high density residential (one and two story security complexes).
- (c) Educational facilities (10.27ha):
- Private dual medium primary school; and
 - Pre-school.
- (d) Transport Terminus (1,69ha) consisting of:
- An inter-modal transfer facility between rail (via the nearby Pinedene station), taxis, busses (municipal, private and Gautrain) as well as private vehicles to serve the local area and to connect it to the region in a safe and efficient integrated transport system.
- (e) Open space (82.83ha), including:
- Natural open space within Midstream Ridge (40ha);
 - Natural open space (with possible future related facilities⁶) in the southern cultural historical precinct (27,2ha);
 - Natural open space in the Eskom servitude outside Midstream Ridge (5,2ha);
 - Conservation of 100% of C-Plan 3.3 Irreplaceable area in the north eastern corner (1,57ha);
 - Urban parks (8,18ha); and
 - Other small isolated portions of designated natural open space (0.34ha).
- (f) Conservation of important cultural historical features⁷ including:
- The Imperial Military Railways bridge (anno 1901) is the only known of its sort (design and material used) that is still surviving in the world today. The original ZAR bridge was blown up by the Boer forces during the war; and
 - Features related to an old lime quarry and kilns including the quarry, kilns, site of the old mine managers house⁸ and old graves.

⁶ Potential future related facilities include: a small chapel, toilet facilities, recreation hall and information centre (to explain the context etc. of the cultural and natural features of the site).

⁷ See Appendix 3 section c: Cultural heritage resources impact assessment on the farm Olifantsfontein 410JR.

⁸ In this context the old garden layout with a lane of trees, several unique old (although exotic) tree specimens and remnants of a water well are important as it constitutes a serene *sense of place* that can be developed/rehabilitated into a special place.



Map 1: PROPOSED TOWNSHIP MIDSTREAM RIDGE

LEGEND

- E I A BOUNDARY (293,21ha)
- LOW / MEDIUM DENSITY RESIDENTIAL WITH ANCILLARY USES (1200 UNITS) (100,09ha)
- MIXED USES (OFFICES, COMMERCIAL, RESTRICTED RETAIL, FILLING STATION, CHURCHES, ENTERTAINMENT, RESTAURANTS AND RESIDENTIAL.) (34,64ha)
- SCHOOL (10,27ha)
- ESTATE OFFICE (0,42ha)
- TRANSPORT TERMINUS (1,69ha)
- ACCESS CONTROL AND SECURITY (3,25ha)
- OPEN SPACES INCLUDING COMMUNITY RELATED USES (82,83ha)
- ROADS (69,92ha)
- WALK WAYS
- OLD BRIDGE
- HISTORICAL MINE MANAGERS HOUSE AND YARD
- IRRIGATION CANAL
- LIME WORKS
- OLD GRAVES
- ROCKY OUTCROP

Scale: 1 : 3000

DATE: AUGUST 2012

PLANDEV
Town and Regional Planners
Stade-on Streetkapanners

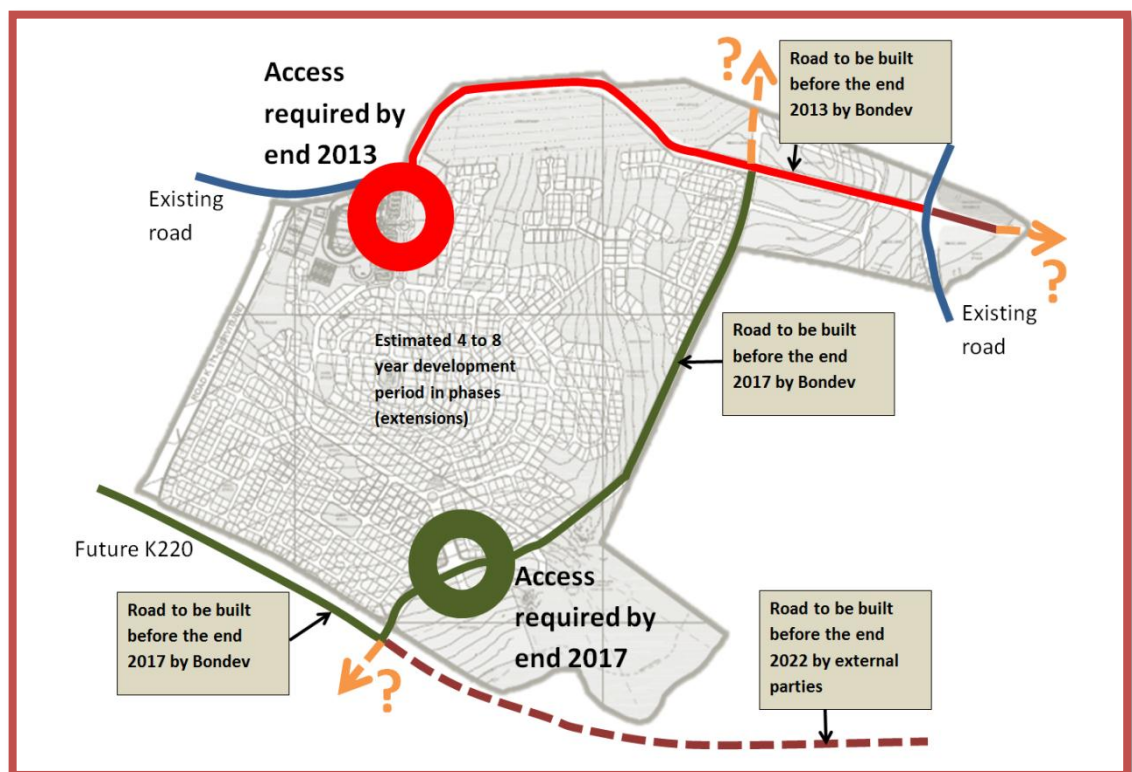
4.2. Scheduling of the proposed development

There are a number of factors that are important in the scheduling of the project, of which the most important ones are:

- (a) The market of buyers for the product to be produced

Despite a difficult property market over the last couple of years, Midrand Estates has managed to remain one of the top producers of value for money, high quality developments. Sales have again started to pick up significantly with a demand for at least 300 units (stands) of residential property per annum. That means a likely development schedule of approximately 4 years from 2014 to 2018 for Midstream Ridge, 1 year from the start of 2013 to the end of 2013 for the primary school and 8 years from 2014 to 2022 for the mixed use areas.

Figure 2: Access requirements

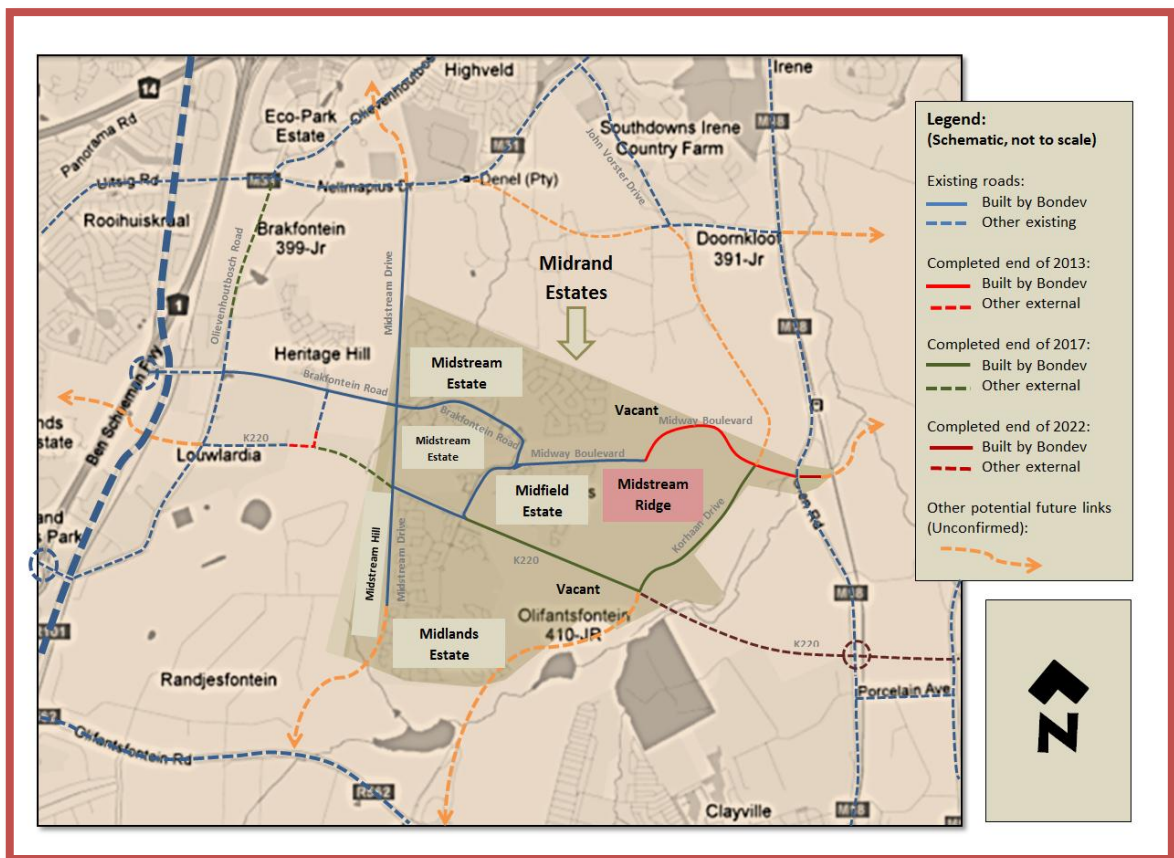


(b) The capacity of infrastructure (especially roads)

In respect to water, electricity, sewage and stormwater, adequate bulk capacity is already provided for and available within 100m of the site⁹. The traffic impact assessment indicated which roads have to be built and which intersections need to be upgraded to ensure an adequate level of service in future¹⁰.

It is important to realise that the road system in the area does not only consist of a road network but also the functioning of intersections. In this respect it is important that the municipalities and landowners/developers in the area work together to develop an optimal system for the area that takes the needs of everyone into account. The required road building schedule to which the applicant is committed is depicted schematically in Figure 3: Scheduling of road construction in the area.

Figure 3: Scheduling of road construction in the area



⁹ See Appendix 1

¹⁰ See Appendix 1 section e: Traffic Impact Study: Proposed Midstream Ridge, 2012.

(c) The available workforce to undertake the construction

The current Midrand Estates has been providing continuous work for at least 200 building contractors and their teams over the last 10 years. It is a major employer in the area and it is therefore important that the transition from one extension to the other happens as smoothly as possible in order to preserve the construction employment opportunities.

The same is true for engineering construction of services and roads where a highly skilled workforce has been established over the last 10 years. With the addition of new technologies such as piped gas and large scale use of LED lights, additional skills will be developed and be maintained for a period of at least another ten years.

The maintenance and further development of employment opportunities in the construction industries remains a key consideration in the scheduling of the proposed development.

(d) The new school

The development will include a new dual medium primary school. Due to a complete lack of new government schools being developed in the wider area, there is an acute need for additional private schools in the wider area. The current Midstream College that includes a primary and secondary school has been highly successful in providing education opportunities for residents of Midrand Estates and beyond. For the primary school there are currently long waiting lists. The proposed development will include a new dual medium primary school. It is planned that the school must open during January 2014 in order to provide the relief demanded by the local communities.

The school will employ approximately 50 teaching staff, 10 administrative staff and 15 support staff. It is very important to schedule the start of the school correctly to enable timely recruitment of staff and provision for building and equipping the school in time for the first intake of pupils.

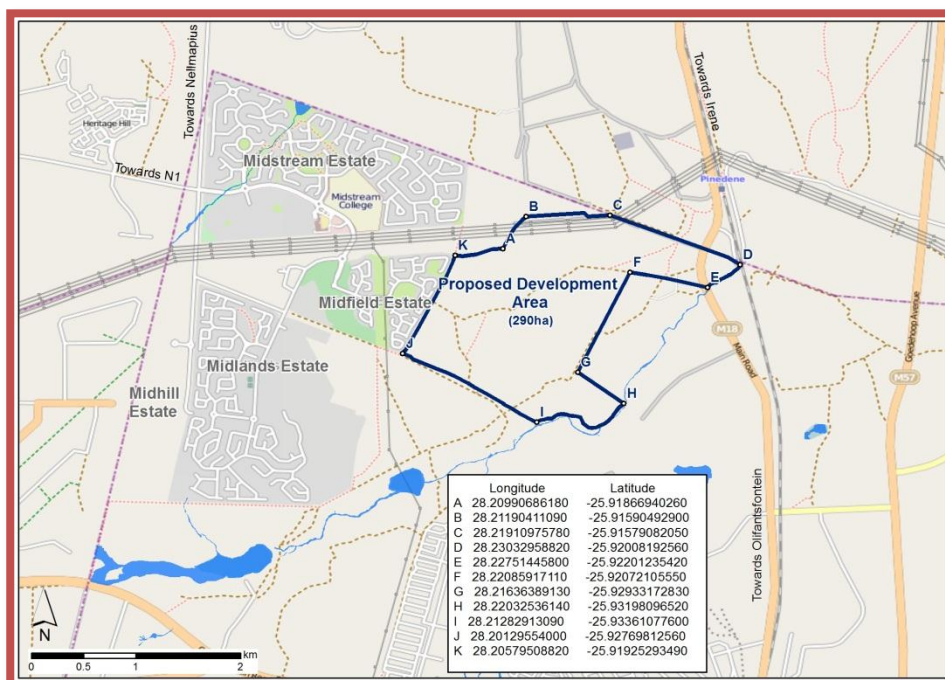
5. Description of the property

The development (listed activity) is proposed on Portion 35, a Portion of Portion 39, a Portion of Portion 48, a Portion of Portion 128 and the remainder of Portion 34 of the Farm Olifantsfontein 410JR. It is situated within the municipal jurisdiction of the Ekurhuleni Metropolitan Municipality (EMM) in the Gauteng Province.

The property is 300.12ha in extent and falls within the coordinates listed below (also see Map 1: Location):

	Longitude	Latitude
A	28.20643426160	-25.91660360480
B	28.21910975780	-25.91579082050
C	28.23032958820	-25.92008192560
D	28.22751445800	-25.92201235420
E	28.22085917110	-25.92072105550
F	28.21636389130	-25.92933172830
G	28.22032536140	-25.93198096520
H	28.21282913090	-25.93361077600
I	28.20129554000	-25.92769812560
J	28.20584889450	-25.91909070690

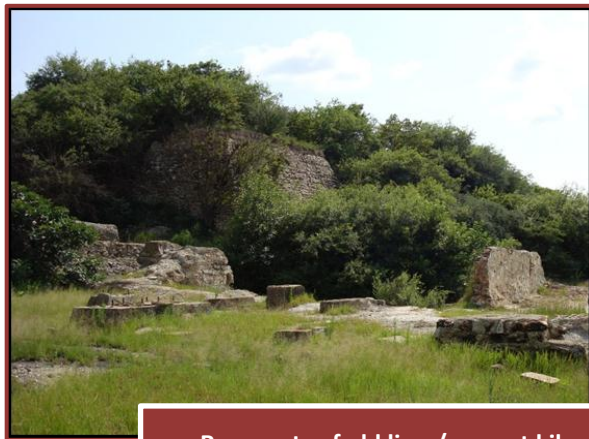
Figure 4: Application site



The study area forms part of the greater Midrand Estates and is situated directly east of Midfield Estate in Ekurhuleni. The proposed north-south K111 Provincial Road alignment forms the western boundary of the proposed development site and the proposed east-west K220 Provincial Road forms the southern boundary of the proposed development site. The northern boundary of the power line servitude forms the northern boundary of the proposed development site. It must be noted that **the section of the K111 road that fall within the proposed development area does not form part of this application** as it should be applied for together with the rest of the road if and when Gautrans decides to develop it sometime in future.

The north-eastern corner of the proposed development area is traversed by the existing M18 Road (P38-1) which runs parallel to the R21 National Road and links Clayville Industrial Area with Irene Township. It is proposed that access to the township will be provided via a link road from Brakfontein Road and the M18 Road (P38-1).

Two short sections of the Olifantspruit forms the boundary of the site in the north-eastern and south-eastern parts of the proposed development area. The rest of the eastern boundary is made up out of adjacent vacant and farm land.



Remnants of old lime/sement kilns

The proposed development area is zoned as “agricultural” in the Peri Urban Town Planning Scheme of 1975.

The study area is vacant with no residents currently residing on the property. There are several remnants of previous occupants. Mining and agricultural related activities were previously exercised on the site.

6. Description of the environment

6.1. Introduction

This description of the environment gives an overview. For more information see Appendix 3: Specialist Studies and Inputs should be consulted.

6.2. Climate and rainfall

There is a weather station at Midrand Estates. The climate and rainfall information for the area is summarised in the figure and table below. It is representative of the Highveld in every respect. More details are contained in Appendix 3c.

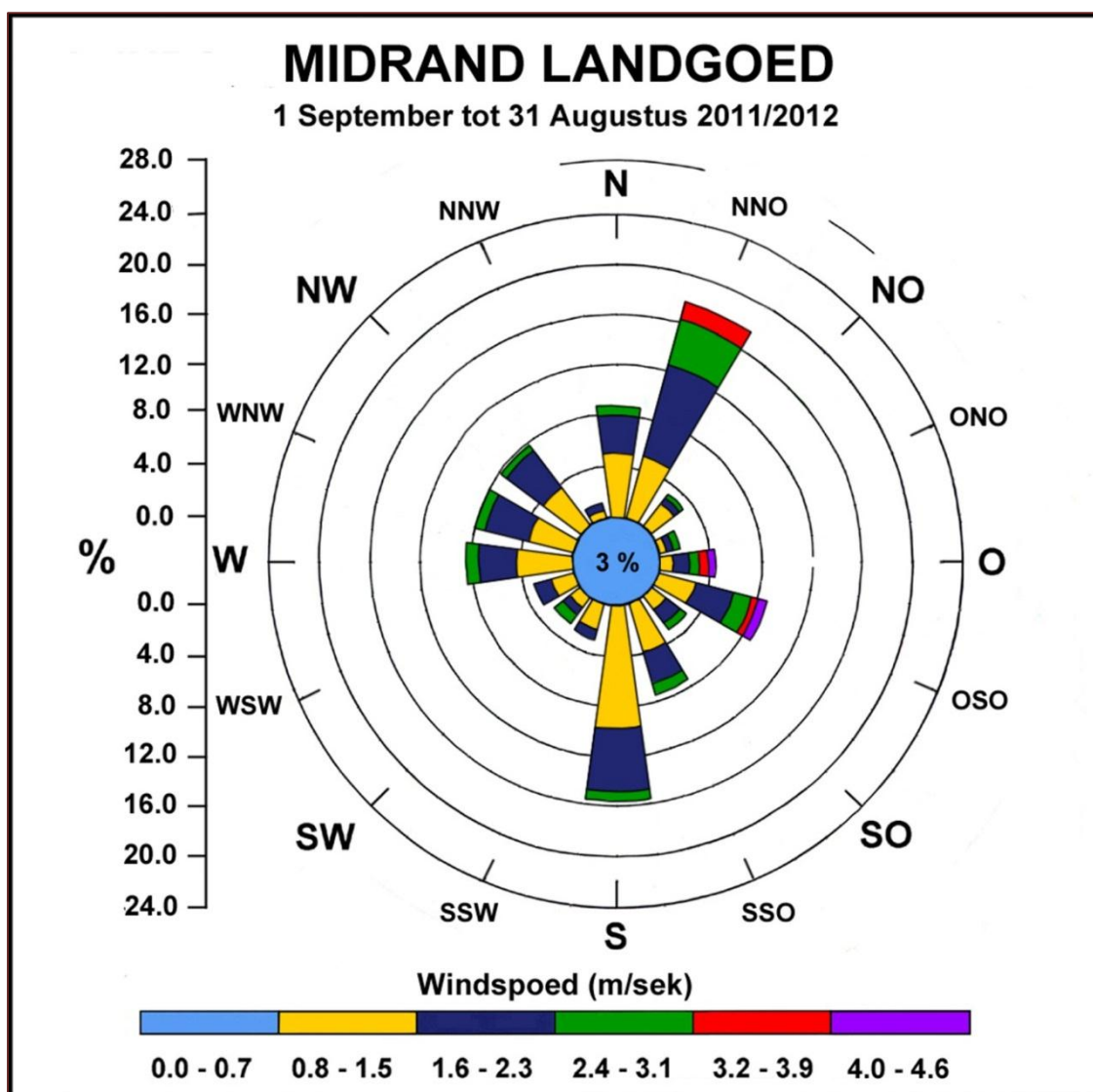


Figure 5: Wind speed and direction

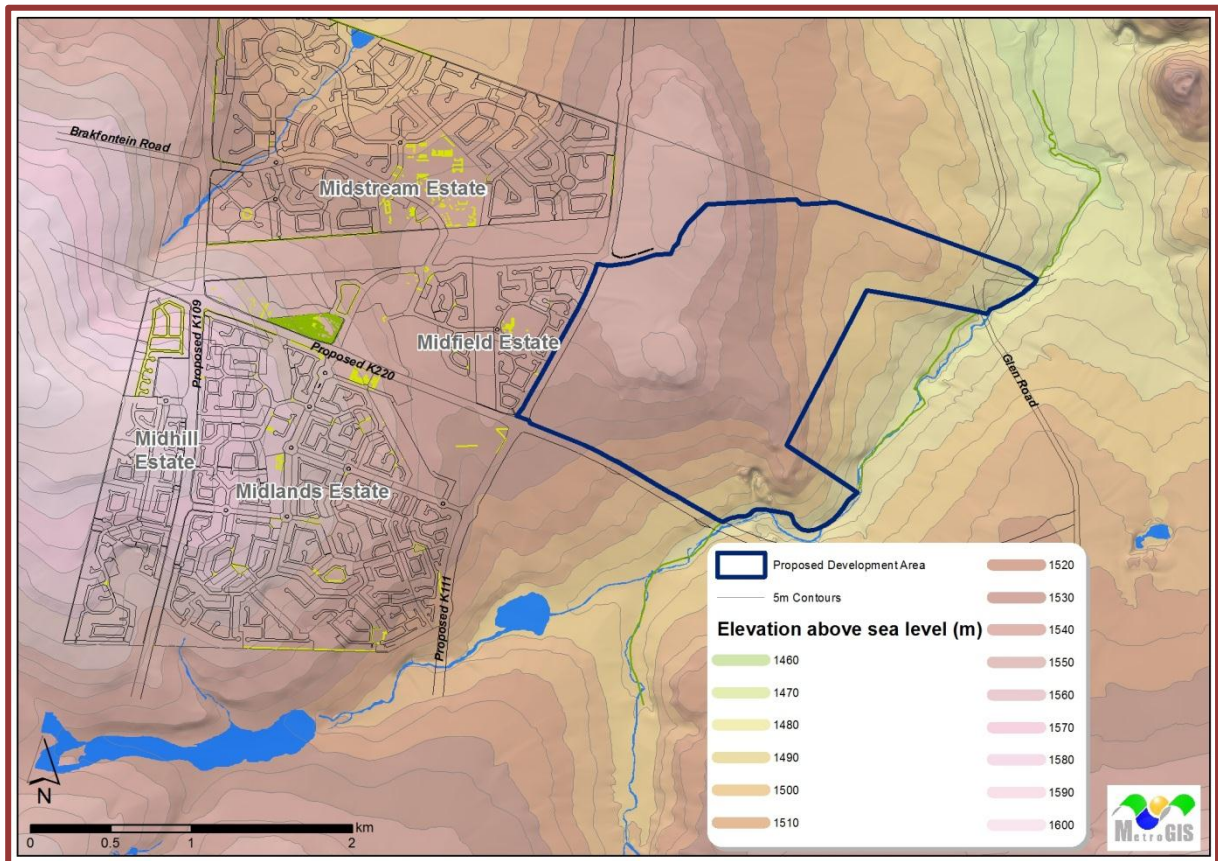
Table 1: Temperature, humidity, rainfall and sunshine ¹¹							
Season	Month of year	Temperature Average °C	Temperature Highest °C	Temperature Lowest °C	Humidity %	Rainfall mm	Sunshine Hours
2006/07							
Spring	September	16.2	28.0	2.5	37.0	0.4	-
	October	20.1	33.3	6.2	44.0	15.8	-
	November	19.5	30.8	9.1	61.0	80.4	-
Summer	December	21.5	32.9	12.4	60.0	109.2	-
	January	21.5	31.3	11.6	56.0	52.8	-
	February	22.3	33.2	10.6	46.0	32.8	-
Autumn	March	20.7	31.3	7.1	46.0	12.2	-
	April	17.3	27.5	1.9	53.0	33.6	-
	May	13.2	25.4	-1.3	33.0	0.0	-
Winter	June	10.5	21.3	-0.2	49.0	24.6	-
	July	10.1	23.5	-0.3	38.0	1.6	-
	Augusts	13.1	27.5	2.4	36.0	0.0	-
2007/08							
Spring	September	19.2	31.6	8.0	35.0	23.4	-
	October	16.9	28.3	8.2	67.0	118.3	197
	November	19.8	32.5	10.4	59.0	39.4	214
Summer	December	19.9	30.4	9.4	64.0	85.1	253
	January	19.6	31.5	12.3	75.0	206	188
	February	20.8	31	11.5	60.0	57.4	239
Autumn	March	18.2	28.9	7.9	69.0	143.8	190
	April	15.5	26.6	2.8	54.0	6.4	213
	May	13.5	25.4	4.9	58.0	41.7	166
Winter	June	10.9	21.8	-0.3	50.0	8.9	177
	July	10.4	22.3	-0.3	45.0	2.5	178
	August	14.3	26.5	3.4	35.0	0.0	211
2011/12							
Spring	September	17.8	28.0	7.0	32.0	4.3	240
	October	19.1	33.7	6.0	43.0	87.4	248
	November	20.3	32.1	9.5	49.0	85.9	263
Summer	December	20.3	34.1	13.7	63.0	155.4	230
	January	20.9	30.7	13.2	61.0	62.0	253
	February	21.5	30.7	14.6	59.0	74.9	213
Autumn	March	19.7	31.2	11.1	53.0	83.8	226
	April	16.1	26.6	6.7	54.0	13.7	214
	May	15.2	27.3	1.1	-	0.0	205
Winter	June	11.0	23.2	1.2	-	0.5	177
	July	-	-	-	-	-	-
	August	-	-	-	-	-	-

¹¹ This table provides information for three years for which complete information captured at Midrand Estates were available for the different parameters.

6.3. Topography

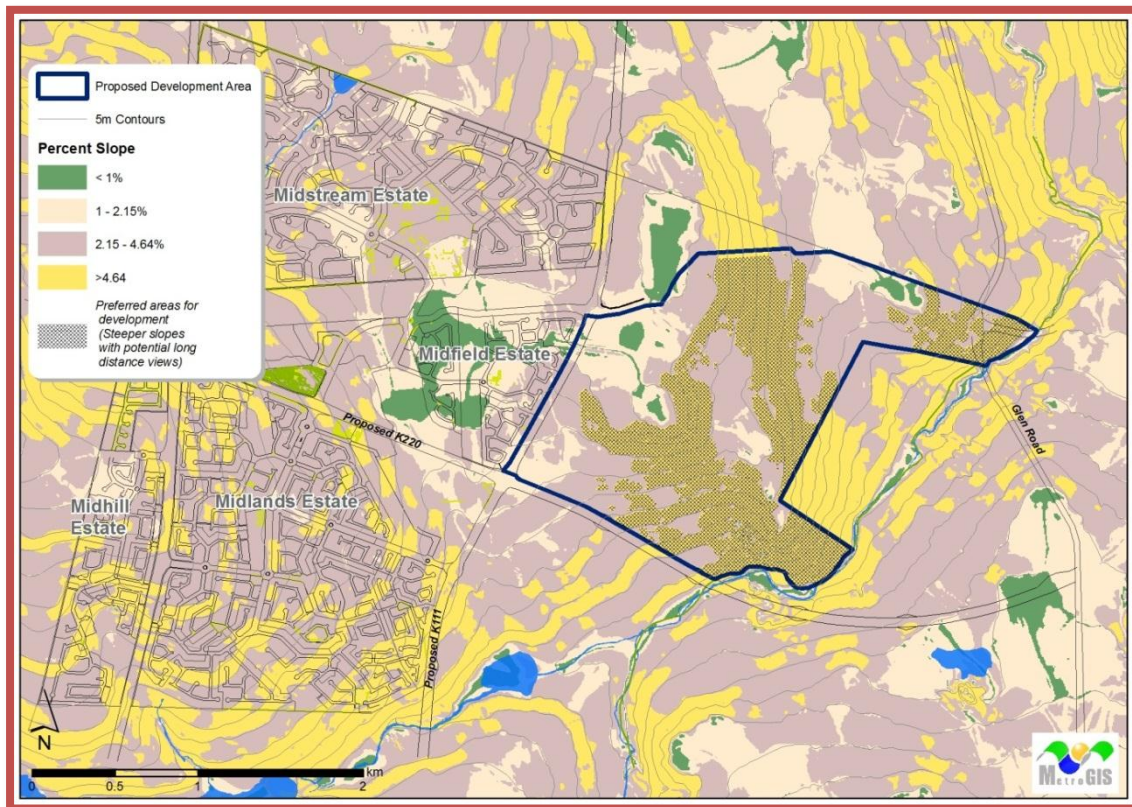
The site is characterised by moderately undulating plains and low hills. Two relative short parts of the eastern boundary are characterised by the river valley of the Olifantspruit.

Map 2: Topography of the proposed development area

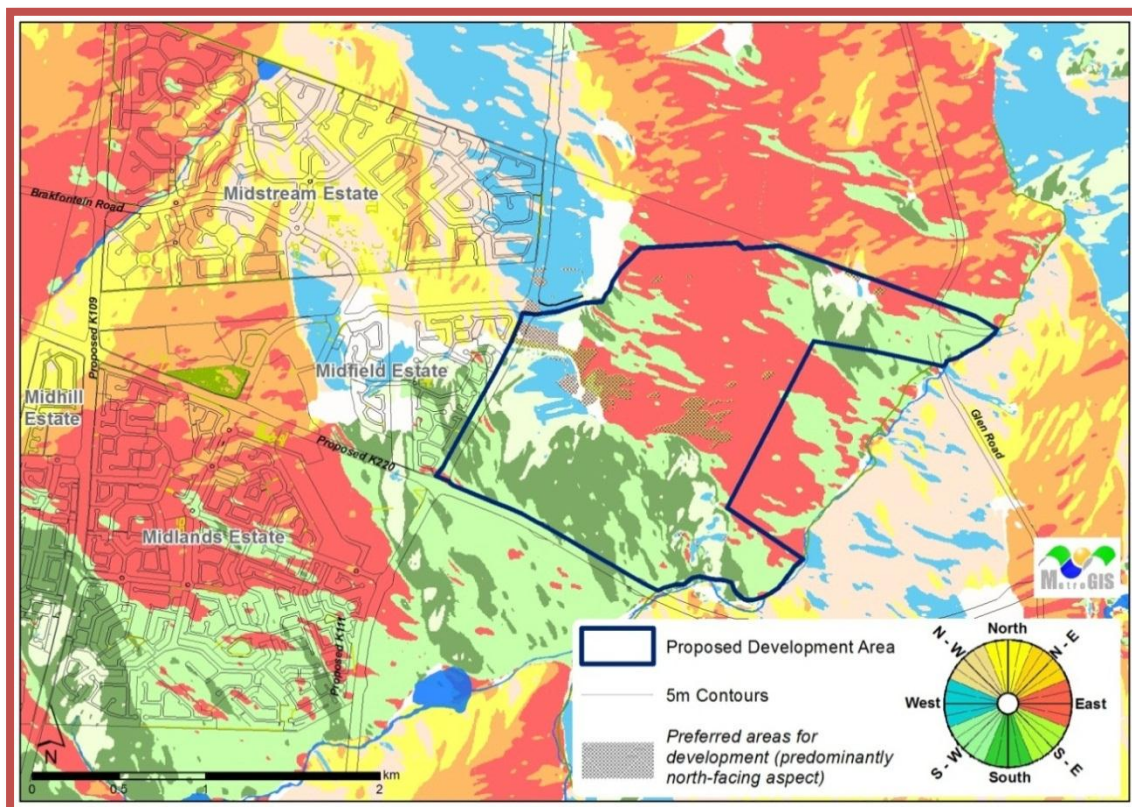


The site represents a typical Highveld landscape that ranges from valley bottoms to water divides. In terms of the Gauteng Ridges Policy, 2001, the steeper slopes on the site do not constitute class 1 or class 2 ridges in terms of the policy.

Map 3: Slope analysis



Map 4: Slope orientation



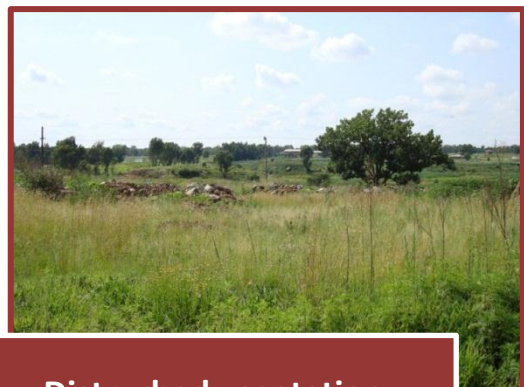
6.4. Hydrology

The centrally located low hill generally allows for a gentle slope in a southerly, north and north-easterly direction. The site can be divided into three main sub-catchments which dictate the nature of necessary stormwater management and also provides input into the design of the layout of the preferred alternative. The biggest part of the terrain drains towards the Olifantspruit which is partially situated on the boundary of the development. The site is therefore affected by the 1:50 year and 1:100 year flood lines in two places. Both of these areas are located in areas that are designated as natural open space. The flood lines will therefore not be affected by any of the development alternatives. The Olifantspruit flows in a northerly direction towards the Hennops River, draining into the Jukskei River Catchment area which flows into the Hartebeespoort Dam.

From a geo-hydrological perspective, the site is situated on an area underlain by dolomite. As dolomite is soluble in slightly acidic groundwater the dolomite can dissolve which can result in low density materials overlying the rock and cavities in the rock. Groundwater is stored in the cavities in the karst aquifers and large water resources are present in some areas. The abstraction of groundwater in dolomite must be controlled as the drawdown of the water table can lead to a higher hazard for instability events by exposing some overlying weak and low density materials to erosion and by consolidation of the materials when the water table is lowered. On-surface care must be taken to avoid leakages and ponding as this can lead to instability events by the erosion of the low density materials into cavities or the saturation and consolidation of lower density materials¹².

6.5. Vegetation

According to the SANBI 2004 Vegetation Map of South Africa, Lesotho and Swaziland, the study area falls within the Carltonville Dolomite Grasslands of the Grassland Biome. The vegetation quality of the study area can be divided into three quality zones:



Disturbed vegetation

¹² Input provided by Dr JP Venter who did the geotechnical investigations on the site.

- The north-western, south-western and western quadrants consist of **poor vegetation cover**. This section is characterised by disturbed grasslands, alien vegetation, low species diversity and substantial human-related disturbances which are mainly associated with previous agricultural activities.

- The eastern quadrant is characterised by **good vegetation cover** consisting of high specie richness and endemic grasslands, little invasive and exotic vegetation and limited human interventions. Although mining activities were previously exercised, these disturbed areas have after many decades rehabilitated well to again accommodate ecosystem functioning and a specie corridor to the adjacent Olifantspruit.



High quality grassland

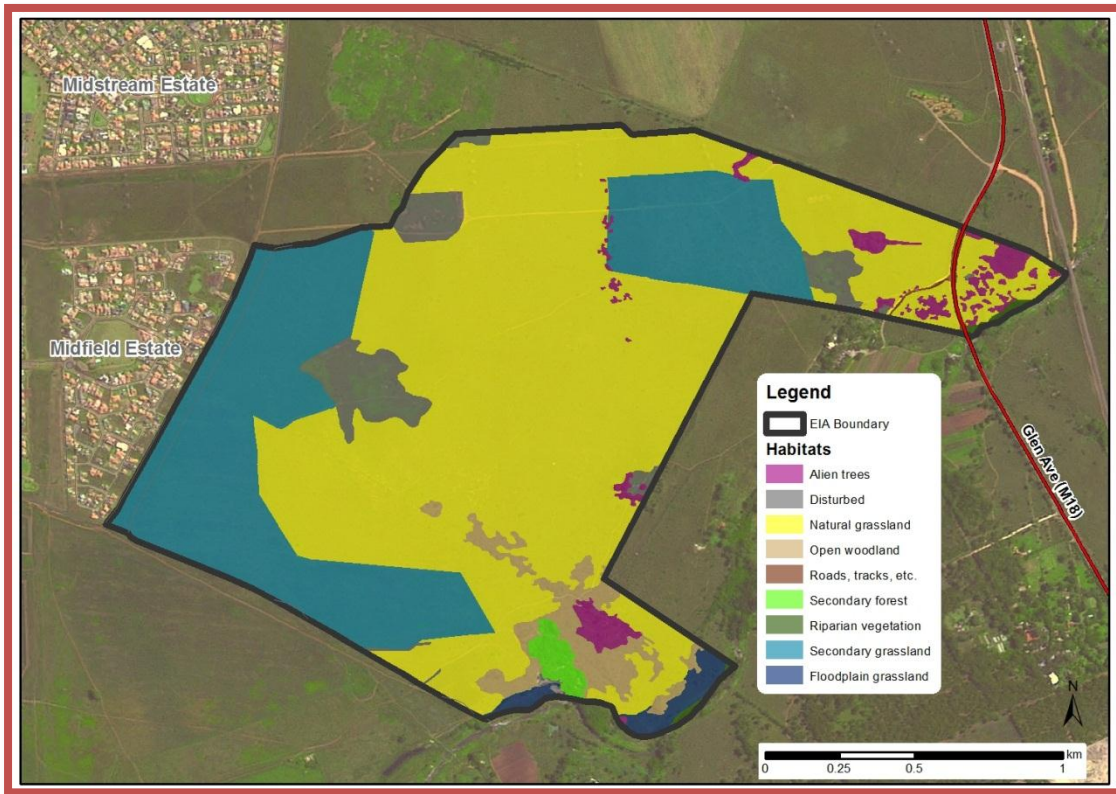
- The central area has good vegetation cover and is characterised by rocky undulating plains and natural grasslands associated with high specie richness. Significant parts of these areas will be conserved in ecological corridors in the preferred layout alternative.



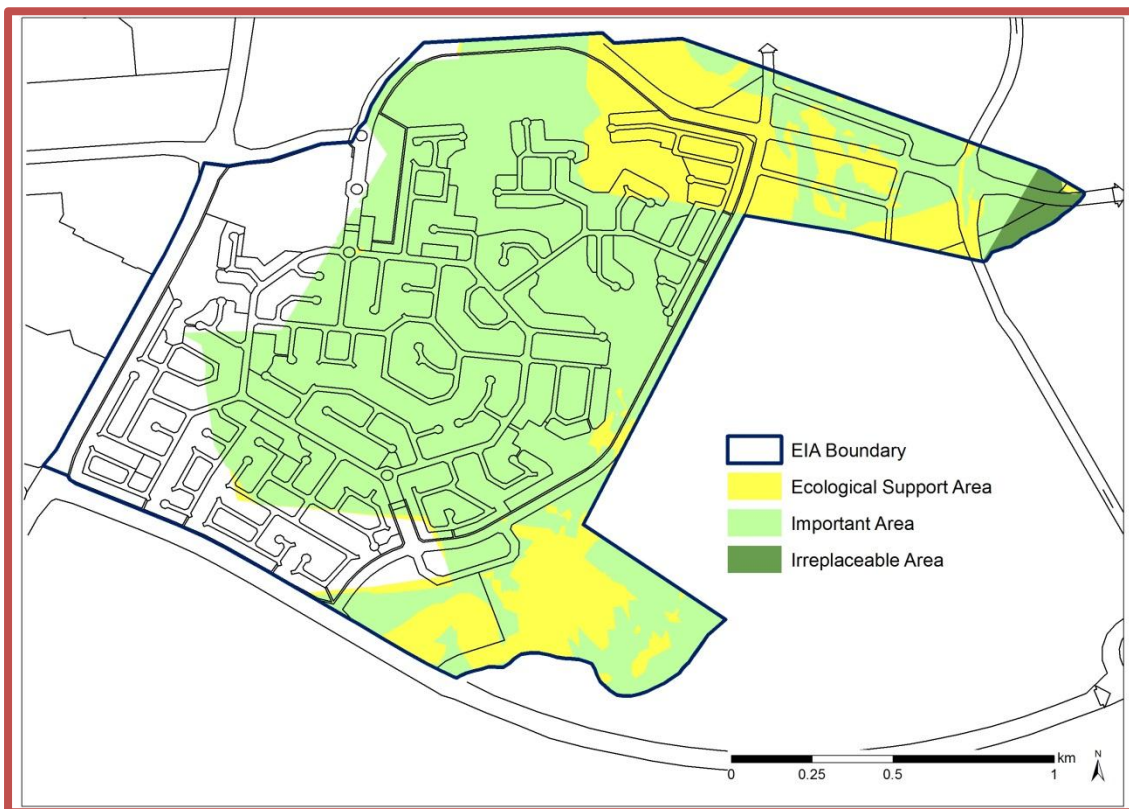
Rocky outcrop

- A rocky outcrop situated in close proximity to the cultural historic elements may be rich in plant species. This outcrop will be conserved in its entirety.

Map 5: Vegetation of the site

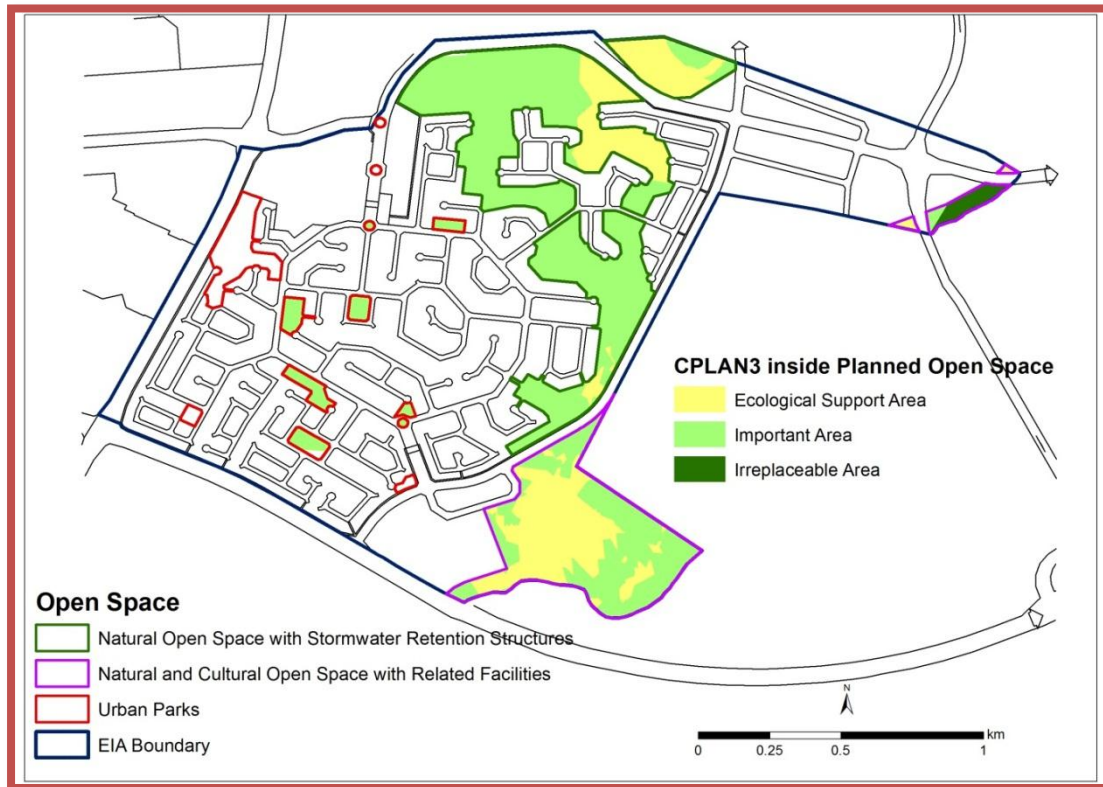


Map 6: C-Plan3.3classification



A significant portion of the area indicated as irreplaceable is in fact badly degraded and dominated by alien trees.

Map 7: C-Plan 3.3. Classification of remaining open space



The proposed development site consists of 28% (80.3 ha) primary vegetation and 72% (209.4 ha) transformed areas. Of the primary vegetation 1.6% (1.3ha) is classified as *irreplaceable* and 63.8% (51.2ha) as *important* in terms of C-Plan 3.3¹³. *Ecological support areas*, that include portions of secondary vegetation, cover an area of 28.5% (22.9ha) on site. A detailed specialist survey, undertaken by Dr. David Hoare during April 2012, confirmed that no Red Listed flora species were recorded on-site¹⁴.

An area of 111ha out of 186.5ha primary natural vegetation will be removed by the proposed development and 75ha will be incorporated as natural open space in the development. The natural vegetation of the site consists almost entirely of Carltonville Dolomite Grassland with small patches of Open Woodland, Floodplain Grassland and Riparian Forest. The entire extent of Floodplain Grassland and Riparian Forest will be contained in natural open space within the development area. Carltonville Dolomite Grassland is classified as vulnerable due to the small

¹³ Gauteng Conservation Plan, Version 3.3, 2011.

¹⁴ See Appendix 3a.

area that is currently formally protected, mostly in the Cradle of Humankind World Heritage Site. It however occurs widely over a large area within and outside urban areas with approximately 76% (693 463ha) of the original extent still remaining. The vegetation and flora survey confirmed that it is unlikely that any Red Listed species will be affected by the development proposal. The entire habitat along the riverbanks on the proposed development site of the Red Listed Half Collard Kingfisher has been set aside for conservation.

In a communication about the site in 2009 with Ms. Michele Phab of GDARD she indicated the following *“The proposed development site does not appear to be associated with any significant biodiversity sensitivities (excepting the primary grassland which is not required to meet national conservation targets) and therefore I do not see any major flaws... (unless a Red List species is located during ground truthing) ... I do see that Giant Bullfrog have been recorded in the vicinity, but this is not a significant issue as the site is within the urban edge and therefore Giant Bullfrog cannot be targeted for conservation. There is, however, a provincially important species corridor designated on the northern part of the site, which I see is along the powerline and has already been compromised so that it is no longer the required 600m in width. Nevertheless, the development proposal should take account of this corridor and plan it into the open space system.”*

6.6. Fauna

Several smaller mammals occur on the site including shrub hares, black backed jackals, hedgehogs, mongooses as well as a variety of mice and rat species. Puff Adder and Rinkhals snakes are common residents. In consultation with Dr David Hoare who conducted the Vegetation and Flora survey, it was decided that specialist work in respect to mammals and reptiles was not necessary in this area¹⁵.

A variety of frog species occur in the area but the habitat of the Giant Bullfrogs are limited to the wetlands and seep areas on the granites that occur further to the north west of the site¹⁶. From time to time a Giant Bullfrog will wander into the area looking for food (they seem to have a taste for certain pet foods that are left outside at night).

¹⁵ Personal communication with Dr Hoare, August 2012.

¹⁶ Clayton . L. Cook, Specialist Amphibian Survey and Habitat Assessment that was done for a previous application in the area.

A large variety of birds occur on the site¹⁷. While the grassland habitat on the site is suitable for African Grass-Owls from a foraging perspective, it is not suitable for breeding and roosting. The Olifantspruit that runs along the boundary of parts of the study area contains sections that are suitable habitat for Half-collared Kingfisher. The application of the Sensitivity Mapping rule for Half-collared Kingfisher as prescribed by GDACE (2009) means that a buffer zone of 50m must be provided from the edge of the riparian zone, in this instance the Olifantspruit. This will be sufficient to support a maximum of one or two individuals of the species.

6.7. Rivers and wetlands

Parts of the south eastern boundary of the site are made up of the Olifantspruit (also called the Kaalspruit by some). According to the proposed layout plan, the river as well as the riparian vegetation in this area will remain undeveloped in a natural open space system. A buffer of at least 60m will be maintained along the course of the river in places where it does not form part of larger natural open space areas. The river and its associated riparian zone will therefore not be affected by the proposed development.

There are no other wetlands or drainage channels present on the site. There are also no vegetation indicators of wetlands on site (except those associated with the Olifantspruit) and there are no topographic indicators of wetlands on site, i.e. the landscape is gently undulating with no drainage valleys carrying water downslope. Rainwater on site drains in sheet flow and is also absorbed relatively quickly by the soils and dolomitic rock formations. There is a relatively deep water table (15m or more) that occurs on the site and there is no seepage from underground sources onto the surface¹⁸.

6.8. Soils and geology

The underlying geology and soils consists of dolomite and chert categorised under the Malmani Subgroup (Transvaal Supergroup) supporting mostly shallow Mispha and Glenrosa soil forms typical of the *Fa* land type, dominating the landscapes of this unit. Deeper red soils occur sporadically, especially on the western part of the site. A detailed geotechnical survey of the

¹⁷See Appendix 3h.

¹⁸See Appendix 3b.

site consisting of more than 565 drilled holes has been completed¹⁹ and was used as an input in the layout design for the preferred development alternative.

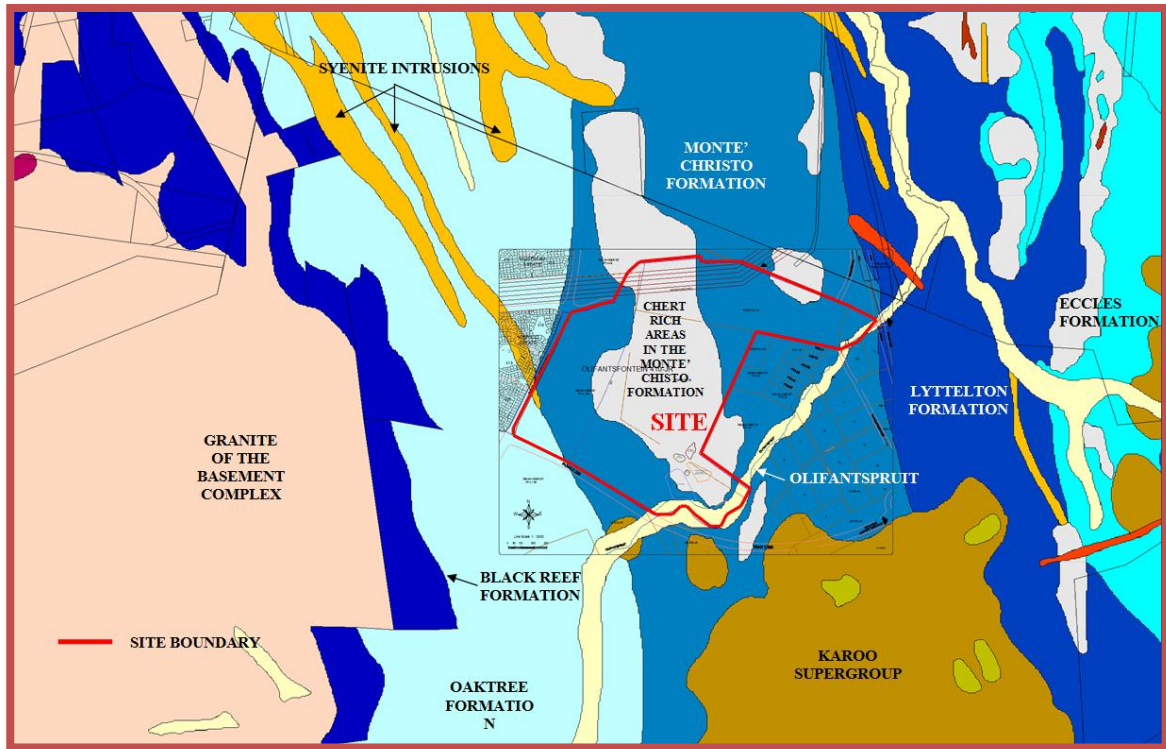
The proposed development site is situated on sediments of the Transvaal Supergroup overlying the granite of the Halfway House Dome which is situated to the west²⁰. The strike of the contact is in a north north-westerly direction and this is also the strike direction of the overlying Formations of the Transvaal Supergroup. The contact with the granite is situated on the south western part of the farm Olifantsfontein 410-JR. The formations overlying the granite to the east are the Black Reef (Quartzite) Formation followed by the Chuniespoort Group which consists of dolomite. Dolomite is mainly composed of $\text{CaMg}(\text{CO}_3)_2$ which is soluble in weak acids hence the development of leached zones and cavities. The Chuniespoort Group consists of four formations i.e. from west to east the Oaktree, Monte Christo, Lyttelton and Eccles Formations. Intrusive rocks, mainly syenite, have intruded the dolomite, especially near the contact with the granite. Even though the shapes of these intrusions are very irregular, they also follow a generally north-northwesterly trend. The Oaktree and the Lyttelton Formations are chert poor formations while the Monte Christo and Eccles are chert-rich i.e. they contain substantial layers of chert, a cryptocrystalline SiO_2 rock which is not soluble in weakly acidic groundwater and therefore remains as boulders on surface or layers underground when the dolomite has been dissolved.

¹⁹The letter from the Council for Geoscience in respect to the suitability of the site is attached in Appendix 3f.

²⁰ This input on the geology of the site was provided by Dr JP Venter who is responsible for the geotechnical survey of the site. See Appendix 3f.

Map 8: The proposed development site in relation to geological formations

(Source: Council for Geoscience, 2012)



The western part of the Midstream development is underlain by granite, Black Reef quartzites and dolomite of the Oaktree Formation. Geological plans and dolomite stability investigations indicate that the Oaktree Formation continues almost up to the proposed K111 route. The present Midstream Ridge area is situated on the Monte Christo Formation. The eastern most edge of the area, east of the P38-1 road, may be situated on the Lyttelton Formation.

During the present investigations the area is being investigated in much more detail for dolomite stability evaluation and zoning. It shows the area east of the K111 to be underlain by a thick syenite sill followed by an area underlain by dolomite. This is again followed by an area with prominent syenite sills. The large central area is underlain by dolomite weathered to various depths. Syenite sills are present close to the P38-1 road. The area up to and across the road is again underlain by dolomite.

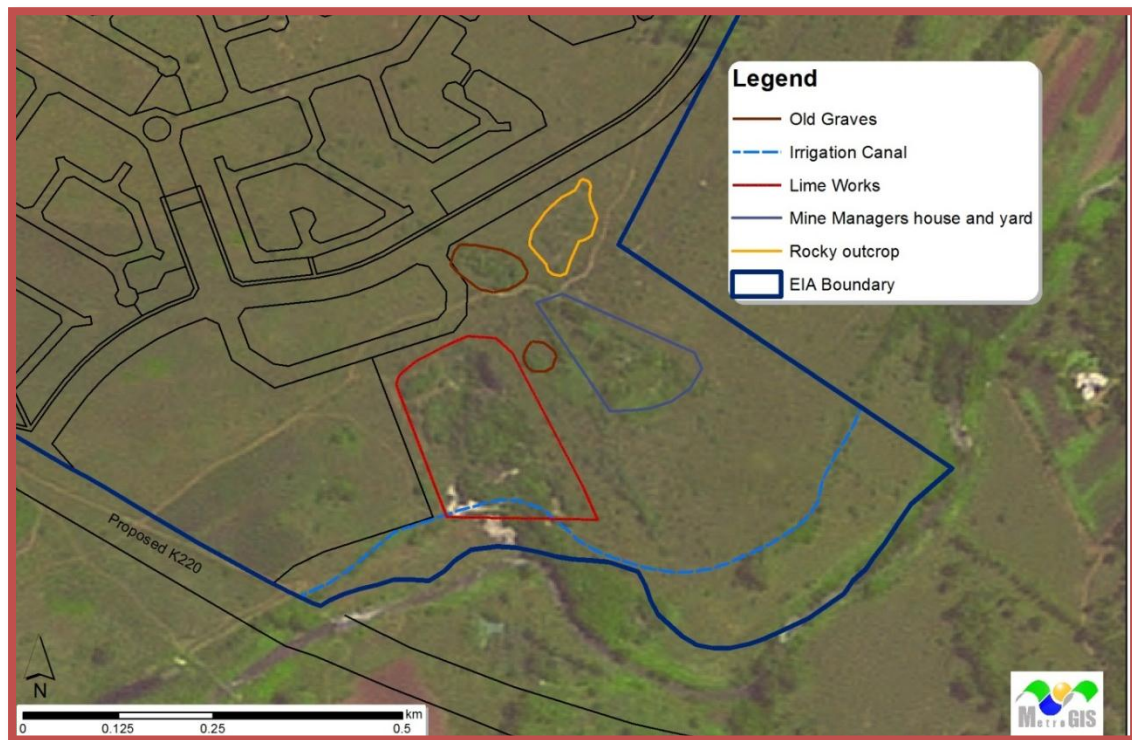
An enquiry to the CGS on the location of sinkholes on the Midstream Ridge area did not indicate any such occurrences. Some instability occurred next to the railway line to the north and south, probably due to poor drainage. Instabilities (sinkholes) are shown to have formed on the developed areas of the Irene Research Farm and in the township of Olifantsfontein. These

sinkholes are, however, repaired fairly quickly or the throats are closed by natural collapses. They therefore do not form long term accessible cave entrances. Such an entrance apparently existed on the Irene Research farm but it is unknown if the entrance in the sinkhole are still open. No such features exist on the Midstream Ridge area.

6.9. Cultural historical features

A cultural heritage resource assessment has been undertaken and is attached in Appendix 3. It will also be submitted to the South African Heritage Agency for their comments. All sites will remain intact in open space areas.

Map 9: The location of cultural historical features in area A



Two significant cultural historical features occur on the site namely²¹:

- Lime workers and associated finds:
While lime quarries occur all over the Highveld area where dolomite is present, this specific lime works is important because the opencast

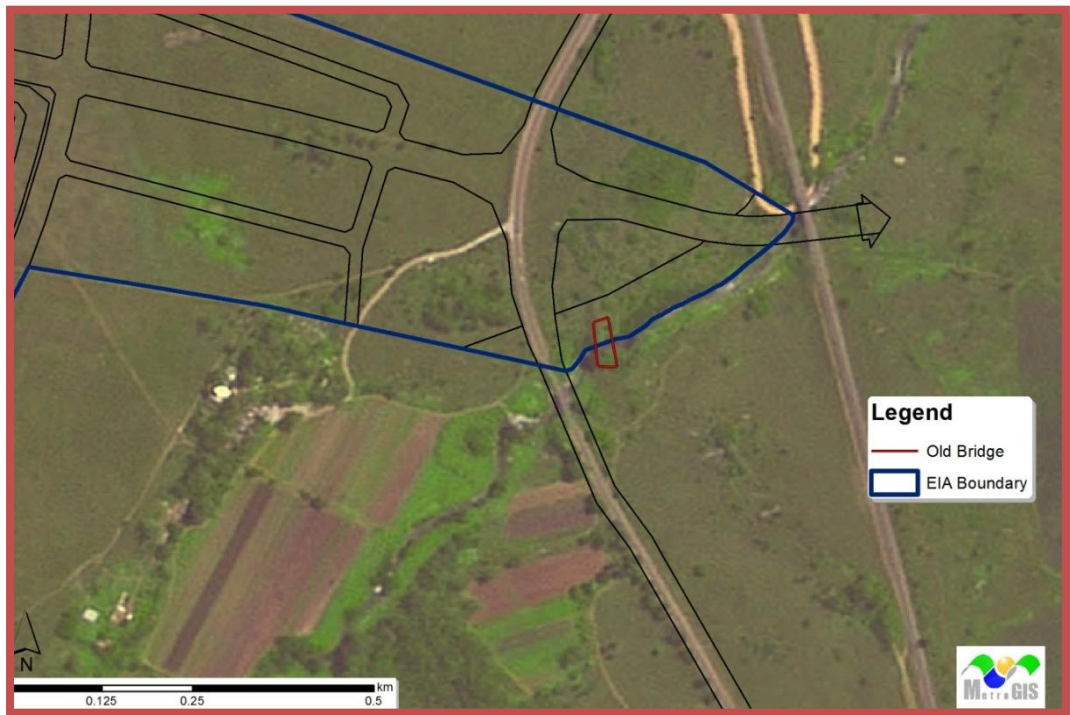


Inside a lime kiln

²¹Dr Udo S. Küsel, Heritage Resources Impact Assessment, 2012.

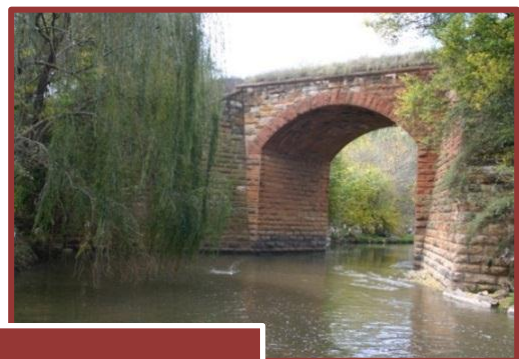
mine and associated lime kilns are still intact as well as the cemeteries of the mine workers. In most of the other lime works only the large quarries have survived. The site is at least of local (Field rating/Grade III A) significance but could most probably, with more research, be considered a Provincial or Grade II site.

Map 10: The location of the old Imperial Military Railways Bridge



- **Sandstone Bridge:**

The sandstone bridge over the Kaalspruit is aesthetically a masterpiece. It also has high historical value and is associated with the Anglo Boer War. It was built by the Imperial Military Railways to link Pretoria with Johannesburg. Its field rating is of Provincial significance (Grade II) and should be nominated as such.



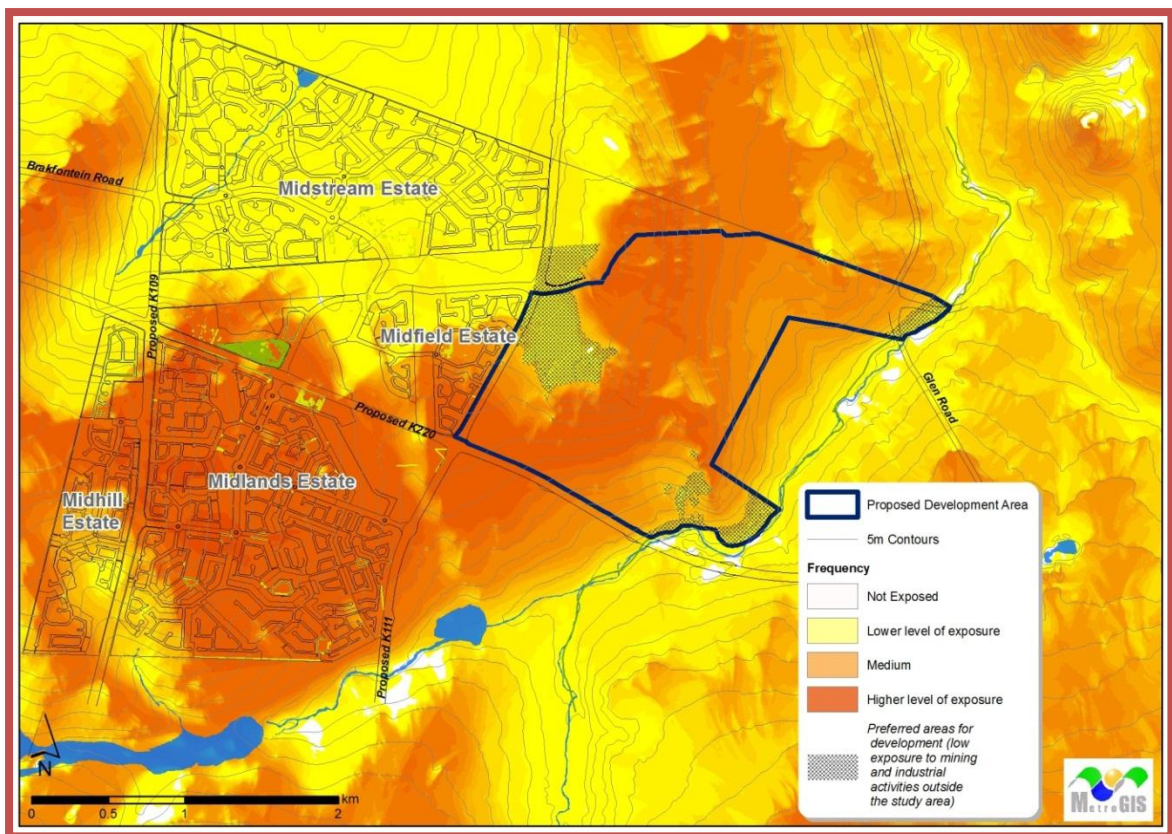
Old railway bridge

6.10. Visual character of the area

The majority of the site is visually exposed as it is relatively high in the landscape compared to the surrounding areas. Given the nature of the surrounding areas it is unlikely that the development will have any negative impact on its surroundings with the exception of direct neighbours that current have a view of the natural landscape and vegetation of the site. These neighbouring locations themselves however do not contribute much to the visual quality of the area with the exception of certain secluded places along the Olifantspruit. Visual influences on the neighbouring and nearby properties that detract from the visual quality of the site include:

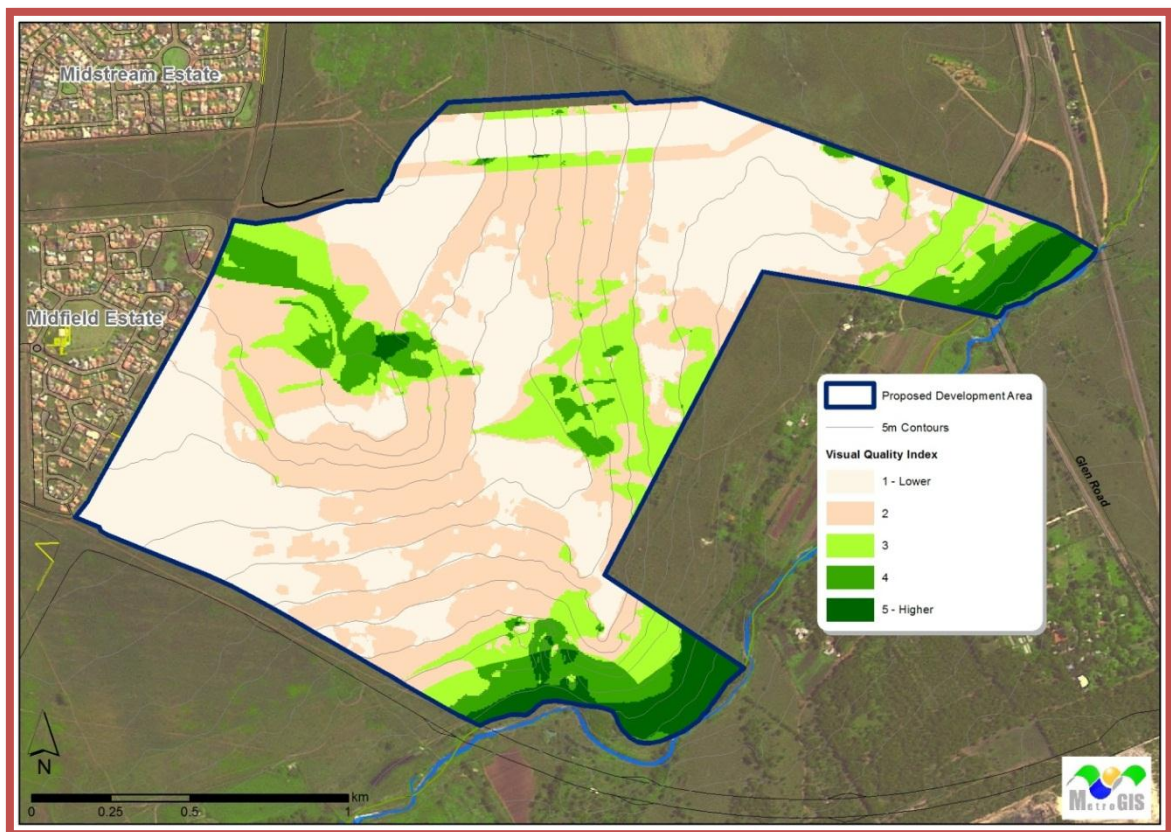
- Exotic plantations to the east;
- Unkept or badly kept agricultural holdings to the east;
- The Irene Weather Station buildings to the north; and
- Eskom power lines to the north.

Map 11: Areas that are exposed to negative views of industrial type developments



The industrial nature in combination with sub-economic housing in the longer distance also detracts from the visual quality of the site. The nature and ambiance created by the existing Midrand Estates to the west of the site however provides a strong local character that can be used and be expanded into the proposed development area, provided that the development is carefully phased to gradually overcome and replace the negative external visual impacts by and inward visual focus. This is reflected in the layout and open space allocation which aims to draw the visual attention to natural and open space features in the site while occupying the areas with less attractive views with development that will restrict medium to long distance view to the extent possible.

Map12: Visual quality index of the proposed development site

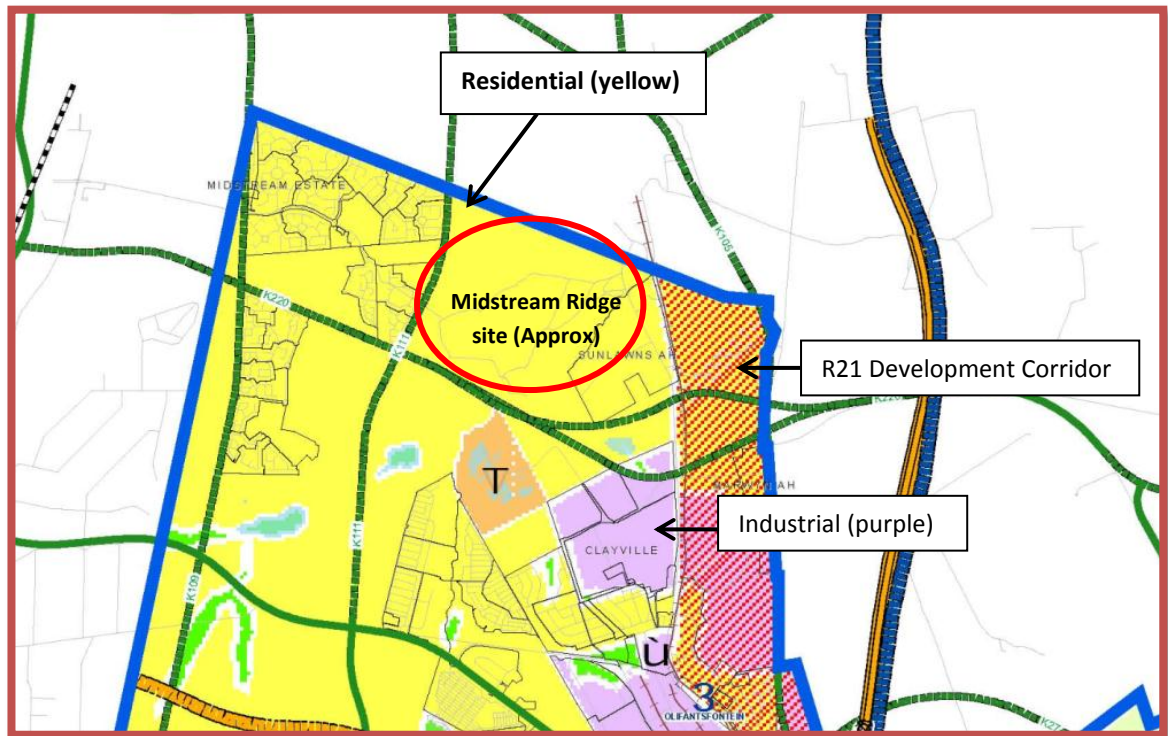


Map 11 represents a visual quality index that was derived from the topographical factors as well as visual exposure. The area with higher visual quality generally occurs along the Olifantspruit where the visual envelope is limited to short distance views, which cuts out the broader surrounding areas. A few areas with eastern and northern views are also prominent. A significant part of the high quality visual areas will be preserved in the natural open space areas.

6.11. Town planning considerations

In terms of the Northern Spatial Development Framework of the EMM, the whole of the development area is earmarked for residential and related uses. It is situated close to the proposed R21 Corridor to the east and is therefore ideal to provide a residential component with an associated mixed used component close to potential future employment opportunities.

Figure 6: Extract from the Northern Spatial Development Framework of the EMM



6.12. Air quality

The proposed development site is located approximately 1.5 km from the Clayville/Olifantsfontein industrial area. The entire area proposed for residential use falls outside the Gauteng Industrial Pollution Buffer. The area also falls within the Highveld Priority Area for pollution control and the Ekurhuleni Metropolitan Municipality has an operational Air Quality Management Plan that is used to regulate polluters in the area. Recent inspections have confirmed that, with the exception of a few incidents, the industries in the area are generally in compliance with their permit conditions and according to the available information all pollution levels are within acceptable limits²². The applicant in consultation with the EMM has

²² Letter 17/19/3/1 Midstream received on 24 July 2012 from the Ekurhuleni Metropolitan Municipality attached in Appendix 6.

nonetheless decided to establish a local ambient pollution baseline for Midrand Estates in order to create a benchmark from which future deterioration or improvement of ambient air quality can be established in order to assist with the control and enforcement of pollution sources in the wider area.

Measurements for PM10, PM2.5 and Pm1.0 that is being taken by means of an Osiris meter. Passive sampling and measurements of SO₂, NO_x, Ozone, VOC's and HCL using Radiello tubes is also being done in order to establish a pollution information baseline for the entire Midrand Estates area. The instrumentation has been installed at Retire@Midstream and is a joint venture between the applicant and the Ekurhuleni Metropolitan Municipality to establish an ambient pollution baseline for the area. Depending on the results that will be obtained these measurements will continue for between 3 and 6 months, with the information to be shared by the EMM, the applicant and Midrand Estates.

Dust monitoring is also being done at eight points on the proposed development site. The initial purpose of the monitoring will be to establish a baseline, and should the project be approved, monitoring will continue to determiner compliance to national standards and legislation. This measurements is being done by means of 8 dust sampling buckets using the ASTM D1739 method.

The first set of results of these measurements is included in Appendix 3e.

These assessments will carry on regardless of the outcome of the EIA process and should be regarded as a component of the Environmental Management Programme (EMP).

6.13. Noise

For the new development, an environmental noise has been conducted, including day and night ambient noise measurements, with a type 1 Integrated Noise Level Meter that were operated in accordance with the methodology prescribed in the Gauteng Noise Control Regulation 1999 and the national standard SANS 10103 of 2008. In addition an assessment of results, context etc. has been done in order to produce a Noise Assessment Report which is attached under Appendix 3.

Table 2: Results of ambient noise monitoring on site

Measuring points			Night time measurements		Daytime measurements	
Longitude	Latitude	Reference point	LAeq measured	Standard	LAeq measured	Standard
S25° 55'16"	E28°13'32"	MS 4	-	45dBA	47dBA	55dBA
S25° 55'07"	E28°12'54"	MS 5	-		49dBA	
S25°55'08"	E28°12'22"	MS 6	49dBA		51dBA	
S25°55'25"	E28°12'33"	MS 7	40dBA		45dBA	
S25°55'47"	E28°12'17"	MS 2	37dBA		43dBA	
S25°55'40"	E28°12'05"	MS1	38dBA		46dBA	

The main noise sources were identified as:

- Aircraft noise;
- Railway noise; and
- Industrial noise (especially audible at night).

Other minor contributing sources included:

- Normal environmental noise (birds, wind, etc.);
- Barking dogs; and
- Vehicle noise.

6.14. Economic and social factors

6.14.1. Preferred land uses

When the initial EIA for the wider Midrand Estates was done in 2002²³, a survey was done in 15 surrounding areas (suburbs) in order to find out the most appropriate land uses for the area, taking 21 different potential land uses into account. The 5 most preferred land-uses in the 2002 survey (in order of preference) included:

- Security villages;
- Low density housing;
- Medium density housing;

²³ GAUT 002/01-02/37 Proposed Establishment of a Township on Portions 8, 34, 35, 39, 46, 47, 48 and the remainder of portion 1 of the Farm Olifantsfontein 410JR, Midrand.

- Golf estates;
- Shopping centres; and
- Institutional services (schools, police stations, post offices etc.).

The 5 least preferred land-uses in the 2002 survey (in order of least preferred) included:

- Informal housing;
- Livestock grazing;
- Sub-economic housing;
- Rain fed agriculture; and
- Bulk service infrastructure.

In order to get an idea of the current relevance of the 2002 study and to assess how priorities have changed, it was decided to conduct an opinion poll amongst residents that were registered as interested and affected parties in the current EIA process, using the same 21 potential land uses. 44 responses were received and while it cannot be regarded as representative due to the relatively low representation, it does give a clear idea of what the preferred land-uses are for the current residents of Midrand Estates (the full result is contained in Appendix 4). The five most preferred land uses (in order of preference) include:

- Conservation areas;
- Security villages (including estates);
- Conservation of sensitive features;
- Formal park areas; and
- Golf estates.

The five least preferred land uses included:

- Informal housing;
- Sub-economic housing (government subsidised low cost housing);
- High density housing (more than 30 units/ha);
- Industrial parks and centres; and
- Intensive agriculture.

In trying to interpret these results and the changes that occurred over a ten year period it is important to note that ten years ago the opinion was that of “neighbours” and that the current opinion is that of residents in Midrand Estates that moved into the area since then.

It is also significant to note that certain basic needs of people have been fulfilled, at least to some extent, and that schools (while still relatively important at number 7 out of 21) slipped down the scale of priorities due to the primary and secondary school that was built at Midstream Estate. Similarly the shopping centre in Midstream Estate as well as new shopping centres in the wider area such as the Grey Owl Centre and the Southdowns Shopping Centre have to a large extent satisfied the current need for shopping centres (number 10 out of 21) in the area.

The results also indicate a growing preference for the Midrand Estates type of development in the area with a stronger focus on privacy, quality and exclusivity. The emphasis on “living close to nature” is also reflected in the high value that is placed on conservation areas and open space.

From the above as well as the overwhelming feedback received in the public participation process it is clear that from a broad public perspective the continuation of the current development model is of the utmost importance – it works and people like it.

There is however a need to provide for employment opportunities closer to the estate in order to prevent it from becoming a largely dormitory town. There is also a need to provide a stimulus for movement to the east of the estate in order to relieve the growing pressure of development of the area (also other developments) to the west in the direction of the N1 highway. For these reasons, and because of the critical mass that is being reached, there is a need for mixed use development to the east of the proposed Midstream Ridge.

It is also important from a transport system point of view as Glen Road and the railway line with Pinedene Station are important routes that connect to areas in the north, east and south. The eastern most point of the proposed development area is, therefore, ideally suited for a local transport terminus with its strategic location along Glen Road close to the Pinedene railway station. It will bring different modes of travel together at a point from where it can disperse efficiently to destinations in the area. This facility will greatly improve the time many workers in the Midrand Estates area and around it spend on travel.

The proposed layout reflects these considerations and tries to provide the most appropriate combination of land uses for the area.

6.14.2. The economic impact of the proposed development

The economic impact of the proposed development is described in Appendix 5. It is summarised in the table below.

Table 4a: Alternative 1: Economic impact of the proposed development in current rand value						
	Pre-construction Investment	Income	Construction investment	Taxes paid	Paid to municipal services	Employment
Pre-development	R15m	-	-	-	-	-
Town development	-	-	R348m	-	-	(72m)*
Residential development	-	R600m	R1 800m	150m	240m	(R140m)
Post development	-	-	-	-	-	R48m/pa

*The amounts in brackets is a part of the total construction investment

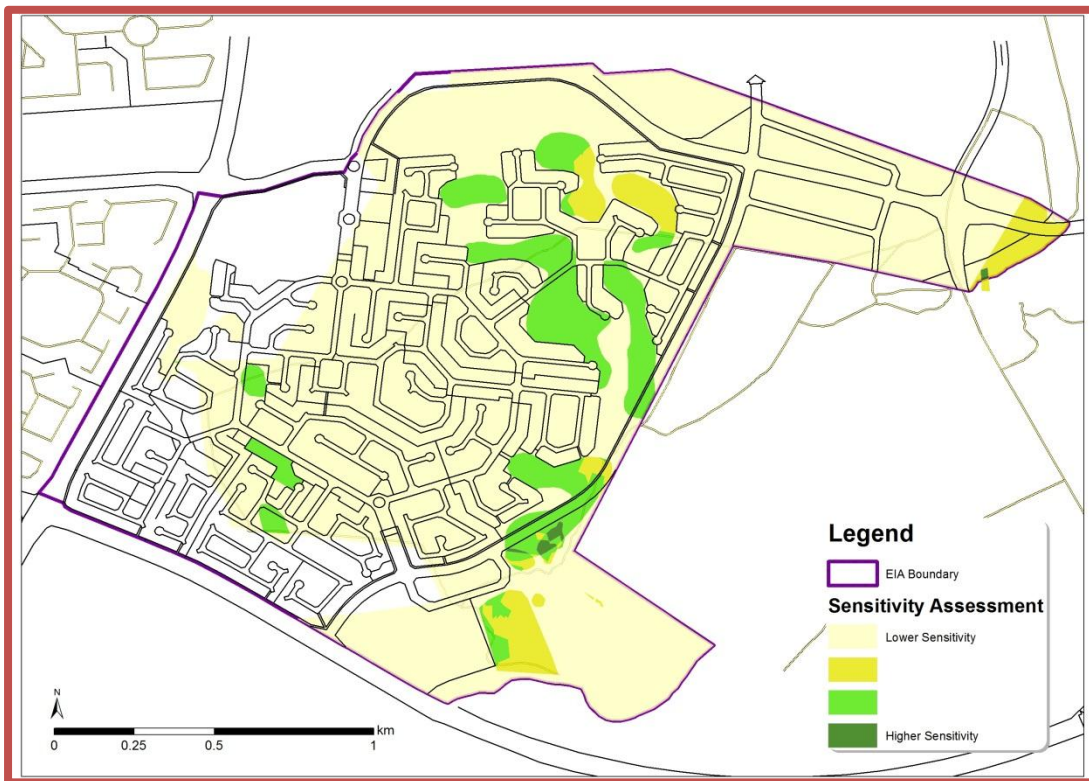
Table 4b: Alternative 2: Economic impact of the proposed development in current rand value						
	Pre-construction Investment	Income	Construction investment	Taxes paid	Paid to municipal services	Employment
Pre-development	R15m	-	-	-	-	-
Town development	-	-	R540.5m	-	-	(108m)*
Residential development	-	R600m	R4 000m	400m	700m	(R95m)
Post development	-	-	-	-	-	R12m/pa

*The amounts in brackets are part of the total construction investment

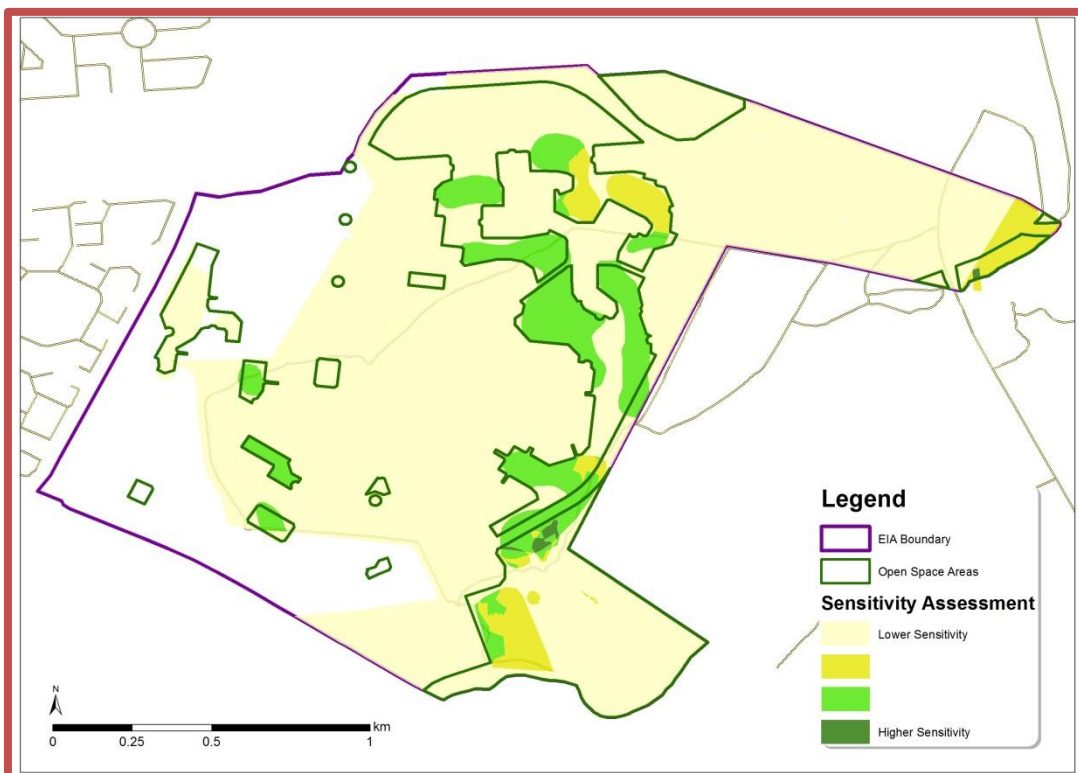
6.15. Sensitivity mapping

Taking account of the various factors of which the vegetation, geology and cultural historical features are the most important, as well potential linkages between open spaces the layout of the preferred alternative was strongly influenced by these factors. The sensitivity analysis combines both natural and cultural features and where they overlap it results in particularly high values.

Map13: Environmental sensitivity with the proposed development layout



Map14: Environmental sensitivity within proposed open space areas



7. Summary of the public participation process

7.1. Notification

Notification to interested and affected parties was done by means of:

- Notices to “neighbours” within a proximity of at least 150m from the boundary of the site on 1 March 2012 including:
 - Adjacent neighbours in Midstream and Midfield Estates;
 - The Agricultural Research Council that owns land to the north of the site;
 - ERWAT (the Ekurhuleni sewage treatment institution) which is situated to the south of the site; and
 - Four landowners of adjacent farm/vacant land, mainly to the east of the proposed development site.
- Placement of site notices on 1 March 2012 at:
 - The entrance way to the site on the K220 road servitude;
 - The gate to the property along the P38-1 road (Irene – Olifantsfontein Road); and
 - The entrance to the Super Spar shop at the shopping centre in Midstream Estate.
- Advertisement in the Centurion Record (the local newspaper) on 2 March 2012.



7.2. Registration of interested and affected parties

Sixty three persons registered as interested and affected parties as a result of the notification process (see Appendix 6 for details).

7.3. 1st Public open day

Registered interested and affected parties were invited to attend a public open day on 18 April 2012 from 15:00 to 19:00 at the Retire @ Midstream Community Hall. The open day was also widely advertised in the newsletter and at the entrances to the estates in Midrand Estates.

Three hundred persons registered at the public open day of which two hundred and twenty five were private residents and seventy five represented organisations.

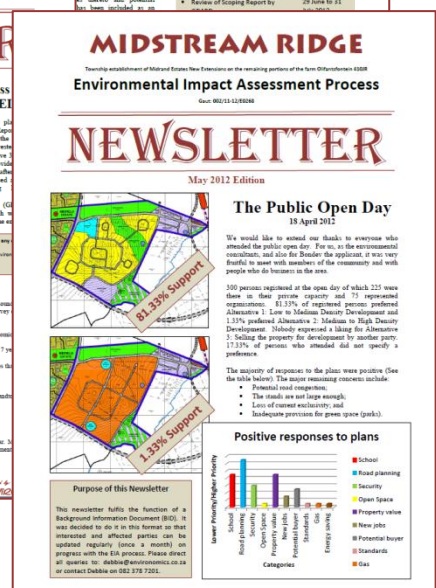
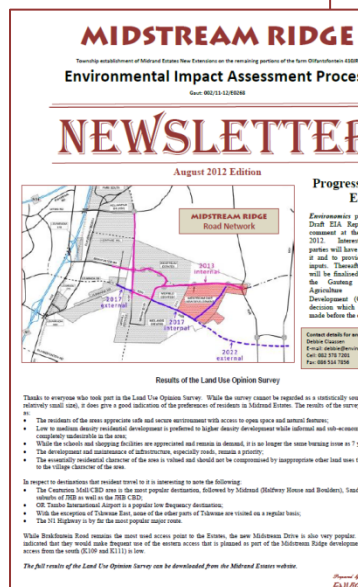


Residents in discussion with a specialist

7.4. Newsletters

Instead of compiling a single background information document at the beginning of the process, it was decided to rather do it in the format of regular EIA newsletters. This made provision to also include progress with process from time to time. It was very well received by interested and affected parties and attracted many more participants to the process. Three newsletters were sent to I&APs and were also handed out at the two open days. The newsletters were issued on the following dates:

- 1st Newsletter – 14 May 2012;
- 2nd Newsletter – 4 July 2012; and
- 3rd Newsletter – 21 August 2012.



7.5. The Scoping Report

The draft Scoping Report was made available for comment to interested and affected parties on 14 May 2012 and two CD's were submitted to GDARD at the same time. Copies of the draft Scoping Report was also provided to the Ekurhuleni Metropolitan Municipality and the Department of Water Affairs.

Comments that were received on the Scoping Report, see Appendix 6, were collated and worked into the final Scoping Report that was submitted to GDARD on 28 June 2012.

7.6. Meetings

Meetings and/or presentations to the Midstream Home Owners Association

These took place on the following dates:

- 9/03/2012: Informal meeting with Mr. Ken Greve representing the HOA and the applicant to clarify components of the proposed development.
- 12/06/2012: 10 attended the Homeowners Association meeting to discuss their comments (minutes attached in Appendix 6).
- 11/09/2012: 11 attended the Homeowners Association meeting and presented a Power Point Presentation to indicate how their issues have been addressed (presentation attached Appendix 6).

Meetings with Shoprite Checkers

The purpose of the meetings with Shoprite Checkers and the applicant was to resolve issues between the parties in order to ensure that those issues did not unreasonably get drawn into the EIA process. This was done reasonably successfully. Since there was an agreement of "without prejudice" discussion between the parties, no minutes or notes of the outcomes of these meeting are available as the matters discussed between the parties is regarded as private. The point is rather that the meetings succeeded to get the parties to discuss feasible options to resolve their differences. The meetings were held on:

- 25/07/2012; and
- 30/07/2012.

Meeting with neighbour

The purpose of the meeting with Mr. Sean Cullinan, a neighbouring property owner, centered around their current use of the application site for outdoor recreation activities. The issues in this respect are fully documented in Appendix 6 (Register of comments and responses). It is our view that it is a matter that needs to be resolved between the neighbours and that it has little to do with the EIA process. The meeting date:

- 21/08/2012 Sean Cullinan (informal, no minutes)

Meeting with Ekurhuleni officials

- 17/07/2012: A meeting was held with Ekurhuleni officials to discuss their requirements and needs for the application. The following persons were present:
 - Elisabeth van der Merwe (Environment)
 - GS van der Merwe (Parks)
 - Nathalie Smal (Stormwater)
 - Gavin Ramaboea (Environment)
 - Pieter Swanepoel (Aerotropolis)
 - Jan Bodenstein (Air Quality and Noise)
 - Musa Ndaba (Town Planning)
 - Daphney Mtala (Town Planning)
 - Derek Mulder (Water and sanitation)
 - Mtho Nkosi (Environment)

Minutes of the meeting is attached in Appendix 6.

- 26/07/2012: Site visit and discussion with Mr. Bodenstein (Air quality and Noise) where it was decided to establish an air quality and noise baseline for the area to enable the monitoring of future change as the current information is not good enough for longer term management.

Meeting with GDARD and officials

- 11/09/2012: The meeting was held to discuss GDARD's delay in responding to the submitted Scoping Report. They responded that they rely on Regulation 9(2) of the EIA Regulations and that they therefore had a full 90 days to respond. We indicated that we did not believe that it was within the spirit of the law. They suggested that is how it is done in GDARD. The following persons were present at the meeting:

- Marius Venter
- Tendani Ramabuda
- Victor Manavhela

7.7. 2nd Open Day

The 2nd Open day was held at the Community Hall, Retire @ Midstream, Midrand Estates on 21 August 2012. Ninety people attended the meeting. The attendance register is attached in Appendix 6. The purpose of the open day was to indicate how issues identified from the comments on the draft Scoping Report was dealt with and also where the process was at, at that the moment. A copy of the process poster is attached in Appendix 6.

7.8. Late comments

Late comments were received on the Draft Scoping Report from the Cullinan family (neighbours) on the following dates:

- 4/09/2012
- 17/08/2012
- 21/08/2012

The letters and responses are attached in Appendix 6 (Register of comments and responses).

It must be noted that the family did not partake in the public participation process of the EIA but preferred to communicate via the applicant. It is our view that it is essentially a matter of arrangementst between neighbours with little or no relevance to the EIA process itself.

8. Description of the need and desirability of the proposed activity

8.1. The mandate of the applicant

The applicant is a property development company whose business it is to produce property that is needed and desired by prospective buyers, who are prepared to pay for the types of property that are produced.

Production, including property development, is concerned only with consumer demand meaning demand for the goods and services for which people will pay either individually or collectively. In the words of the economist Keynes, "Consumption - to repeat the obvious - is the sole end and object of economic activity".

People need shelter and most families would like a home of their own, but developers can only provide land for dwellings that will be paid for. This is obvious for private developers, like the applicant in this instance, who provide serviced urban land for profit. It is less obvious, but also true, when government develops property. Government will do so only if the costs will be covered jointly by individual demand of the buyers or tenants and the collective demand of the state which are expressed in the payment of housing subsidies of some sort or another. It is least obvious but again true when the demand is entirely collective. National roads, for example, will not be built until the government decides to spend tax payer's money on building it or if such projects are funded by user pay mechanisms such as the controversial e-toll scheme in Gauteng.

The individual or collective consumer demands (needs) for development of this nature comes directly from the ultimate consumer. Direct demand arises for consumption goods or, more precisely, for goods yielding consumption services, such as houses, swimming pools, cinemas, car parks, schools, churches and hospitals. The consumer will pay directly for the enjoyment of the services offered by the development, and the developer in estimating demand must directly consider the needs of the consumer.

The development of Midrand Estates is a good example of how these types of needs of consumers translated into development that is demand driven. It was achieved in a way that was well planned and executed. The existing Estates in Midrand Estates include a wide variety of elements that were dictated by the needs of the buyers of properties including:

- An advanced and comprehensive security system;
- A variety of property sizes that provides access to a variety of buyers from young to old;
- Child and educational facilities of the highest standard including baby houses , pre-primary schools, a primary school and a high school;
- A shopping centre;
- Offices;
- A garden centre;
- A filling station;
- Restaurants;
- Four churches;
- Sport facilities that include a gymnasium, tennis courts, cricket ovals, an indoor swimming pool, indoor and outdoor bowls facilities, squash courts, a nine hole short golf course, a driving range and angling ponds/dams;
- A retirement village;
- A clinic and medical centre;
- A 179 bed hospital (in process); and
- Urban parks and green spaces.

The demand for this type of development remains high. The development of the proposed development area will be done in a similar manner to fit in with what has already been done very successfully. It should therefore be regarded as the extension of a successful development concept which is relevant to the needs of a significant sector of the Gauteng community.

8.2. The location context and capturing the value of the site

When a development is considered there are a number of key requirements which must be met. These include:

- That the area of the site will be appropriate;
- That it will have the right kind of physical characteristics for the proposed development;
- That it will have necessary utility services;
- That it will be suitably located in relation to environment, transportation services and existing and proposed development;
- That the right to use it for development can be obtained;

- That any restrictions imposed on its use by the rights and privileges of others, or by public authorities, will not prohibit its use of the desired purpose; and
- That the value of the development will be appropriate to compensate the developer adequately within an acceptable risk framework.

The proposed development site meets all these criteria and is especially well located in the overall development context of Gauteng to provide very good value to customers at very competitive prices. This is borne out by the fact that sales of property in the bigger Midrand Estates continues at one of the best rates of sale in the country during the very difficult recent recession period. Of the 3 000 stands that were available in the existing Midrand Estates only about 50 (0.016%) are still available for sale.

The following further demonstrates the desirability for this type of development in the area:

- It constitutes infill development;
- It falls within an Ekurhuleni Strategic Development Area as indicated in the Metropolitan Spatial Development Framework;
- It is bordered and bisected by several planned provincial roads;
- It is within 3 km of the planned future Gautrain station;
- It is in very close proximity to the Pinedene railway station;
- It is very close to a major gas supply pipeline that bisects Midrand Estates;
- Adequate infrastructure for water supply is already in place;
- Electricity is available on site through an existing substation; and
- Sewage disposal capacity to the nearby ERWAT purification works is already available.

8.3. The needs of the public for the area

The needs of the public for the development of the area are discussed under point 6.12.1 in this report. It is clear that the type of development is in high demand for the following reasons:

- It has an excellent security system that creates a safe environment for families to live in;
- The way it is managed in terms of giving a wide personal choice of building options within a set of basic rules;
- The choice in variety in products form large stands to small units in the retirement village;
- The high quality education and child care facilities in a safe environment;
- The wide range of amenities;

- Affordable for what you get in terms of levies; and
- The ideal location in Gauteng in respect to employment opportunities in wider region.

9. Description of environmental issues and potential impacts

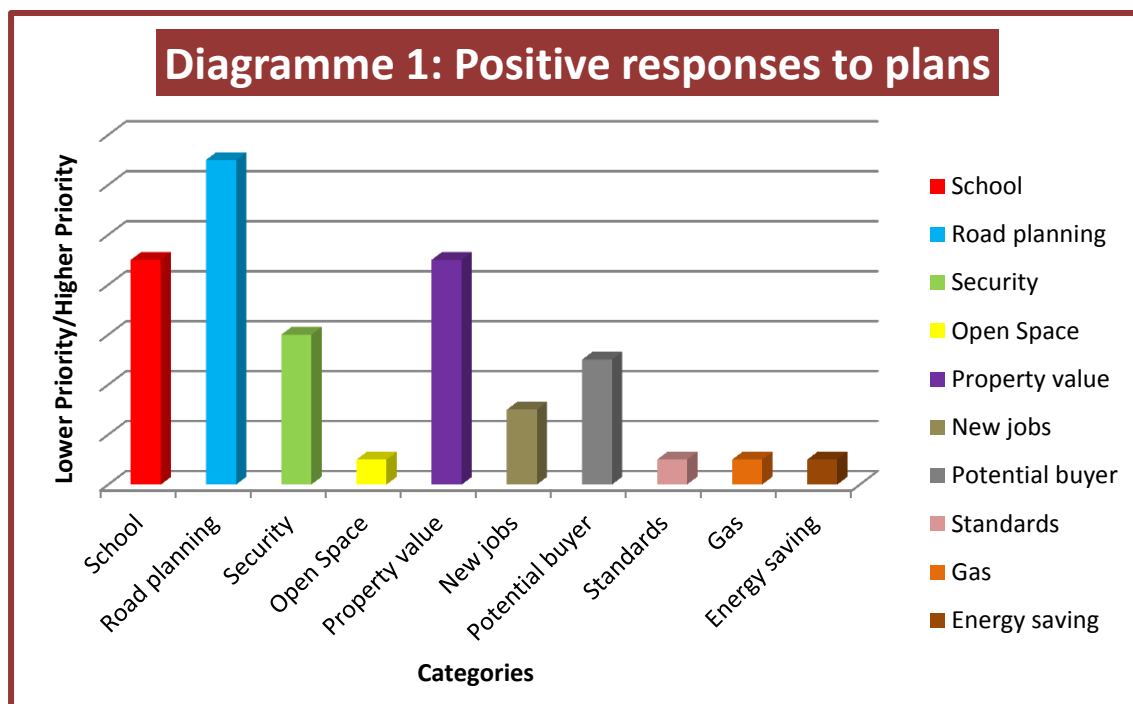
9.1. Initial comments received on advertisement and notices

Sixty three persons registered as interested and affected parties based on the initial advertisements and notices. The issues raised as a result of the advertisement of the application for the proposed development is contained in Appendix 6 which gives a breakdown of the comments (including issues), and responses to the comments.

9.2. Comments received at the 1st public open day

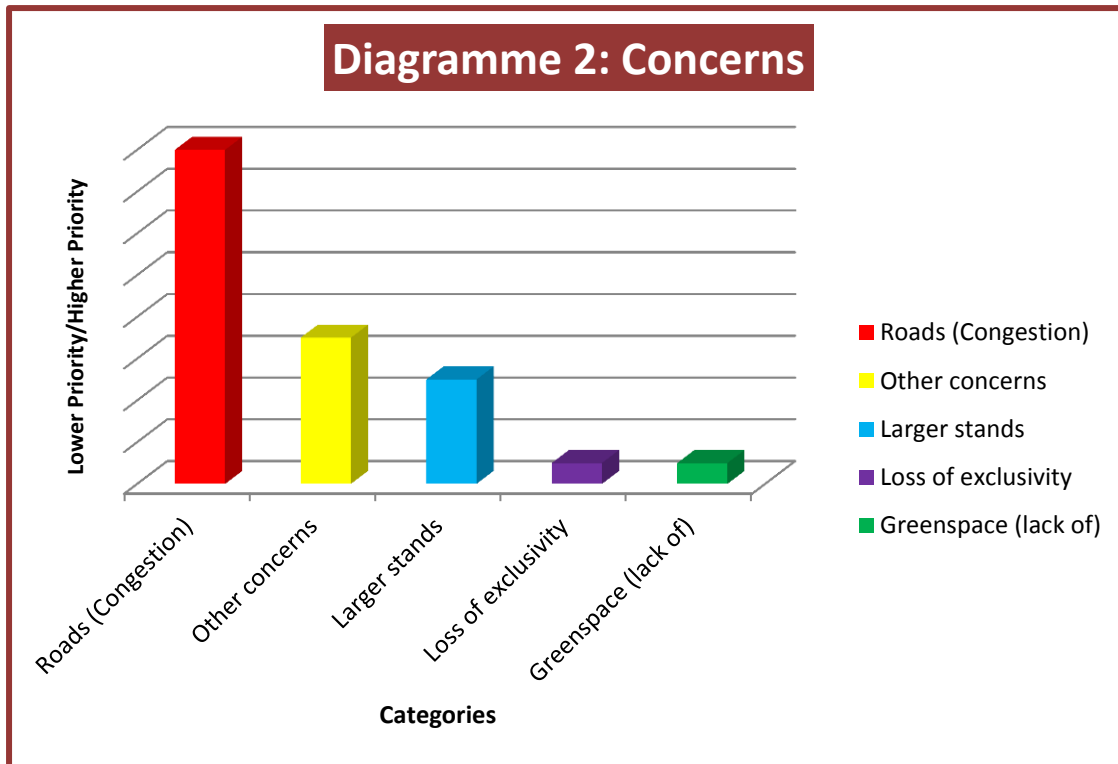
Three hundred persons attended the public open day where they were asked to complete a comments form. A breakdown of the comments received during the public open day is provided in Appendix 6.

The three alternatives, as described under point 5, were presented at the public open day and participants were asked to indicate their preferences. In addition, several interested and affected parties also indicated their views on the proposed development.



(The diagramme reflects the positive levels of support relative to each other)

The concerns that were expressed are represented in *Diagramme 3: Concerns* below:



(The diagramme reflects the concerns relative to each other)

9.3. Comments received on the draft Scoping Report

Comments received on the draft Scoping Report is contained in Appendix 6 and once again divided into comments received, responses to the comments and potential impacts, as relevant.

In considering the comments, issues, responses and identified potential impacts, one has to realise that there has been a progression from the early participation where very little information was available to the participation in the review of the draft Scoping Report where significant information was available. This may lead to changes in issues and identified impacts, or at least changes in emphasis (severity of impacts). As the layout and design is also affected by the EIA process in an iterative and interactive manner the proposal is optimised which will lead to further changes in the potential impacts.

9.4. Identified potential impacts

Identified potential impacts are attached in Appendix 6. The key concerns, issues and potential impacts however relate to:

- Impacts that may result from increase in traffic volumes, particularly on Brakfontein Road;
- The potential future negative impacts that may result from the construction of the K111 provincial road and the uncertainty about if and when the province plans to build the road; and
- The potential impacts on the community as a result of inadequate provision of schools.

The other concerns, issues and potential impacts identified are secondary in nature.

9.5. Other issues

The extensive comments made by Shoprite have been addressed in this report to the extent that it is possible. It must however be pointed out that there is a current dispute between Shoprite and the applicant as well as several other parties. We have consulted with the applicant and Shoprite about this and are in the process of trying to get them to resolve their on-going disputes outside the context of the EIA.



Public open day

10. Alternatives

10.1. Description of feasible and reasonable alternatives

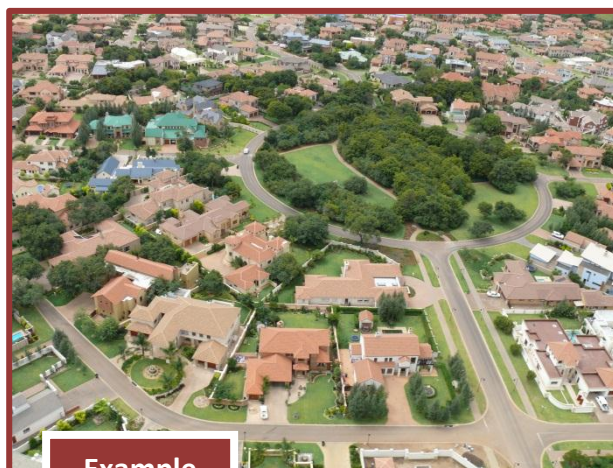
10.1.1. Introduction

The development site is located in the heart of the growth area of central Gauteng. It has a very high development value due to its current location in respect to the local and regional development context of the surrounding area. Studies to date have indicated that the site is imminently suitable for development and that it can accommodate a variety of types of development from a technical perspective. Three basic feasible and reasonable alternatives have been identified. The so-called “no development option” is not considered as a feasible or reasonable alternative due to the inherent suitability of the area for development.

10.1.2. Low to medium density development

A plan of *Alternative 1: Low to Medium Density Development* is indicated on Map 2. The alternative is discussed in detail under point 4. It not repeated here.

This alternative is preferred by the applicant and the majority of interested and affected parties (more than 95%).



Example

10.1.3. Medium to high density development

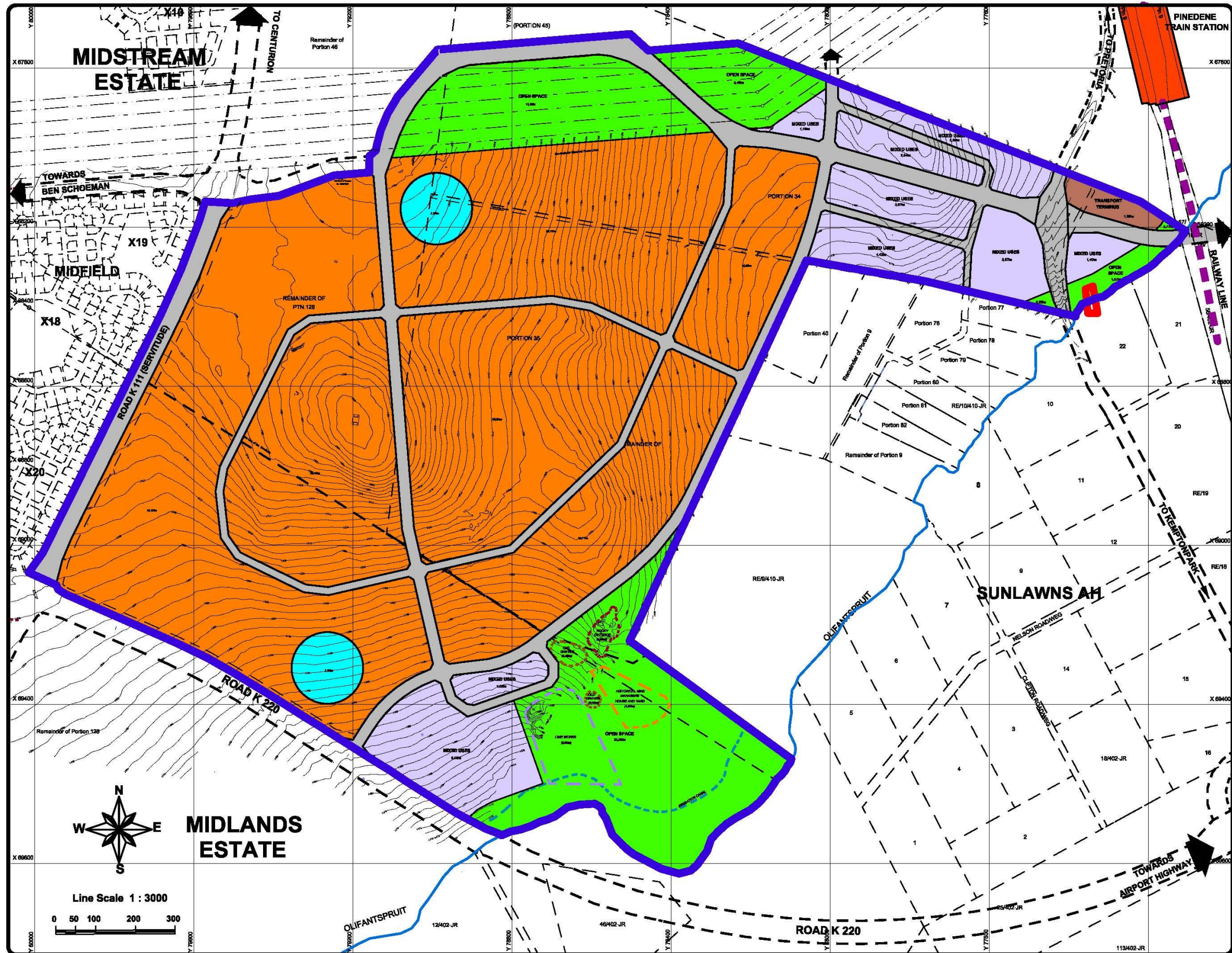
A conceptual plan of *Alternative 2: Medium to high density development* is indicated on Map 15. More detail will be developed during the EIA phase.

This alternative is not favoured by the developer and is also largely rejected by the majority of interested and affected parties. It comprises of the following:

- A medium to high density residential area with 4 000 stands and provision for two government schools;
- An area of mixed use including medium to high density residential, commercial, retail and ancillary land uses (the same as for Alternative 1);
- A transport terminus that will facilitate intermodal functions using the existing Pinedene railway station as a key element (the same as for Alternative 1);
- An open space and mixed use area that will contain conservation elements (both natural and cultural), passive recreational open space, recreation and related functional elements; and
- Internal roads that will link the various elements of the development internally as well as external access points.

10.1.4. Selling the property to another party for development

This third alternative is the least favoured by the developer and is also completely rejected by the interested and affected parties. No layout is planned for this alternative as it will have to be done by the buyer of the property. It is however foreseen that it might contain a basket of development rights similar to Alternative 2. It may also be left as is without any further development in the foreseeable future.



Map 15

PROPOSED TOWNSHIP MIDSTREAM RIDGE

- LEGEND**
- E I A BOUNDARY (293,21ha)
 - MEDIUM/HIGH DENSITY RESIDENTIAL WITH ANCILLARY USES (187,90ha x 20units/ha = 3368 units)
 - MIXED USES (OFFICES, COMMERCIAL, RESTRICTED RETAIL, FILLING STATION, CHURCHES, ENTERTAINMENT, RESTAURANTS AND RESIDENTIAL.) (31,48ha)
 - SCHOOL (5,08ha)
 - TRANSPORT TERMINUS (1,69ha)
 - OPEN SPACES INCLUDING COMMUNITY RELATED USES (46,77ha)
 - ROADS (40,31ha)
 - WALK WAYS
 - OLD BRIDGE
 - HISTORICAL MINE MANAGERS HOUSE AND YARD
 - IRRIGATION CANAL
 - LIME WORKS
 - OLD GRAVES
 - ROCKY OUTCROP

PlanDev House
 Highway Office Park
 Charles de Gaulle Crescent
 Midrand
 CENTURION
 167710, Centurion, 1674
 Tel: (011) 965 2000/1/2
 Fax: (011) 965 2333
 e-mail: plandev@plandev.com

PLANDEV
 Town and Regional Planners
 State-en Streekopanners

SCALE : 1 : 3000 DATE: AUGUST 2012

11. Advantages and disadvantages of alternatives to the proposed options

11.1. Alternative 1: Low to medium density development

11.1.1. Advantages

The advantages of Alternative 1 are:

- The development (1200 stands) will form a natural extension to the existing Midrand Estates with similar densities, types of development, security and general ambiance;
- A significant natural corridor is incorporated in the layout;
- It will lead to private sector investment in a school;
- It will make use of existing capacities for utility services (water, sewage and electricity) with minimal need for further investment; and
- It will take advantage of its position within the road planning context for the area as the development will fall within the carrying capacity of roads being planned in the area.

11.1.2. Disadvantages

The disadvantage of Alternative 1 is:

- The site is capable of higher density and therefore more units on same area of land.
- It would be less profitable for the applicant especially as his initial investment risks will be higher.

11.2. Alternative 2: Medium to high density development

11.2.1. Advantages

The advantage of Alternative 2 is:

- Due to the significantly higher density (4000 stands) many more units can fit onto the available land than in Alternative 1.
- It would be significantly more profitable for the applicant as it will require less initial investment risk.

11.2.2. Disadvantages

The disadvantages of alternative 2 are:

- It will introduce a completely different type of development to the area that will not fit in with the rest of Midrand Estates;
- Due to the nature of the development it would not be appropriate or financially feasible to build a privately funded school as part of the development;
- The two public schools for which provision has been made will have to be funded by government.
- Significant government investment will be required in the short term to build provincial roads.
- Bulk water supply would have to be increase with the construction of additional bulk water storage facilities.
- The sewage treatment works will have to be expanded to make provision for at least another 1000 households.
- There will be less natural open space left in the development (approximately 25ha less)

11.3. Alternative 3: Selling the property to another party

11.3.1. Advantages

It is highly debatable whether there would be any advantages to this alternative. If the property is not developed all of the natural open space will remain. If it is developed by whoever buys it, its advantages and disadvantages can be expected to be somewhere between that of Alternative 1 and Alternative 2.

11.3.2. Disadvantages

The disadvantage of this alternative is that there will be complete uncertainty about the future of the area. This will also impact on the property values and private investment in the greater area surrounding the site.

12. The methodology that was used for assessing impacts and alternatives

The methodology used for the assessment of impacts is the one that has been developed and use by the University of Grahamstown. While it covers all the elements required in terms of regulation 31(2)(l) it also ultimately answers the question of what the residual environmental impact is that remains. The assessment of potential cumulative impacts is done separately at the end as some cumulative impacts are synergistic in nature and require the consideration of several direct and indirect impacts.

Identified impacts were assessed against the following criteria:

- Description of the impact (nature of the impact);
- Temporal scale (duration of the impact);
- Spatial scale (extent of the impact);
- Risk or likelihood (probability of the impact actually occurring);
- Degree of confidence or certainty (including assumptions, uncertainty and gaps in knowledge)
- Severity or benefits; (the degree to which the impact may cause irreplaceable loss of resources);

[The relationship of the identified impact to the temporal scale, spatial scale and the severity were combined to describe the overall rating, namely the significance.]

- Significance²⁴ (How should the impact be viewed in the context of assessment of significant impacts);
- Possibility to avoid, minimize, mitigate or compensate (the degree to which the impact can be mitigated); and
- Unavoidable residual impact that can be expected (the remaining impact that cannot be avoided).

²⁴ The relationship of the identified impact to the temporal scale, spatial scale and the severity were combined to describe the overall rating, namely the significance.

12.1. Definition of evaluation criteria

The criteria are defined as:

(a) Temporal scale, where the temporal scale defines the significance of the impact at various time scales, as an indication of the duration of the impact. These are:

- Short term – less than 5 years. Many construction phase impacts are of a short duration.
- Medium term – between 5 and 20 years.
- Long term – between 20 and 40 years (a generation) and from a human perspective almost permanent.
- Permanent – over 40 years and resulting in a permanent and lasting change that will always be there.

(b) Spatial scale, where the spatial scale defines physical extent of the impact. These are:

- Individual – this scale applies to a person or persons in and around the study area.
- Localised – at localised scale and a few hectares in extent. The specific area to which it refers is defined in the chapter in which it appears.
- Study area – the proposed area and its immediate environs.
- District.
- Regional – Province
- National – Country.

(c) Risk or likelihood, where the risk or likelihood of all impacts taking place as a result of project actions differs. The categories have been determined as follows:

- Very unlikely to occur – the chance of these impacts occurring is extremely slim.
- Unlikely to occur – the risk of these impacts occurring is slight.
- May occur – the risk of these impacts is more likely, although it is not definite.
- Will definitely occur – there is no chance that this impact will not occur.

(d) The degree of confidence or certainty, where it is necessary to state the degree of certainty or confidence with which one has predicted the significance of an impact. For

this reason, a 'degree of certainty' scale has to be provided to enable the reader to ascertain how certain the specialists are of their assessment of significance:

- Definite – more than 90% of a particular fact. To use this, one will need to have substantial supportive data.
- Probable – over 70% sure of a particular fact, or of the likelihood of that impact occurring.
- Possible – only over 40% sure of a particular fact or of the likelihood of an impact occurring.
- Unsure – less than 40% sure of a particular fact or of the likelihood of an impact occurring.

(e) Severity/beneficial rating scale, where the severity/beneficial scale will be used to evaluate how severe negative impacts would be, or how beneficial positive impacts would be on a particular affected system (for ecological impacts) or a particular affected party.

For negative impacts:

- Very severe – An irreversible and permanent change to the affected system(s) or party(ies).
- Severe – Long term impacts on the affected system(s) or party(ies).
- Moderately severe – Medium to long term impacts on the affected system(s) or party(ies).
- Slight – Medium or short term impacts on the affected system(s) or party(ies).
- No effect – The system(s) or party (ies) are not affected by the proposed development.

For positive impacts:

- Very beneficial – A permanent and very substantial benefit to the affected system(s) or party(ies).
- Beneficial – A long term impact and substantial benefit to the affected system(s) or party(ies).
- Moderately beneficial – A medium to long term impact of real benefit to the affected system(s) or party(ies).

(f) Significance, which normally require a description to clarify the rating where the following classification was used:

- Very high – These impacts would be considered by society as constituting a major and usually permanent change to the (natural and/or social) environment, and usually result in severe or very severe effects, or beneficial or very beneficial effects.
- High – These impacts will usually result in a long term effects on the social and/or natural environment. Impacts rated as HIGH will need to be considered by society as constituting an important and usually long term change to the (natural and/or social) environment. Society would probably view these impacts in a serious light.
- Moderate – These impacts will usually result in medium to long term effects on the social and/or natural environment. Impacts rated as MODERATE will need to be considered by society as constituting a fairly important and usually medium term change to the (natural and/or social) environment. These impacts are real but not substantial.
- Low – These impacts will usually result in medium to short term effects on the social and/or natural environment. Impacts rated as LOW will need to be considered by the public and/or the specialist as constituting a fairly unimportant and usually short term change to the (natural and/or social) environment. These impacts are not substantial and are likely to have little real effect.
- No significance – a There are no primary or secondary effects at all that are important to specialists or the public.

(g) Possibility to avoid, minimise, mitigate, or compensate, where a description is given of the extent to which the severity and significance of negative impacts can be reduced and the benefits of positive impacts can be maximised. These normally form the basis for stipulations in the Environmental management plan or for conditions of authorisation.

(h) Unavoidable residual impact that can be expected after avoidance, minimisation, mitigation or compensation measures have been introduced. This is normally in the form of a short statement and is used in formulating the Impact Statement.

12.2. Identification of potential impacts

12.2.1. Impacts that were identified prior to the Draft Scoping Report

The following potential impacts²⁵ were identified prior to the submission of the Scoping Report:

PII 1²⁶. The potential increase in traffic on Brakfontein Road emanating from the proposed development may contribute to further increase in traffic on Brakfontein Road within Midrand Estates.

PII 2. The potential increase in traffic on Brakfontein Road emanating from the proposed development may contribute to further unacceptable increase in traffic on Brakfontein Road between Midrand Estates and the N1 Highway.*

PII 3. The current “oversubscription”/density of the development in relation to availability of infrastructure, especially roads, may have a significant negative impact on the living experience of current residents that will be exacerbated by the proposed development.

PII 4. The development of further extensions in the larger Midrand Estates may have a negative impact on the past/present exclusivity experienced by existing residents, especially in Midstream Estate.

PII 5. The construction of the K111 provincial road may have a significant impact on the privacy, safety and sense of place of existing residents who live along its alignment if the necessary mitigation measures are not put in place.

PII 6. The influx of builders and construction workers may lead to instances of crime in the existing estates.

PII 7. Complaints/concerns of residents are not adequately dealt with by the homeowner associations and the applicant, that may result in identified impacts/concerns not being addressed.

PII 8. Increased traffic congestion on Brakfontein Road may lead to stock losses for Shoprite, its suppliers and producers.

²⁵ The impacts is based on inputs received on the advertisement and notices of the project as well as the first public open day where the project was explained to interested and affected parties. For more detail please consult the Comments and Responses Register in Appendix 6.

²⁶ PII means impacts that were identified early in the process (pre-Draft Scoping phase) before layouts and alternatives were available to interested and affected parties.

PII 9. Delays caused by increased traffic on Brakfontein Road may lead to negative impacts on agreements between Shoprite and its suppliers and producers.

PII 10. The proposed development may have a negative impact on biodiversity conservation.

PII 11. The proposed development may be negatively affected by ambient air quality conditions in the area.

PII 12. Noise emanating from the weather station may have a negative impact on the proposed development.

PII 13. Noise emanating from new roads may have a negative impact on existing residential areas.

9.2.2. Impacts that were identified on the draft Scoping Report prior to the submission of the Scoping report

The following potential impacts²⁷ were identified after the interested and affected parties had the opportunity to review the Draft Scoping Report:

PSR 1²⁸. School related traffic may cause congestion on some of the roads in the area, especially during morning peak traffic periods.

PSR2. The construction of the K111 provincial road may have a significant impact on the privacy, safety and sense of place of existing residents who live along its alignment if the necessary mitigation measures are not put in place.

PSR 3. There may be unknown latent development rights holders along Brakfontein Road that also need to be considered as the future exercising of their rights may cause further negative cumulative impacts on the traffic situation on Brakfontein Road.*

PSR 4. The EIA process is potentially being used as a mechanism to further a current dispute between the applicant and the local residential estates and Shoprite in respect to a point of access along Brakfontein Road.

²⁷ The impacts is based on inputs received on the advertisement and notices of the project as well as the first public open day where the project was explained to interested and affected parties. For more detail please consult the Comments and Responses Register in Appendix 6.

²⁸ PSR means impacts identified after the interested and affected parties had the opportunity to inspect and comment on the draft Scoping Report.

PSR 5. The potential increase in traffic on Brakfontein road emanating from the proposed development may contribute to further increase in traffic on Brakfontein Road.*

PSR 6. The proposed development may have significant negative social and economic impacts on the surrounding area, and even nationally in the case of Shoprite.*

PSR 7. An increase in traffic along Brakfontein Road may result in negative impacts for Shoprite, including:

- Loss of revenue due to delays;
- Loss of market share due to increase inefficiency caused by delays; and
- Higher costs to Shoprite suppliers and producers due to delays.

PSR 8. The construction of infrastructure for the bulk transportation of water, sewage or stormwater may have a significant negative impact on the environment.*

PSR 9. The provision of water, sewage and stormwater may result in cumulative impacts if added to the current impacts on these services as a result of existing development. *

PSR 10. The better utilisation of currently available infrastructure and services may have positive impacts as it would increase the efficiency of use of existing infrastructure that cannot be achieved at a different location.

PSR 11. The clearance of indigenous vegetation may have a negative impact on the conservation of biodiversity.

PSR 12. The proposed development may be contrary to some of the principles contained in section 2 of NEMA which may have a negative impact on environmental management at local, provincial and national levels.

PSR 13. The proposed development may not be the “best practicable environmental option” which may lead to unnecessary negative impacts (as yet unspecified) on the environment.

PSR 14. The proposed development may generate an undesired influx of people (job seekers) into the area.

PSR 15. The proposed development may generate new employment opportunities for a significant number of people.

PSR 16. Waste removal from the proposed new development may have a negative impact on available airspace in landfill sites.

PSR 17. The income generated from delivering services such as waste removal from the proposed development as well as property taxes may have a significant beneficial impact on the finances of the Ekurhuleni Metropolitan Municipality.

PSR 18. The timing of the proposed development may be inappropriate.

PSR 19. The proposed development may not be appropriate in a strategic level and/or local level in terms of what the society/community requires.

PSR 20. There may not be adequate current capacity in services for the development (water, sewage, electricity, etc.). *

PSR 21. The proposed development may have negative impacts/implications on the infrastructure planning of Ekurhuleni and Tshwane Metropolitan Municipalities.

PSR 22. The physical and monetary contributions that the development will make to infrastructure may benefit surrounding communities and areas.

9.3. Assessment of potential impacts

Note that potential cumulative impacts are indicated with a*.

9.3.1. Assessment of potential impacts identified prior to Scoping

(a) Assessment of Impact PII 1

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The potential increase in traffic on Brakfontein Road emanating from the proposed development may contribute to further increase in traffic on Brakfontein Road within Midrand Estates.

Temporal scale:

Permanent, if it is left unmitigated and no further road development occur in future in the area.

Spatial scale:

Localised, as the impact will be within the existing area of Midrand Estates.

Risk or likelihood:

Will definitely occur if it is left unmitigated and no further road development occurs in future in the area.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Moderately severe, as it would make traffic flow very slow during peak morning and afternoon periods.

Significance:

Moderate, as it would primarily be a nuisance factor for residents of Midrand Estates.

Possibility to avoid, minimise, mitigate or compensate:

The impact can be mitigated to a very large extent by ensuring that the road system in and around Midrand Estates is improved and developed as planned.

Unavoidable residual impact that can be expected:

The traffic residual impact could mean that the traffic situation on Brakfontein Road within the estate may deteriorate from a current LOS²⁹ of B to a LOS of C (which is still acceptable) by 2017 after which it will be relieved again

²⁹ **Level of Service (LOS):** Traffic Impact Studies evaluate the potential impact of a specific development on the existing system. Acceptable level of service standards for each intersection evaluated must be in accordance with the table below (or similar system). When the LOS without development is LOS A, B and C, the minimum acceptable projected LOS shall be LOS C for all movement within a specific intersection. When the LOS without development is LOS D, E or F the minimum acceptable projected LOS shall be equal to the LOS without development.

(permanently) due to the planned construction of new roads by that time. The unavoidable residual impact will therefore be moderate and temporary limited to a period of approximately 3 years.

b. Alternative 2: High Density Development (preferred alternative)

Description of potential impact:

The potential increase in traffic on Brakfontein Road emanating from the proposed development may contribute to further increase in traffic on Brakfontein Road within Midrand Estates.

Temporal scale:

Permanent, if it is left unmitigated and no further road development occur in future in the area.

Spatial scale:

Localised, as the impact will be within the existing area of Midrand Estates.

Risk or likelihood:

Will definitely occur if it is left unmitigated and no further road development occurs in future in the area.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Very severe, as it would make traffic flow very slow during peak morning and afternoon periods.

Significance:

Very high, as it would primarily be an extreme nuisance factor for residents of Midrand Estates.

Possibility to avoid, minimise, mitigate or compensate:

It will be difficult to mitigate the impact unless the Gautrans commits itself to building all the proposed provincial roads (K Routes) between now and 2017.

Unavoidable residual impact that can be expected:

The residual traffic impact could mean that the traffic situation on Brakfontein Road within the estate may deteriorate from a current LOS of B to a LOS of F (which is unacceptable) by 2017 unless all the K Routes in the area is developed by then. The unavoidable residual impact will therefore be very severe and probably permanent given the current low level of investment in new roads by Gautrans. This may be a FATAL FLAW.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

The potential increase in traffic on Brakfontein Road emanating from the proposed development may contribute to further increase in traffic on Brakfontein Road within Midrand Estates.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(b) Assessment of Impact PII 2

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The potential increase in traffic on Brakfontein Road emanating from the proposed development may contribute to further unacceptable increase in traffic on Brakfontein Road between Midrand Estates and the N1 Highway.*

Temporal scale:

Permanent, if it is left unmitigated and no further road development occur in future in the area.

Spatial scale:

Localised, as the impact will be within the existing area of Midrand Estates.

Risk or likelihood:

Will definitely occur if it is left unmitigated and no further road development occurs in future in the area.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Moderately severe, as it would make traffic flow very slow during peak morning and afternoon periods.

Significance:

Moderate, as it would primarily be a nuisance factor for residents of Midrand Estates.

Possibility to avoid, minimise, mitigate or compensate:

The impact can be mitigated to a very large extent by ensuring that the road system in and around Midrand Estates is improved and developed as planned.

Unavoidable residual impact that can be expected:

The traffic residual impact could mean that the traffic situation on Brakfontein Road between the estate and the N1 highway may deteriorate from a current LOS of B to a LOS of C (which is still acceptable) by 2017 after which it will be relieved again (permanently) due to the planned construction of new roads by that time. The unavoidable residual impact will therefore be moderate and temporary limited to a period of approximately 3 years.

b. Alternative 2: High Density Development

Description of potential impact:

The potential increase in traffic on Brakfontein Road emanating from the proposed development may contribute to further unacceptable increase in traffic on Brakfontein Road between Midrand Estates and the N1 Highway.*

Temporal scale:

Permanent, if it is left unmitigated and no further road development occur in future in the area.

Spatial scale:

Localised, as the impact will be within the existing area of Midrand Estates.

Risk or likelihood:

Will definitely occur if it is left unmitigated and no further road development occurs in future in the area.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Very severe, as it would make traffic flow very slow during peak morning and afternoon periods.

Significance:

Very high, as it would be an extreme nuisance factor for residents of Midrand Estates and other users of Brakfontein Road.

Possibility to avoid, minimise, mitigate or compensate:

It will be difficult to mitigate the impact unless the Gautrans commits itself to building all the proposed provincial roads (K Routes) between now and 2017.

Unavoidable residual impact that can be expected:

The traffic residual impact could mean that the traffic situation on Brakfontein Road within the estate may deteriorate from a current LOS of B to a LOS of F (which is unacceptable acceptable) by 2017 unless all the K Routes in the area is developed by then. The unavoidable residual impact will therefore be very severe and probably permanent given the current low level of investment in new roads by Gautrans. This may be a FATAL FLAW.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

The potential increase in traffic on Brakfontein Road emanating from the proposed development may contribute to further unacceptable increase in traffic on Brakfontein Road between Midrand Estates and the N1 Highway.*

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(c) Assessment of Impact PII 3

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The current “oversubscription”/density of the development in relation to availability of infrastructure, especially roads, may have a significant negative impact on the living experience of current residents that will be exacerbated by the proposed development.

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

Very unlikely to occur, as bulk services for the area have already been planned into the infrastructure for the area and will be available on site at the start of construction. Confirmation of availability of services from the relevant bulk service providers is attached in Appendix 7. The plan for the development of roads in and around Midrand Estates that will be implemented over the next ten years will ensure a road network that is sufficient and appropriate for the area and is attached in Appendix 1.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Beneficial as the proposed development will ensure that existing available infrastructure is used optimally without any wastage.

Significance:

High, as the efficient use of available resources and infrastructure will eliminate wastage and ensure that bulk service providers are paid in full for the services they deliver.

Possibility to avoid, minimise, mitigate or compensate:

Due to a modern technological approach to the development, resource use will be further enhanced through “green” initiatives including the provision of online gas to residences and the use of LED lights in streetlights and in public/shared places.

Unavoidable residual impact that can be expected:

No unavoidable negative impacts are expected.

b. Alternative 2: High Density Development

Description of potential impact:

The current “oversubscription”/density of the development in relation to availability of infrastructure, especially roads, may have a significant negative impact on the living experience of current residents that will be exacerbated by the proposed development.

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

Will definitely occur, as bulk services for the area have already been planned into the infrastructure for the area for a lower density. Additional bulk services in respect to water, sewage and electricity will have to be constructed, the most important being expansions to the local sewage works. All the K routes in the area will also have to be built by Gautrans by 2017 to take the increased load.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Very severe negative impacts if the relevant authorities are unable to supply the required bulk infrastructure.

Significance:

High, as the current bulk services cannot accommodate a high density development.

Possibility to avoid, minimise, mitigate or compensate:

The avoidance of this impact would require significant investment from local and

provincial government in provincial roads and sewerage works.

Unavoidable residual impact that can be expected:

Severe shortages in all elements can be expected unless there is significant investment in infrastructure by the local and provincial governments. This may be a FATAL FLAW.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

The current “oversubscription”/density of the development in relation to availability of infrastructure, especially roads, may have a significant negative impact on the living experience of current residents that will be exacerbated by the proposed development.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(d) Assessment of Impact PII 4

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The development of further extensions in the larger Midrand Estates may have a negative impact on the past/present exclusivity experienced by existing residents, especially in Midstream Estate.

Temporal scale:

Permanent.

Spatial scale:

Local within Midrand Estates.

Risk or likelihood:

Unlikely to occur.

Degree of confidence or certainty:

Probable as the new development will be developed as a similar estate to the other existing estates in Midrand Estates.

Severity or benefits:

No effect.

Significance:

No significance.

Possibility to avoid, minimise, mitigate or compensate:

N/A.

Unavoidable residual impact that can be expected:

The development of the preferred alternative will ensure that a different type of development with different standards does not encroach on Midrand Estates in future. This has important positive implications for the sense of place of the estates as a whole.

b. Alternative 2: High Density Development

Description of potential impact:

The development of further extensions in the larger Midrand Estates may have a negative impact on the past/present exclusivity experienced by existing residents, especially in Midstream Estate.

Temporal scale:

Permanent.

Spatial scale:

Local within Midrand Estates.

Risk or likelihood:

May occur.

Degree of confidence or certainty:

Probable.

Severity or benefits:

Severe. High density development will introduce a completely different character to the area which will have a severe negative impact on the character of the area as a whole.

Significance:

High.

Possibility to avoid, minimise, mitigate or compensate:

N/A.

Unavoidable residual impact that can be expected:

The development of the high density alternative will introduce a different type of development with different standards. The opinion survey³⁰ that was undertaken as part of the EIA process clearly indicates the strong opposition to the high density alternative.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

The development of further extensions in the larger Midrand Estates may have a

³⁰ Attached in Appendix 4.

negative impact on the past/present exclusivity experienced by existing residents, especially in Midstream Estate.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(e) Assessment of Impact PII 5

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The construction of the K111 provincial road may have a significant impact on the privacy, safety and sense of place of existing residents who live along its alignment if the necessary mitigation measures are not put in place.

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

May occur. The development of the K111 route will not be done as part of the development proposal and is not planned to be developed by the applicant in future. It is a provincial road servitude which will have to be assessed along with the rest of the route in future if and when the provincial roads authority (Gautrans) decides to develop the road.

Degree of confidence or certainty:

Unsure.

Severity or benefits:

The construction of the K111 Route would have severe negative impacts on residents of Midrand Estates that are located next to the road.

Significance:

High. The uncertainty about the development of the provincial road network has a high negative impact on the development of the area, the confidence of residents and on the investment confidence of prospective buyer in the area.

Possibility to avoid, minimise, mitigate or compensate:

The impact of the road (although it is not part of this EIA) if built can be mitigated significantly if the proponent at the time applies best practice design techniques that may include lowering the road into a cutting, building earth berms and/or walls between the road and the residential areas, planting vegetation buffers and by imposing a low speed limit.

Unavoidable residual impact that can be expected:

It is not possible to determine the residual impact in this instance as the K111 road is not part of the planning of the Midrand Estates or the application and is, therefore, entirely a matter for Gautrans to address in future if they should decide to build the road.

b. Alternative 2: High Density Development

Same as for Alternative 1.

c. Alternative 3: Selling the property for development or conservation by someone else

Same as for Alternative 1.

(f) Assessment of Impact PII 6

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The influx of builders and construction workers may lead to instances of crime in the existing estates.

Temporal scale:

Medium term as the construction period is envisaged to last until approximately 2022.

Spatial scale:

Local, limited to the existing Midrand Estates and direct neighbours.

Risk or likelihood:

May occur. Due to the security systems that are in place at all the estates in Midrand Estates, which will be replicated at the proposed development the risk or likelihood is small. The security record of Midrand Estates is excellent and unrivalled in South Africa.

Degree of confidence or certainty:

Certain.

Severity or benefits:

No effect.

Significance:

No significance.

Possibility to avoid, minimise, mitigate or compensate:

N/A.

Unavoidable residual impact that can be expected:

N/A.

b. Alternative 2: High Density Development

Description of potential impact:

The influx of builders and construction workers may lead to instances of crime in the

existing estates.

Temporal scale:

Medium term as the construction period is envisaged to last until approximately 2022.

Spatial scale:

Local, limited to the existing Midrand Estates and direct neighbours.

Risk or likelihood:

May occur as the security systems that are in place at all the current estates in Midrand Estates will not necessarily be replicated as the land will be sold off in portions for development by outside developers.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Moderately severe.

Significance:

Moderate.

Possibility to avoid, minimise, mitigate or compensate:

If land is sold off security criteria will form part of the conditions of sale.

Unavoidable residual impact that can be expected:

There may be an increase in crime that will be difficult to manage as the management of the development area will be dependent all the developers together that buy portions of land for development.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

The influx of builders and construction workers may lead to instances of crime in the existing estates.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(g) Assessment of Impact PII 7

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

Complaints/concerns of residents are not adequately dealt with by the home owner associations and the applicant, which may result in identified impacts/concerns not being addressed.

Temporal scale:

Short term.

Spatial scale:

Local limited to residents of Midrand Estates

Risk or likelihood:

Unlikely to occur as there is ample opportunity for open and transparent communication through the EIA process and also with the respective home owner associations. There is, however, always the chance that there may not be agreement between different parties in respect to an issue and that that may be seen as complaints/concerns not being adequately addressed. The articles of establishment and the rules of the respective home owner associations provide for processes and procedures to deal with such matters. This matter cannot be dealt

with in the EIA process and is therefore not regarded as potential impact any further.

Degree of confidence or certainty:

N/A.

Severity or benefits:

N/A.

Significance:

N/A.

Possibility to avoid, minimise, mitigate or compensate:

N/A.

Unavoidable residual impact that can be expected:

N/A.

b. Alternative 2: High Density Development

Same as for Alternative 1.

c. Alternative 3: Selling the property for development or conservation by someone else

Same as for Alternative 1.

(h) Assessment of Impact PII 8

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

Increased traffic congestion on Brakfontein Road may lead to stock losses for Shoprite Checkers, its suppliers and producers.

Temporal scale:

Short term.

Spatial scale:

National.

Risk or likelihood:

Very unlikely to occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

No effect to slight.

Significance:

Low significance.

Possibility to avoid, minimise, mitigate or compensate:

The applicant and Shoprite Checkers have agreed to find a mutually beneficial solution to the problem of Shoprite Checkers trucks that have to make a right turn across oncoming traffic from the Midrand Estates direction and the impact that the anticipated increase of traffic from the proposed development could have on the already difficult situation for all parties concerned³¹. A traffic impact assessment is being done (additional to what is being done for this EIA) to suggest a long term solutions to system problems in the local road network and to suggest a plan for the future development of roads in the area. This potential impact can therefore be avoided altogether provided that all parties agree to a solution.

Unavoidable residual impact that can be expected:

³¹ See letter GAUT: 002/11-/E0268 of 1 August 2012 addressed to GDARD attached in Appendix 6.

No residual impact is expected to occur.

b. Alternative 2: High Density Development

Same as for Alternative 1.

c. Alternative 3: Selling the property for development or conservation by someone else

Same as for Alternative 1.

(i) Assessment of Impact PII 9

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

Delays caused by increased traffic on Brakfontein Road may lead to negative impacts on agreements between Shoprite and its suppliers and producers.

Temporal scale:

Short term.

Spatial scale:

National.

Risk or likelihood:

Very unlikely to occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

No effect to slight.

Significance:

Low significance.

Possibility to avoid, minimise, mitigate or compensate:

The applicant and Shoprite Checkers have agreed to find a mutually beneficial solution to the problem of Shoprite Checkers trucks that have to make a right turn across oncoming traffic from the Midrand Estates direction and the impact that the anticipated increase of traffic from the proposed development could have on the already difficult situation for all parties concerned³². A traffic impact assessment is being done (additional to what is being done for this EIA) to suggest a long term solutions to system problems in the local road network and to suggest a plan for the future development of roads in the area. This potential impact can therefore be avoided altogether provided that all parties agree to a solution.

Unavoidable residual impact that can be expected:

No residual impact is expected to occur.

b. Alternative 2: High Density Development

Same as for Alternative 1.

c. Alternative 3: Selling the property for development or conservation by someone else

Same as for Alternative 1.

(j) Assessment of Impact PII 10

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The proposed development may have a negative impact on biodiversity conservation.

Temporal scale:

Permanent.

Spatial scale:

³² See letter GAUT: 002/11-/E0268 1 August 2012 addressed to GDARD attached in Appendix 6.

Localised to the proposed development site itself.

Risk or likelihood:

The impact will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Moderately severe (see reason on the notes under Significance below).

Significance:

High, an area of 111ha of 186.5ha primary natural vegetation will be removed by the proposed development and 75ha will be incorporated as natural open space in the development. The natural vegetation of the site consists almost entirely of Carltonville Dolomite Grassland with small patches of Open Woodland, Floodplain Grassland and Riparian Forest. The entire extent of Floodplain Grassland and Riparian Forest will be contained in natural open space within the development area. Carltonville Dolomite Grassland is classified as vulnerable due to the small area that is currently formally protected, mostly in the Cradle of Humankind World heritage Site. It however occurs widely over a large area within and outside urban areas with approximately 76% (693 463ha) of the original extent still remaining. Specialist studies (attached in Appendix 3) confirmed that it is unlikely that any Red Listed species will be affected by the development proposal. The entire habitat along riverbanks on the proposed development site of the Red Listed Half Collard Kingfisher has been set aside for conservation.

Possibility to avoid, minimise, mitigate or compensate:

Approximately 40% of the natural vegetation on the site will be retained as natural open space and also serve as linkages to other natural open space areas, especially along the Olifantspruit. This will contribute to the formal protection of Carltonville Dolomite Grassland in the urban environment.

Unavoidable residual impact that can be expected:

Approximately 111ha natural vegetation, mainly Carltonville Dolomite Grassland will be lost. This is minimal in terms of the current remaining extent of the vegetation type. It is also not cost effective to set aside isolated portions of very expensive land for conservation of a vegetation type that can be much better protected in rural areas where it is well connected to vast areas of natural vegetation.

b. Alternative 2: High Density Development

Description of potential impact:

The proposed development may have a negative impact on biodiversity conservation.

Temporal scale:

Permanent.

Spatial scale:

Localised to the proposed development site itself.

Risk or likelihood:

The impact will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Severe (see reason on the notes under Significance below).

Significance:

High, an area of 151ha of 186.5ha primary natural vegetation will be removed by the proposed development and 35ha will be incorporated as natural open space in the development. The natural vegetation of the site consists almost entirely of Carltonville Dolomite Grassland with small patches of Open Woodland, Floodplain Grassland and Riparian Forest. The entire extent of Floodplain Grassland and

Riparian Forest will be contained in natural open space within the development area. Carltonville Dolomite Grassland is classified as vulnerable due to the small area that is currently formally protected, mostly in the Cradle of Humankind World heritage Site. It however occurs widely over a large area within and outside urban areas with approximately 76% (693 463ha) of the original extent still remaining. Specialist studies (attached in Appendix 3) confirmed that it is unlikely that any Red Listed species will be affected by the development proposal. The entire habitat along riverbanks on the proposed development site of the Red Listed Half Collard Kingfisher has been set aside for conservation.

Possibility to avoid, minimise, mitigate or compensate:

Approximately 18% of the natural vegetation on the site will be retained as natural open space and also serve as linkages to other natural open space areas, especially along the Olifantspruit. This will contribute to the formal protection of Carltonville Dolomite Grassland in the urban environment.

Unavoidable residual impact that can be expected:

Approximately 151ha natural vegetation, mainly Carltonville Dolomite Grassland will be lost. This is minimal in terms of the current remaining extent of the vegetation type. It is also not cost effective to set aside isolated portions of very expensive land for conservation of a vegetation type that can be much better protected in rural areas where it is well connected to vast areas of natural vegetation.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

The proposed development may have a negative impact on biodiversity conservation.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of

Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(k) Assessment of Impact PII 11

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The proposed development may be negatively affected by ambient air quality conditions in the area.

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

Possible. The proposed development site is located approximately 1.5 km from the Clayville/Olifantsfontein industrial area. The entire area proposed for residential use falls outside the Gauteng Industrial Pollution Buffer. The area falls within the Highveld Priority Area for pollution control and the Ekurhuleni Metropolitan Municipality has an operational Air Quality Management Plan that is used to regulate polluters in the area. Recent inspections have confirmed that with the exception of a few incidents, the industries in the area are generally in compliance with their permit conditions and according to the available information all pollution levels are within acceptable limits³³.

Degree of confidence or certainty:

Probable.

Severity or benefits:

³³ Letter 17/19/3/1 midstream received on 24 July 2012 from the Ekurhuleni Metropolitan Municipality attached in Appendix 6.

With the exception of very few incidents now and then, the ambient air quality in the area is within acceptable levels. This does not mean that it has no effect on people living in the area. The applicant and the Ekurhuleni Metropolitan Municipality have decided jointly to establish an ambient pollution baseline for the entire Mirand Estates area, including Midstream Ridge, in order to establish exactly what the situation is³⁴. The baseline will be used to measure changes (hopefully positive changes as the management and control measures of government improve over time) in the local conditions.

Significance:

The significance is moderate and the key will be to continue to monitor the situation from time to time.

Possibility to avoid, minimise, mitigate or compensate:

Ambient pollution in the area can only be improved if the government programmes are implemented effectively. Residents in the area can contribute by insisting that the responsible controlling authorities do their work properly.

Unavoidable residual impact that can be expected:

The current³⁵ ambient pollution levels can be expected to prevail for several more years after which it should become better as the controls get stricter within the Highveld Priority Area.

b. Alternative 2: High Density Development

Same as for Alternative 1.

c. Alternative 3: Selling the property for development or conservation by someone else

Same as for Alternative 1.

(l) Assessment of Impact PII 12

a. Alternative 1: Low Density Development (preferred alternative)

³⁴ See paragraph 6.12 for more detail in this respect.

³⁵ Initial monitoring results are attached in Appendix 3e.

Description of potential impact:

Noise emanating from the weather station may have a negative impact on the proposed development.

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

Very unlikely to occur. The noise monitoring³⁶ that was done on the site during September 2012 did not reveal any noise emanating from the weather station.

Degree of confidence or certainty:

Certain.

Severity or benefits:

No effect.

Significance:

No significance.

Possibility to avoid, minimise, mitigate or compensate:

N/A.

Unavoidable residual impact that can be expected:

N/A.

b. Alternative 2: High Density Development

Same as for Alternative 1.

³⁶ A Noise Impact Assessment is attached in Appendix 3d.

c. Alternative 3: Selling the property for development or conservation by someone else

Same as for Alternative 1.

(m) Assessment of Impact PII 13

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

Noise emanating from new roads may have a negative impact on existing residential areas.

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

The noise level in the area will definitely increase.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Slight. Due to the fact that the roads will be limited to internal roads as no additional provincial routes are planned in the area as part of the development (except for the K220 that has already been approved). If the K111 is built some time in future it may have a significant noise impact. That will however have to be determined at the time when the province decides to build the road, if at all. The noise impact assessment³⁷ that was done for the site indicates that the noise level will remain well within the acceptable range.

Significance:

³⁷ See Appendix 3d.

Low.

Possibility to avoid, minimise, mitigate or compensate:

The noise impact from the roads planned in the proposed development can be limited by determining and enforcing speed limits between 50 and 60 km/hr.

Unavoidable residual impact that can be expected:

Normal suburban noise from vehicles is part and parcel of the development of urban areas and cannot be avoided altogether.

b. Alternative 2: High Density Development

Same as for Alternative 1.

c. Alternative 3: Selling the property for development or conservation by someone else

Same as for Alternative 1.

9.3.2. Assessment of potential impacts identified from issues identified out of comments on the Draft Scoping Report

(a) Assessment of Impact PSR 1

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

School related traffic may cause congestion on some of the roads in the area, especially during morning peak traffic periods.

Temporal scale:

Permanent, if it is left unmitigated and no further road development occur in future in the area.

Spatial scale:

Localised, as the impact will be within the existing area of Midrand Estates.

Risk or likelihood:

Will definitely occur if it is left unmitigated and no further road development occurs in future in the area.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Moderately severe, as it would make traffic flow very slow during peak morning and afternoon periods.

Significance:

Moderate, as it would primarily be a nuisance factor for residents of Midrand Estates.

Possibility to avoid, minimise, mitigate or compensate:

The impact can be mitigated to a very large extent by ensuring that the road system in and around Midrand Estates is improved and developed as planned.

Unavoidable residual impact that can be expected:

The traffic residual impact could mean that the traffic situation on Brakfontein Road within the estate may deteriorate from a current LOS of B to a LOS of C (which is still acceptable) by 2017 after which it will be relieved again (permanently) due to the planned construction of new roads by that time. The unavoidable residual impact will therefore be moderate and temporary limited to a period of approximately 3 years.

b. Alternative 2: High Density Development

Description of potential impact:

School related traffic may cause congestion on some of the roads in the area, especially during morning peak traffic periods.

Temporal scale:

Permanent, if it is left unmitigated and no further road development occur in future in

the area.

Spatial scale:

Localised, as the impact will be within the existing area of Midrand Estates.

Risk or likelihood:

Will definitely occur if it is left unmitigated and no further road development occurs in future in the area.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Moderately severe, as it would make traffic flow very slow during peak morning and afternoon periods.

Significance:

Moderate, as it would primarily be a nuisance factor for residents of Midrand Estates.

Possibility to avoid, minimise, mitigate or compensate:

The impact can be mitigated to a very large extent by ensuring that the road system in and around Midrand Estates is improved and developed as planned.

Unavoidable residual impact that can be expected:

The traffic residual impact could mean that the traffic situation on Brakfontein Road within the estate may deteriorate from a current LOS of B to a LOS of C (which is still acceptable) by 2017 after which it will be relieved again (permanently) due to the planned construction of new roads by that time. The unavoidable residual impact will therefore be moderate and temporary limited to a period of approximately 3 years.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

School related traffic may cause congestion on some of the roads in the area, especially during morning peak traffic periods.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(b) Assessment of Impact PSR 2

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The construction of the K111 provincial road may have a significant impact on the privacy, safety and sense of place of existing residents who live along its alignment if the necessary mitigation measures are not put in place.

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

May occur. The development of the K111 route will not be done as part of the development proposal and is not planned to be developed by the applicant in future. It is a provincial road servitude which will have to be assessed along with the rest of the route in future if and when the provincial roads authority (Gautrans) decides to develop the road.

Degree of confidence or certainty:

Unsure.

Severity or benefits:

The construction of the K111 Route would have severe negative impacts on residents of Midrand Estates that are located next to the road.

Significance:

High. The uncertainty about the development of the provincial road network has a high negative impact on the development of the area, the confidence of residents and on the investment confidence of prospective buyer in the area.

Possibility to avoid, minimise, mitigate or compensate:

The impact of the road (although it is not part of this EIA) if built can be mitigated significantly if the proponent at the time apply best practice design techniques that may include lowering the road into a cutting, building earth berms and/or walls between the road and the residential areas, planting vegetation buffers and by imposing a low speed limit.

Unavoidable residual impact that can be expected:

It is not possible to determine the residual impact in this instance as the K111 road is not part of the planning of the Midrand Estates or the application and is, therefore, entirely a matter for Gautrans to address in future if they should decide to build the road.

b. Alternative 2: High Density Development

Description of potential impact:

The construction of the K111 provincial road may have a significant impact on the privacy, safety and sense of place of existing residents who live along its alignment if the necessary mitigation measures are not put in place.

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

May occur. The development of the K111 route will not be done as part of the development proposal and is not planned to be developed by the applicant in future. It is a provincial road servitude which will have to be assessed along with the rest of the route in future if and when the provincial roads authority (Gautrans) decides to develop the road.

Degree of confidence or certainty:

Unsure.

Severity or benefits:

The construction of the K111 Route would have severe negative impacts on residents of Midrand Estates that are located next to the road.

Significance:

High. The uncertainty about the development of the provincial road network has a high negative impact on the development of the area, the confidence of residents and on the investment confidence of prospective buyer in the area.

Possibility to avoid, minimise, mitigate or compensate:

The impact of the road (although it is not part of this EIA) if built can be mitigated significantly if the proponent at the time apply best practice design techniques that may include lowering the road into a cutting, building earth berms and/or walls between the road and the residential areas, planting vegetation buffers and by imposing a low speed limit. Due to the fact that the development will not necessarily from part of the current Midrand Estates it may be more difficult to coordinate public views in respect to participation in a future EIA process.

Unavoidable residual impact that can be expected:

It is not possible to determine the residual impact in this instance as the K111 road is not part of the planning of the Midrand Estates or the application and is, therefore, entirely a matter for Gautrans to address in future if they should decide to build the road.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

The construction of the K111 provincial road may have a significant impact on the privacy, safety and sense of place of existing residents who live along its alignment if the necessary mitigation measures are not put in place.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(c) Assessment of Impact PSR 3

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

There may be unknown latent development rights holders along Brakfontein Road that also need to be considered as the future exercising of their rights may cause further negative cumulative impacts on the traffic situation on Brakfontein Road.*

Temporal scale:

Permanent.

Spatial scale:

District.

Risk or likelihood:

Will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Moderately severe. The Traffic³⁸ Impact Study that was done included all the latent rights in the area. These are therefore embedded in the requirements for the development of roads.

Significance:

Moderate.

Possibility to avoid, minimise, mitigate or compensate:

The requirements for the development and improvement of roads that emanated from the Traffic Impact Study will ensure that this impact is mitigated to an acceptable LOS of at least level C³⁹.

Unavoidable residual impact that can be expected:

An increase in traffic within the acceptable parameters until 2017 when new road development will alleviate it again.

b. Alternative 2: High Density Development

Description of potential impact:

There may be unknown latent development rights holders along Brakfontein Road that also need to be considered as the future exercising of their rights may cause further negative cumulative impacts on the traffic situation on Brakfontein Road.*

Temporal scale:

Permanent.

Spatial scale:

District.

³⁸ See Appendix 1.

³⁹ See footnote for PII 1.

Risk or likelihood:

Will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Moderately severe. The Traffic⁴⁰ Impact Study that was done included all the latent rights in the area. These are therefore embedded in the requirements for the development of roads.

Significance:

Moderate.

Possibility to avoid, minimise, mitigate or compensate:

The requirements for the development and improvement of roads that emanated from the Traffic Impact Study will ensure that this impact is mitigated to an acceptable LOS of at least level C⁴¹.

Unavoidable residual impact that can be expected:

An increase in traffic within the acceptable parameters until 2017 when new road development will alleviate it again.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

There may be unknown latent development rights holders along Brakfontein Road that also need to be considered as the future exercising of their rights may cause further negative cumulative impacts on the traffic situation on Brakfontein Road.*

⁴⁰ See Appendix 1.

⁴¹ See footnote for PII 1.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(d) Assessment of Impact PSR 4, PSR 5, PSR 6, PSR 7, PSR 12, PSR 13, PSR 18, PSR 19 and PSR 21

Note: These potential impacts were identified from comments on the Scoping Report and they all relate to the road access dispute between the applicant and Shoprite Checkers in respect to the new Shoprite Checkers entrance from Brakfontein Road. It is our understanding that if that dispute is resolved the issues on which these identified potential impacts are based will also fall away. For that reason these potential impacts are all dealt with together at the same time.

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impacts:

(PSR 4) The EIA process is potentially being used as a mechanism to further a current dispute between the applicant and the local residential estates and Shoprite in respect to a point of access along Brakfontein Road⁴².

(PSR 5) The potential increase in traffic on Brakfontein road emanating from the proposed development may contribute to further increase in traffic on Brakfontein Road.

(PSR 6) The proposed development may have significant negative social and economic impacts on the surrounding area, and even nationally in the case of Shoprite.

(PSR 7) An increase in traffic along Brakfontein Road may result in negative impacts for Shoprite, including:

⁴² This is a statement from several interested and affected parties rather than a potential impact but serves to illustrate that these impacts represent a remonstrance (pleading in protest) against the actions of the applicant and others against the new Shoprite Checkers entrance from Brakfontein Road. As such the motive and intent of the issues from which these potential impacts have been identified is questionable as attempts to weigh in on an unrelated dispute through the EIA process.

- Loss of revenue due to delays;
- Loss of market share due to increase inefficiency caused by delays;
and
- Higher costs to Shoprite suppliers and producers due to delays.

(PSR 12) The proposed development may be contrary to some of the principles contained in section 2 of NEMA which may have a negative impact on environmental management at local, provincial and national levels.

(PSR 13) The proposed development may not be the “best practicable environmental option” which may lead to unnecessary negative impacts (as yet unspecified) on the environment.

(PSR 18) The timing of the proposed development may be inappropriate.

(PSR 19) The proposed development may not be appropriate in a strategic level and/or local level in terms of what the society/community requires.

(PSR 21) The proposed development may have negative impacts/implications on the infrastructure planning of Ekurhuleni and Tshwane Metropolitan Municipalities.

Discussion:

The applicant and Shoprite Checkers have in the meantime agreed to find a mutually beneficial solution to the problem of Shoprite Checkers trucks that have to make a right turn across oncoming traffic from the Midrand Estates direction and the impact that the anticipated increase of traffic from the proposed development could have on the already difficult situation for all parties concerned⁴³. A traffic impact assessment is being done (additional to what is being done for this EIA) to suggest a long term solutions to system problems in the local road network and to suggest a plan for the future development of roads in the area. This potential impact can therefore be avoided altogether provided that all parties agree to a solution.

⁴³ See letter GAUT: 002/11-/E0268 of 1 August 2012, addressed to GDARD attached in Appendix 6.

After various communications and meetings between the applicant and representatives of Shoprite Checkers we came to the following conclusion in respect to the above and potential impacts identified from issues raised by Shoprite Checkers:

- The concerns expressed by Shoprite Checkers is as a result of impacts that may occur due to high traffic loads on Brakfontein Road that may interfere with the efficiency of transportation of goods to and from its warehouse complex which is a major strategic facility in its operations;
- There is agreement that the potential impacts may occur;
- There is agreement that the causes of the potential impacts can be resolved to an extent where such impacts will no longer be significant and therefore be very unlikely to actually occur;
- There is a commitment between the parties to find solutions for these causes of potential impacts;
- There is an understanding between the parties that the solutions to the potential impacts has to be addressed in the context of the future further development of the area (including the application site but not limited thereto) and that it should be resolved in an evolutionary process that addresses the road especially in respect to its potential and its limitations as a system (looking at the whole of the road and its connections to other roads instead of single bottlenecks and problems);
- There is recognition that long term solutions and commitments towards making the traffic situation in the area work to the benefit of all local residents (including residential and businesses) goes well beyond only the scope of the EIA and has to be a joint effort between landowners and the relevant Metropolitan Municipalities; and
- It is therefore likely that the severity of these potential impacts can be reduced to very low by means of negotiated design and implementation of measures on Brakfontein Road (which falls outside the application area but which is nonetheless a key consideration in respect to the road infrastructure around the application site).

In the light of the above, we believe that the potential “impacts” cannot be evaluated any further.

b. Alternative 2: High Density Development

Same as for Alternative 1.

c. Alternative 3: Selling the property for development or conservation by someone else

Same as for Alternative 1

(e) Assessment of Impact PSR 8

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The construction of infrastructure for the bulk transportation of water, sewage or stormwater may have a significant negative impact on the environment.*

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

Very unlikely to occur, as bulk services for the area have already been planned into the infrastructure for the area and will be available on site at the start of construction. Confirmation of availability of services from the relevant bulk service providers is attached in Appendix 7. The plan for the development of roads in and around Midrand Estates that will be implemented over the next ten years will ensure a road network that is sufficient and appropriate for the area and is attached in Appendix 1.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Beneficial as the proposed development will ensure that existing available infrastructure is used optimally without any wastage.

Significance:

High, as the efficient use of available resources and infrastructure will eliminate wastage and ensure that bulk service providers are paid in full for the services they deliver.

Possibility to avoid, minimise, mitigate or compensate:

Due to a modern technological approach to the development, resource use will be further enhanced through “green” initiatives including the provision of online gas to residences and the use of LED lights in streetlights and in public/shared places.

Unavoidable residual impact that can be expected:

No unavoidable negative impacts are expected.

b. Alternative 2: High Density Development

Description of potential impact:

The construction of infrastructure for the bulk transportation of water, sewage or stormwater may have a significant negative impact on the environment.*

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

Will definitely occur, as bulk services for the area have already been planned into the infrastructure for the area for a lower density. Additional bulk services in respect to water, sewage and electricity will have to be constructed, the most important being expansions to the local sewage works. All the K routes in the area will also have to be built by Gautrans by 2017 to take the increased load.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Very severe negative impacts if the relevant authorities are unable to supply the required bulk infrastructure.

Significance:

High, as the current bulk services cannot accommodate a high density development.

Possibility to avoid, minimise, mitigate or compensate:

The avoidance of this impact would require significant investment from local and provincial government in provincial roads and sewerage works.

Unavoidable residual impact that can be expected:

Severe shortages in all elements can be expected unless there is significant investment in infrastructure by the local and provincial governments. This may be a FATAL FLAW.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

The construction of infrastructure for the bulk transportation of water, sewage or stormwater may have a significant negative impact on the environment.*

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(f) Assessment of Impact PSR 9 and PSR 20 (similar impacts with the same assessment)

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

(PSR 9) The provision of water, sewage and stormwater may result in cumulative impacts if added to the current impacts on these services as a result of existing development. *

(PSR 20) There may not be adequate current capacity in services for the development (water, sewage, electricity, etc.). *

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

Very unlikely to occur, as bulk services for the area have already been planned into the infrastructure for the area and will be available on site at the start of construction. Confirmation of availability of services from the relevant bulk service providers is attached in Appendix 7. The plan for the development of roads in and around Midrand Estates that will be implemented over the next ten years will ensure a road network that is sufficient and appropriate for the area and is attached in Appendix 1.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Beneficial as the proposed development will ensure that existing available infrastructure is used optimally without any wastage.

Significance:

High, as the efficient use of available resources and infrastructure will eliminate wastage and ensure that bulk service providers are paid in full for the services they deliver.

Possibility to avoid, minimise, mitigate or compensate:

Due to a modern technological approach to the development, resource use will be further enhanced through “green” initiatives including the provision of online gas to residences and the use of LED lights in streetlights and in public/shared places.

Unavoidable residual impact that can be expected:

No unavoidable negative impacts are expected.

b. Alternative 2: High Density Development

Description of potential impact:

(PSR 9) The provision of water, sewage and stormwater may result in cumulative impacts if added to the current impacts on these services as a result of existing development. *

(PSR 20) There may not be adequate current capacity in services for the development (water, sewage, electricity, etc.). *

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

Will definitely occur, as bulk services for the area have already been planned into the infrastructure for the area for a lower density. Additional bulk services in respect to water, sewage and electricity will have to be constructed, the most important being expansions to the local sewage works. All the K routes in the area will also have to be built by Gautrans by 2017 to take the increased load.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Very severe negative impacts if the relevant authorities are unable to supply the required bulk infrastructure.

Significance:

High, as the current bulk services cannot accommodate a high density development.

Possibility to avoid, minimise, mitigate or compensate:

The avoidance of this impact would require significant investment from local and provincial government in provincial roads and sewerage works.

Unavoidable residual impact that can be expected:

Severe shortages in all elements can be expected unless there is significant investment in infrastructure by the local and provincial governments. This may be a FATAL FLAW.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

(PSR 9)The provision of water, sewage and storm water may result in cumulative impacts if added to the current impacts on these services as a result of existing development. *

(PSR 20) There may not be adequate current capacity in services for the development (water, sewage, electricity, etc.). *

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(g) Assessment of Impact PSR 10

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The better utilisation of currently available infrastructure and services may have positive impacts as it would increase the efficiency of use of existing infrastructure that cannot be achieved at a different location.

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

Will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Beneficial.

Significance:

High. Existing capacity will be used which will result the more effective and efficient utilisation of available infrastructure.

Possibility to avoid, minimise, mitigate or compensate:

Due to a modern technological approach to the development, resource use will be further enhanced through “green” initiatives including the provision of online gas to residences and the use of LED lights in streetlights and in public/shared places.

Unavoidable residual impact that can be expected:

No unavoidable negative impacts are expected.

b. Alternative 2: High Density Development

Description of potential impact:

The better utilisation of currently available infrastructure and services may have positive impacts as it would increase the efficiency of use of existing infrastructure that cannot be achieved at a different location.

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

Will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Negative.

Significance:

High, the existing infrastructure capacity that has been installed for the Midstream Estates area will not be adequate for this alternative.

Possibility to avoid, minimise, mitigate or compensate:

There will have to be significant local and provincial government investment in bulk services to minimise this impact to an acceptable level.

Unavoidable residual impact that can be expected:

Without significant local and provincial government investment this impact will remain. This may be FATAL FLAW.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

The better utilisation of currently available infrastructure and services may have positive impacts as it would increase the efficiency of use of existing infrastructure that cannot be achieved at a different location.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(h) Assessment of Impact PSR 11

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The clearance of indigenous vegetation may have a negative impact on the conservation of biodiversity.

Temporal scale:

Permanent

Spatial scale:

Localised to the proposed development site itself.

Risk or likelihood:

The impact will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Moderately severe (see reason on the notes under Significance below).

Significance:

High, an area of 111ha of 186.5ha primary natural vegetation will be removed by the proposed development and 75ha will be incorporated as natural open space in the development. The natural vegetation of the site consists almost entirely of Carltonville Dolomite Grassland with small patches of Open Woodland, Floodplain Grassland and Riparian Forest. The entire extent of Floodplain Grassland and Riparian Forest will be contained in natural open space within the development area. Carltonville Dolomite Grassland is classified as vulnerable due to the small area that is currently formally protected, mostly in the Cradle of Humankind World heritage Site. It however occurs widely over a large area within and outside urban areas with approximately 76% (693 463ha) of the original extent still remaining. Specialist studies (attached in Appendix 3) confirmed that it is unlikely that any Red Listed species will be affected by the development proposal. The entire habitat along riverbanks on the proposed development site of the Red Listed Half Collard Kingfisher has been set aside for conservation.

Possibility to avoid, minimise, mitigate or compensate:

Approximately 40% of the natural vegetation on the site will be retained as natural open space and also serve as linkages to other natural open space areas, especially along the Olifantspruit. This will contribute to the formal protection of Carltonville Dolomite Grassland in the urban environment.

Unavoidable residual impact that can be expected:

Approximately 111ha natural vegetation, mainly Carltonville Dolomite Grassland will be lost. This is minimal in terms of the current remaining extent of the vegetation type. It is also not cost effective to set aside isolated portions of very expensive land for conservation of a vegetation type that can be much better protected in rural areas where it is well connected to vast areas of natural vegetation.

b. Alternative 2: High Density Development

Description of potential impact:

The clearance of indigenous vegetation may have a negative impact on the conservation of biodiversity.

Temporal scale:

Permanent

Spatial scale:

Localised to the proposed development site itself.

Risk or likelihood:

The impact will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Moderately severe (see reason on the notes under Significance below).

Significance:

High, an area of 151ha of 186.5ha primary natural vegetation will be removed by the proposed development and 35ha will be incorporated as natural open space in the development. The natural vegetation of the site consists almost entirely of Carltonville Dolomite Grassland with small patches of Open Woodland, Floodplain Grassland and Riparian Forest. The entire extent of Floodplain Grassland and Riparian Forest will be contained in natural open space within the development area. Carltonville Dolomite Grassland is classified as vulnerable due to the small area that is currently formally protected, mostly in the Cradle of Humankind World heritage Site. It however occurs widely over a large area within and outside urban areas with approximately 76% (693 463ha) of the original extent still remaining. Specialist studies confirmed that it is unlikely that any Red Listed species will be affected by the development proposal. The entire habitat along riverbanks on the proposed development site of the Red Listed

Half Collard Kingfisher has been set aside for conservation.

Possibility to avoid, minimise, mitigate or compensate:

Approximately 18% of the natural vegetation on the site will be retained as natural open space and also serve as linkages to other natural open space areas, especially along the Olifantspruit. This will contribute to the formal protection of Carltonville Dolomite Grassland in the urban environment.

Unavoidable residual impact that can be expected:

Approximately 151ha natural vegetation, mainly Carltonville Dolomite Grassland will be lost. This is minimal in terms of the current remaining extent of the vegetation type. It is also not cost effective to set aside isolated portions of very expensive land for conservation of a vegetation type that can be much better protected in rural areas where it is well connected to vast areas of natural vegetation.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

The clearance of indigenous vegetation may have a negative impact on the conservation of biodiversity.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(i) Assessment of Impact PSR 14

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The proposed development may generate an undesired influx of people (job seekers) into the area.

Temporal scale:

Medium term.

Spatial scale:

Localised.

Risk or likelihood:

May occur.

Degree of confidence or certainty:

Probable.

Severity or benefits:

Slight.

Significance:

Low. The development of the wider Midrand Estates development has been on-going and at a steady rate for more than ten years. This has ensured that at least 300 building contractors have been working in the estate at any given time. The contractors are required to meet very strict criteria in terms of their employment of staff. They must be South African citizens with valid ID documents and must pass through the fingerprint security system. This system is well known by most prospective work seekers.

The crime rate in the area is very low and almost entirely limited to infrequent petty theft on building sites.

Possibility to avoid, minimise, mitigate or compensate:

N/A.

Unavoidable residual impact that can be expected:

The unavoidable impact is very low and should remain the same as it is at the moment for the area.

b. Alternative 2: High Density Development

Description of potential impact:

The proposed development may generate an undesired influx of people (job seekers) into the area.

Temporal scale:

Medium term.

Spatial scale:

Localised.

Risk or likelihood:

May occur.

Degree of confidence or certainty:

Probable.

Severity or benefits:

Slight.

Significance:

Low. The development of the wider Midrand Estates development has been on-going and at a steady rate for more than ten years. This has ensured that at least 300 building contractors have been working in the estate at any given time. The contractors are required to meet very strict criteria in terms of their employment of staff. They must be South African citizens with valid ID documents and must pass through the fingerprint security system. This system is well known by most prospective work seekers.

The crime rate in the area is very low and almost entirely limited to infrequent petty theft on building sites.

Possibility to avoid, minimise, mitigate or compensate:

N/A.

Unavoidable residual impact that can be expected:

The unavoidable impact is very low and should remain the same as it is at the moment for the area.

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

The proposed development may generate an undesired influx of people (job seekers) into the area.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(j) Assessment of Impact PSR 15

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The proposed development may generate new employment opportunities for a significant number of people.

Temporal scale:

Medium term to long term.

Spatial scale:

Local to District.

Risk or likelihood:

Will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Highly beneficial.

Significance:

Very beneficial.

Possibility to avoid, minimise, mitigate or compensate:

N/A

Unavoidable residual impact that can be expected:

The value of employment opportunities will at least amount to (See Appendix 5 for details):

- Town development phase: R72m
- Residential development phase: R140m
- Post development phase: R48m/annum

b. Alternative 2: High Density Development**Description of potential impact:**

The proposed development may generate new employment opportunities for a significant number of people.

Temporal scale:

Medium term to long term.

Spatial scale:

Local to district.

Risk or likelihood:

Will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Very beneficial.

Significance:

Highly significant.

Possibility to avoid, minimise, mitigate or compensate:

N/A.

Unavoidable residual impact that can be expected:

The value of the employment opportunities can be summarised as (see Appendix 5 for details):

- Town development phase: R108m
- Residential development phase: R95m
- Post development: R12m/annum

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

The proposed development may generate new employment opportunities for a significant number of people.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(k) Assessment of Impact PSR 16

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

Waste removal from the proposed new development may have a negative impact on available airspace in landfill sites.

Temporal scale:

Long term.

Spatial scale:

Local to district.

Risk or likelihood:

Will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Moderately severe. Ekurhuleni Metropolitan Municipality has one of the best landfill site management programmes in South Africa. The EMM provides a complete service to Midrand Estates and has indicated that it can continue to do so also for the proposed development area.

Significance:

Moderate significance.

Possibility to avoid, minimise, mitigate or compensate:

With the proposed development Midrand Estates is nearing the critical mass in respect to waste generation that could justify a local composting and recycling plant in future. This will however only become viable towards 2020 when it will be looked at again. A major stumbling block may be the current fees that are being paid to the EMM for

waste removal which they are unlikely to give up in order to support the viability of such a venture.

Unavoidable residual impact that can be expected:

The residual impact will constitute the removal of approximately 900m³ of household waste per week to existing municipal landfill sites. In respect to construction waste, Inert construction waste is mostly recycled in the Midrand Estates area and used for purposes such as noise berms, foundation fill and the construction of sports fields. Metal waste is recycled and plastic and paper waste is disposed of by contractors either to municipal landfill sites or to recycling agents.

b. Alternative 2: High Density Development

Description of potential impact:

Waste removal from the proposed new development may have a negative impact on available airspace in landfill sites.

Temporal scale:

Long term.

Spatial scale:

Local to district.

Risk or likelihood:

Will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Moderately severe. Ekurhuleni Metropolitan Municipality has one of the best landfill site management programmes in South Africa. The EMM provides a complete service to Midrand Estates and has indicated that it can continue to do so also for the proposed development area.

Significance:

Moderate significance.

Possibility to avoid, minimise, mitigate or compensate:

With the proposed development Midrand Estates is nearing the critical mass in respect to waste generation that could justify a local composting and recycling plant in future. This will however only become viable towards 2020 when it will be looked at again. A major stumbling block may be the current fees that are being paid to the EMM for waste removal which they are unlikely to give up in order to support the viability of such a venture.

Unavoidable residual impact that can be expected:

The residual impact will constitute the removal of approximately 900m³ of household waste per week to existing municipal landfill sites. In respect to construction waste, inert construction waste is mostly recycled in the Midrand Estates area and used for purposes such as noise berms, foundation fill and the construction of sports fields. Metal waste is recycled and plastic and paper waste is disposed of by contractors either to municipal landfill sites or to recycling agents.

c. Alternative 3: Selling the property for development or conservation by someone else**Description of potential impact:**

Waste removal from the proposed new development may have a negative impact on available airspace in landfill sites.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(l) Assessment of Impact PSR 17

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The income generated from delivering services such as waste removal from the proposed development as well as property taxes may have a significant beneficial impact on the finances of the Ekurhuleni Metropolitan Municipality.

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

Will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Very beneficial.

Significance:

Very high significance.

Possibility to avoid, minimise, mitigate or compensate:

N/A.

Unavoidable residual impact that can be expected:

Based on real current average incomes derived from an average sized house the following yearly amounts paid on taxes and service fees to the local authority can be anticipated for the planned 1200 residential properties planned (the mixed use component is not included which means that the estimate is very conservative):

- Property tax: R16,144,800.00
- Refuse removal: R 1,660,176.00
- Water: R13,436,352.00
- Sewerage: R 3,774,720.00

b. Alternative 2: High Density Development

Description of potential impact:

The income generated from delivering services such as waste removal from the proposed development as well as property taxes may have a significant beneficial impact on the finances of the Ekurhuleni Metropolitan Municipality.

Temporal scale:

Permanent.

Spatial scale:

Local.

Risk or likelihood:

Will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Very beneficial.

Significance:

Very high significance.

Possibility to avoid, minimise, mitigate or compensate:

N/A.

Unavoidable residual impact that can be expected:

Based on real current average incomes derived from a small to average sized house the following yearly amounts paid on taxes and service fees to the local authority can be anticipated for the planned 4000 residential properties planned (the mixed use component is not included which means that the estimate is very conservative):

- Property tax: R40,144,800.00
- Refuse removal: R 4,150,440.00
- Water: R33,590,880.00
- Sewerage: R9,436,800.00

c. Alternative 3: Selling the property for development or conservation by someone else

Description of potential impact:

The income generated from delivering services such as waste removal from the proposed development as well as property taxes may have a significant beneficial impact on the finances of the Ekurhuleni Metropolitan Municipality.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

(a) Assessment of Impact PSR 22

a. Alternative 1: Low Density Development (preferred alternative)

Description of potential impact:

The physical and monetary contributions that the development will make to infrastructure may benefit surrounding communities and areas.

Temporal scale:

Permanent.

Spatial scale:

District.

Risk or likelihood:

Will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Very beneficial.

Significance:

Very high. The development of Midrand Estates including the proposed development has over the past number of years been the only contributor to the expansion of roads and service infrastructure in the area. It built many kilometres of roads outside the estate that also benefit the neighbours and makes the development and/or optimal use of their properties more efficient. It further also helps to establish a regional roads and services network that enables other prospective developers to also contribute further to the development of these systems as they develop their properties further in future. It is therefore a major catalyst for much needed development of the area.

Possibility to avoid, minimise, mitigate or compensate:

N/A.

Unavoidable residual impact that can be expected:

A highly beneficial catalyst function for the development of the area.

b. Alternative 2: High Density Development**Description of potential impact:**

The physical and monetary contributions that the development will make to infrastructure may benefit surrounding communities and areas.

Temporal scale:

Permanent.

Spatial scale:

District.

Risk or likelihood:

Will definitely occur.

Degree of confidence or certainty:

Certain.

Severity or benefits:

Very beneficial.

Significance:

Very high. The development of Midrand Estates including the proposed development has over the past number of years been the only contributor to the expansion of roads and service infrastructure in the area. It built many kilometres of roads outside the estate that also benefit the neighbours and makes the development and/or optimal use of their properties more efficient. It further also helps to establish a regional roads and services network that enables other prospective developers to also contribute further to the development of these systems as they develop their properties further in future. It is therefore a major catalyst for much needed development of the area.

Possibility to avoid, minimise, mitigate or compensate:

N/A.

Unavoidable residual impact that can be expected:

A highly beneficial catalyst function for the development of the area.

- c. **Alternative 3: Selling the property for development or conservation by someone else**

Description of potential impact:

The physical and monetary contributions that the development will make to infrastructure may benefit surrounding communities and areas.

Impact assessment:

Due to the fact that it is uncertain what the land will be used for if sold, it is anticipated that the residual impact may fall somewhere between that of Alternatives 1 and 2 if the area is developed and that it would not have any impact at all if the land remains undeveloped (which is unlikely).

13. Summary of comparative assessment of alternatives and key issues/impacts

The key identified issues and their comparative assessment between alternatives is contained in the table below.

Table 6: Summary of comparative assessment of alternatives and key issues/impacts			
Description	Alternative 1	Alternative 2	Alternative 3
Impact on roads and especially Brakfontein road.	Level of service of at least C (acceptable) will be maintained)	Level of service will deteriorate to at least E (unacceptable) unless there is significant investment by government in the construction of provincial and major municipal roads.	Between that of alternative 1 and 2
Adequacy of infrastructure.	Existing and currently planned infrastructure is sufficient.	Significant extensions to sewage treatment works bulk water supply, bulk water storage and electricity supply would be required.	Between that of alternative 1 and 2 or not necessary in the case of no development.
Exclusivity of the area.	The existing character of the area will be maintained.	The existing character of the area will be severely impacted on, which could reduce property values and demand for property in the area.	Between that of alternative 1 and 2 or not necessary in the case of no development.
Impact on biodiversity.	Significant natural open space would be left within all parts of the development.	The natural open space within the residential area will be left out as it will not be appropriate for the type of development (approximately 25 ha less than for alternative 1).	Between that of alternative 1 and 2 or no change in the status quo in the case of no development.
Private sector investment	Very high (90% + of initial development cost).	Low (less than 20 % of initial development cost).	Between that of alternative 1 and 2
Public investment required.	Very low (less than 20% of initial development cost).	High (more than 80 % of initial development).	Unknown.

14. Environmental impact statement and recommendation

Alternative 1 of the proposed activity, the low density development alternative, remains the preferred alternative for the following reasons:

- There is a strong demand for the type and quality of development that is being applied for;
- The impact on biological resources will be minimal and the natural open space areas that will be included in the development will ensure the protection of a significant natural component;
- The impact on roads can be limited to acceptable levels through the proposed measures to build new roads and upgrade existing ones;
- The character of the area, which is very important to local residents will be maintained;
- New educational facilities including a primary school will be added in the area;
- A new transport terminus will greatly improve the travel experience of people working in and around the proposed development;
- The development will make significant contributions to the economy and maintain many current employment opportunities and also create new ones;
- All the potential impacts can be mitigated to an extent that there are no significant residual impacts including cumulative impacts; and
- Alternatives 2 and 3 will both have much more severe impacts especially in respect to investment that will be required from provincial and local government.

It is our recommendation that the activity be approved subject to the conditions in the draft Environmental Management Plan (See Appendix 10).