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South Hills (Moffat Park) Development
GAUT 002/11-12/E0042
Final
Environmental Impact Assessment

May 2012

Submitted on behalf of:
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Executive Summary

Introduction

LEAP Landscape Architect and Environmental Planner CC was appointed by Calgro M3 Holdings as Independent Environmental Consultant to undertake the appropriate environmental process for the proposed South Hills (Moffat Park) development on Holding 88 Klipriviersberg Estate Small Holding A.H, Portion 65 (Portion of Portion 7) of the Farm Klipriviersberg no 106 I.R and Erf 1202 South Hills (Moffat Park). The process was registered for an EIA with the Gauteng Department of Agriculture and Rural Development (GDARD) under Regulation 543 to 547 of the National Environmental Management Act (Act No 107 of 1998) and was assigned the reference number **GAUT 002/22-12/E0042**

GENERAL SITE DESCRIPTION

Holding 88 Klipriviersberg Estate Small Holding A.H, Portion 65 (Portion of Portion 7) of the Farm Klipriviersberg no 106 I.R. and Erf 1202 South Hills (Moffat Park) (Moffat Park) falls under the jurisdiction of the City of Johannesburg Metropolitan Municipality. The properties are situated on South Rand Road (M38) to the south east of the CBD of the City of Johannesburg. Southern Klipriversberg Road is abutting the property to the north and Nephin Road abuts the property on the eastern boundary. The proposed site is surrounded by single residential houses, high density walk-up residential units, educational facilities industrial and business activities.

RECEIVING ENVIRONMENT

Topography and Hydrology

The general slope direction of the site is towards the north with an elevation difference of 103m between the upper southern and lower northern portions of the site. The topography varies from 1688m amsl in the north to 1787m amsl in the south and has an average gradient of 1:20. The site is part of the Quaternary catchment C22B, which drains southwards via the Klipspruit, which enters the Vaal river at Vereeniging. The western half of the site slopes towards the northeast and the eastern half of the site slopes towards the northwest towards the existing river. Surface water will naturally flow perpendicular to the contours in the direction of the drainage channels and river.

General Geology

According to the 1:250 000-scale geological sheet, the site is mainly underlain by (Rt) quartzite, conglomerate and sandy shale of the Turffontein Formation, Central Rand Group, Witwatersrand Supergroup. Conglomerate was encountered in the southern portion of the investigated area with quartzite in the centre to northern portions. According to the geological map and accompanied explanation no specific mineral deposits are present on or in close proximity of the site. Rock outcrop is evident throughout the majority of the site. The areas where no rock outcrops are visible are generally covered with very thin topsoil, hillwash or pebble marker horizon underlain by a thin reworked residual horizon. The upper transported and reworked residuum was generally encountered down to less than 1 m below ground level from where very soft to hard rock quartzite and conglomerate were encountered. The consistencies of the transported and highly reworked residual horizons were generally described as loose to medium dense with an open soil structure. The topsoil and reworked residuum consist mainly of sand originated from the weathering of the quarzites and finer portion of the conglomerates. The typical pebble marker and/or hillwash horizon mainly consist of abundant sub rounded to rounded quartz gravel and pebbles originated from the weathering of the conglomerate horizons with a sandy

matrix. The site is not underlain by dolomite and/or chert and a dolomite stability investigation is therefore not required.

Agriculture

According to the Gauteng Agricultural Potential Atlas (GAPA Version 3), the site of the proposed development is not situated within a region delineated as an Agricultural Hub.

Ecology

The dominating vegetation type of the broader area and the northern parts of the site can be classified as the Soweto Highveld Grassland which is found in Gauteng and Mpumalanga. The landscape is gently undulating on the Highveld plateau. In undisturbed areas only scattered wetlands or rocky outcrops may break the continuous grassland cover of short to medium-high tufted grasses. In general the dominating grass species of the vegetation unit are *Themeda trianda, Elionurus muticus, Eragrostis racemosa, Heteropogon contortus* and *Tristachya leucothrix.* The conservation status of this vegetation type is currently classified as Endangered.

The vegetation unit of the southern ridge part of the site is classified as Andesite Mountain Bushveld forming part of the greater Savanna biome. Currently this vegetation unit is classified as Least Threatened, but biodiversity are usually high in such rocky habitats. The site consists of mostly natural vegetation. There are some degraded areas on site and various pathways across the site, but the vegetation is largely intact. The most prominent degradation on site is the dense alien infestation within the central drainage line. The vegetation types on the site can be divided into several different habitat types namely: rocky areas, rocky grassland, grassland, wetlands and riparian and degraded grassland. Species richness in the grassland vegetation of the study area is relatively high. A total of 105 species were recorded on the site during the brief survey, 6 of which are exotic and an additional 9 of which are declared weeds or invader plants. The proportion of naturalized exotic and invader species is low (14%) despite the high levels of disturbance of the habitat of some parts of the site. There are 21 Red or Orange List plant species that have been recorded from the quarter degree grids in which the site is situated. Of these 21 species, nine were considered to have a high chance of occurring in the type of habitats available on site and one species was found on site, namely *Khadia beswickii*,

The site is therefore considered to have habitat suitable for a number of species of conservation concern. Topographically the site holds a Class 3 ridge according to the Ridges v.6 shapefiles model, which stems from the southern border of the site and extends to the centre. The site contains areas that have been identified as irreplaceable due to primary vegetation occurring on the site. The geology of the ridge gives rise to large rocks and boulder like structures, with many crevices, gaps and hollows between them. Such large rocks provide invaluable and irreplaceable shelter to many plants and animals, either from harsh environmental conditions or predators. The fact that fire usually doesn't enter between the crevices of rocky boulders and tends to move swiftly in the grasslands, makes rocky ridges ideal habitat for more fire sensitive species of fauna and flora. Also, microclimates are created in between or behind large rocks where the amount of sunlight is limited and moisture tends to persist longer. The ridge and surrounding grassland is potential suitable habitat for the protected lepidopteran, *Aloeides dentatis dentatis*.

The vegetation study recommends that buffers be applied to the ridge and the rocky outcrops due to the ability of these habitats to sustain high levels of biodiversity and provide refuge as well as corridors for many species on the site. Additionally these habitats may be suitable for South African Hedgehog (*Atelerix frontalis*).

The riparian vegetation in the wetland area was heavily altered because of the presence of invader plant species along most areas of the watercourse. Due to the bare soils and low percentage of ground cover underneath these invaders and the storm-driven ephemeral nature of the watercourse in the southern regions of the site, the levels of erosion was very high along many areas of the watercourse. Differences in interpretation of current and historic wetland boundaries may exist due to erosion of the macro channel bank. The subject property is located within the urban edge (Gauteng Conservation Plan, 2002) therefore a recommended buffer of 30 meters for wetland features and 32 meters for riparian features are advocated by GDARD (2009) to protect potential sensitive faunal and floral species that may inhabit the subject property.

No RDL faunal species were observed during the field survey of the proposed development area, but the following species of concern have a medium to high propability of occurring on the site, namely *Atelerix frontalis* (South African Hedgehog), *Mystromys albicaudatus (*White tailed mouse), *Eupodotis caerulescens* (Blue korhaan), *Falco naumanni* (Lesser Kestrel), *Circus ranivorus* (African Marsh Harrier), *Aloeides dentatis dentatis* (Roodepoort type), *Aloeides dentatis dentatis* (Suikerbosrand type) and *Metisella meninx.*

Cultural Heritage

Various sites of cultural significance were identified namely outcrops of the Mondeor conglomerates of the Witwatersrand Supergroup occurs on the site and as type-site it is used by geologists in the interpretation of the geology of the Witwatersrand goldfields. Two sites used by adherents of the Apostolic faith were identified and at least one of these is still actively being used. Furthermore, two informal dump sites of unknown date were identified.

The geological site is viewed to have a high significance on a regional level and should be avoided at all costs. The two sites used by adherents of the Apostolic faith are viewed to have a high significance on a local level. The two informal dump sites are viewed to have a medium significance on a regional level and test excavations should be done on them by a suitably qualified archaeologist.

Therefore, from a heritage point of view it can be recommended that the proposed development can continue. If archaeological sites or graves are exposed during construction work, it should immediately be reported to the relevant authorities.

GENERAL PROJECT DESCRIPTION

The development proposal entails the mix use development of the South Hills (Moffat Park) (Moffat Park) Township Extension 2 with a public open space, to be zoned as follows:

- Residential 1
- Residential 3
- Business 1
- Educational
- Institutional
- Municipal
- Public open space

SOUTH HILLS DEVELOPMENT DRAFT EIA

The Growth Management Strategy of the City of Johannesburg prescribes that future growth, in terms of population and economic growth, of the City is accompanied by complimentary services and infrastructure whilst also meeting spatial and socio-economic objectives. Areas along public transport routes have been classified as High Priority areas. These areas present latent opportunities to restructure the current fragmented City form and to provide more inclusive environments for the City's communities. In these areas it is the City's intention to prioritise infrastructure provision and institutional support in order to achieve appropriate and effective densities, create an optimum mix of uses and encourage the creation of inclusionary housing to facilitate affordable and "gap-market" housing.
Ancillary activities associated to the proposed development entail the following:

- Transport nodes/terminal and roads
- Internal roads
- Service areas and servitudes

RISKS AND KEY ISSUES

Potential risks and impacts include, but are not limited to, the following:

- Biophysical impacts including alteration of fauna and flora habitats, as well as the potential loss of land with limited agricultural potential
- Socio-economic impacts including visual, safety and security, increased traffic and the provision of adequate services and the lack of services in the area

Key issues assessed include:

- Provision of services
- Loss of areas of ecological significance
- Responsiveness to the City of Johannesburg's requirements

IMPACTS AND MITIGATION MEASURES

Relevant issues were evaluated in terms of the most important parameters applicable to the environmental management. Several mitigation measures have been identified that could manage the impacts, or mitigate them successfully.

CONCLUSION

The development proposal accommodates and avoids the sensitive areas and in the areas that has been identified as development land, has no fatal flaws in terms of the institutional, bio-physical or socio-economic environments.

RECOMMENDATION

It is recommended that the **South Hills (Moffat Park) Mix use Development (preferred alternative)** option is utilised. Furthermore, it is recommended that this application be approved, subject to all specifications of:

- The Environmental Impact Assessment Report
- The Environmental Management Plan (EMP)
- All specialist studies
- All requirements of the City of Johannesburg
- The requirements of the Record of Decision by GDARD

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APPENDICES

1.0 NEMA REQUIREMENTS

In accordance with the Regulations in terms of Chapter 5 of the NEMA, 1998, Section 31 Environmental Impact Assessment Reports require the following:

Environmental impact assessment reports

31.

*(1) If a competent authority accepts a scoping report and advises the EAP in terms of regulation **30**(1)(a) to proceed with the tasks contemplated in the plan of study for environmental impact assessment, the EAP must proceed with those tasks, including the public participation process for environmental impact assessment referred to in regulation **28**(h)(i)-(iv) and prepare an environmental impact assessment report in respect of the proposed activity.*

*(2) An environmental impact assessment report must contain all information that is necessary for the competent authority to consider the application and to reach a decision contemplated in regulation **35**, and must include—*

(a) details of—

(i) the EAP who compiled the report; and

(ii) the expertise of the EAP to carry out an environmental impact assessment;

(b) a detailed description of the proposed activity;

(c) a description of the property on which the activity is to be undertaken and the location of the activity on the property, or if it is—

(i) a linear activity, a description of the route of the activity; or

(ii) an ocean-based activity, the coordinates where the activity is to be undertaken;

(d) a description of the environment that may be affected by the activity and the manner in which the physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity;

(e) details of the public participation process conducted in terms of subregulation (1), including—

(i) steps undertaken in accordance with the plan of study;

(ii) a list of persons, organisations and organs of state that were registered as interested and affected parties;

(iii) a summary of comments received from, and a summary of issues raised by registered interested and affected parties, the date of receipt of these comments and the response of the EAP to those comments; and

(iv) copies of any representations and comments received from registered interested and affected parties;

(f) a description of the need and desirability of the proposed activity;

(g) a description of identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity;

(h) an indication of the methodology used in determining the significance of potential environmental impacts;

(i) a description and comparative assessment of all alternatives identified during the environmental impact assessment process;

(j) a summary of the findings and recommendations of any specialist report or report on a specialised process;

(k) a description of all environmental issues that were identified during the environmental impact assessment process, an assessment of the significance of each issue and an indication of the extent to which the issue could be addressed by the adoption of mitigation measures;

(l) an assessment of each identified potentially significant impact, including—

(i) cumulative impacts;

(ii) the nature of the impact;

(iii) the extent and duration of the impact;
(iv) the probability of the impact occurring;
(v) the degree to which the impact can be reversed;
(vi) the degree to which the impact may cause irreplaceable loss of resources; and
(vii) the degree to which the impact can be mitigated;

(m) a description of any assumptions, uncertainties and gaps in knowledge;

(n) a reasoned opinion as to whether the activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;

(o) an environmental impact statement which contains—
(i) a summary of the key findings of the environmental impact assessment; and
(ii) a comparative assessment of the positive and negative implications of the proposed activity and identified alternatives;

*(p) a draft environmental management programme containing the aspects contemplated in regulation **33**;*

*(q) copies of any specialist reports and reports on specialised processes complying with regulation **32**;*

(r) any specific information that may be required by the competent authority; and

(s) any other matters required in terms of sections 24(4)(a) and (b) of the Act.

*(3) The EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in subregulation **31**(2)(g), exist.*

2.0 INTRODUCTION

LEAP was appointed by Calgro M3 Holdings as Independent Environmental Consultants to undertake the appropriate environmental process for the proposed development on Holding 88 Klipriviersberg Estate Small Holding A.H, Portion 65 (Portion of Portion 7) of the Farm Klipriviersberg no 106 I.R and Erf 1202 South Hills (Moffat Park). The process was registered for an EIA with the Gauteng Department of Agriculture and Rural Development (GDARD) under Regulation 544 & 545 of the National Environmental Management Act (Act No 107 of 1998) and was assigned the reference number **GAUT 002/22-12/E0042**

3.0 OBJECTIVES

The following objectives have been set:

- Preparation of the Environmental Impact Assessment Report by describing the context of the proposed development, including the bio-physical, socio-economic and institutional environments;
- Identification of impacts that the proposed development could have on the bio-physical and social environment;
- Assessment of the attitudes of the surrounding landowners and other interested and affected parties (I&APs) to such a proposed development;
- Recommendation of measures that will reduce, mitigate or eliminate identified negative impacts and improve the positive impacts; and therefore
- Determine whether the proposed development site is deemed suitable for the proposed development from an environmental perspective.

4.0 ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

The Environmental Assessment Practitioner is Dr. Gwen Theron who is a registered professional member of the following associations:

- SACLAP (South African Council for Landscape Architectural Profession)
- ILASA (Institute of Landscape Architects South Africa)
- IAIA (International Association for Impact Assessments)

Please refer to **Annexure A** – Prof Gwen Theron's Curriculum Vitae

5.0 LOCATION

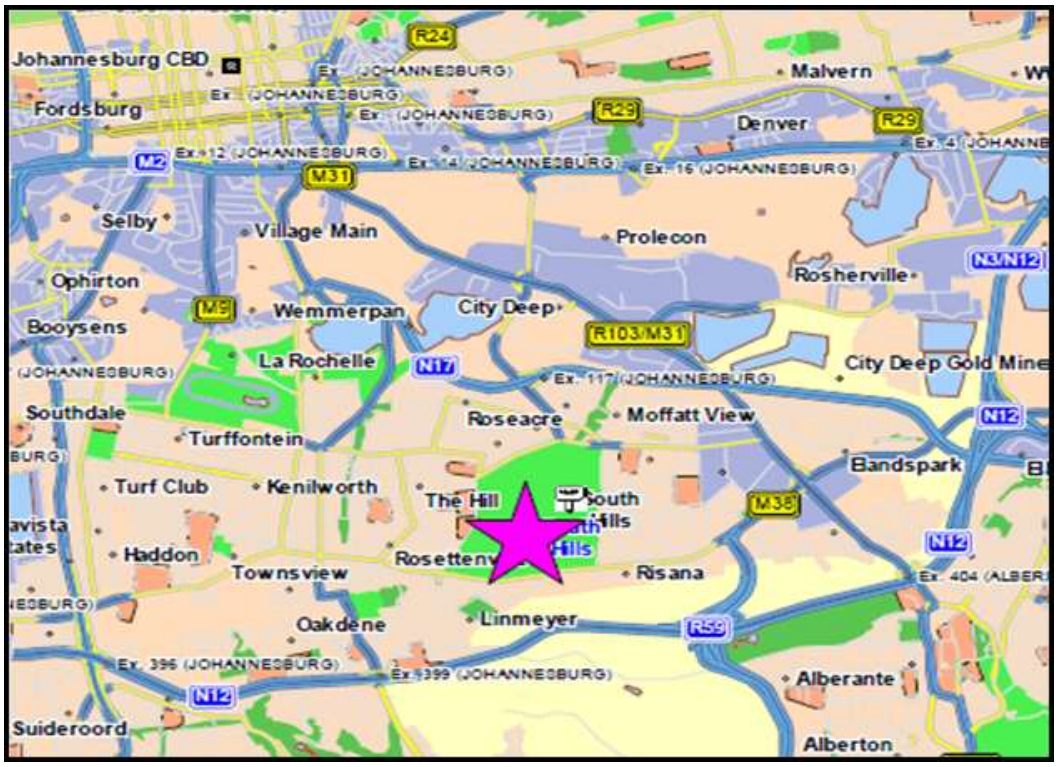


Figure 1: Locality map

The subject property is located within the municipal area of jurisdiction of the City of Johannesburg Municipality. The site is situated on South Rand Road (M38) to the south east of the CBD of the City of Johannesburg. Southern Klipriviersberg Road is abutting the property to the north and Nephin Road abuts the property on the eastern boundary. Vickers Road (M19) forms an intersection with Southern Klipriviersberg Road to the north of the proposed township.

The Development is situated in close proximity of the N12 Highway to the south and the N17 Highway to the north. The Reading Interchange to the south east of the property is located in close proximity and is accessible through South Rand Road as illustrated on the **Figure 1: Locality Map**. The property is approximately 199.62 ha in extent.

6.0 BRIEF DESCRIPTION OF THE PROPOSED DEVELOPMENT

6.1 PROPOSED LAND USES

It is proposed that Erf 1202 be rezoned and subdivided into **597** erven and public roads as indicated in Table 1. Holding 88 Klipriviersberg Estate Small Holding A.H and Portion 65 (Portion of Portion 7) of the Farm Klipriviersberg no 106 I.R (South Hills Extension 2) will consist of **1166** erven and is to be developed in phases and will be zoned as indicated in Table 1.

The above-mentioned land use rights will be incorporated into the City of Johannesburg Town Planning Scheme, 1980 in terms of the provisions of section 125 of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986). However, these rights will be incorporated in accordance with the proposed phasing of the township as illustrated on the proposed township layout plan that accompanies the application documents. The proposed land uses are discussed below.

Table 1: Proposed Land Use Schedule

ERF DESCRIPTION	ERF SIZE (ha)	PROPOSED ZONING
Erf 2012 South Hills (Moffat Park)	37.6546	Residential 1 (550 erven) Residential 3 (22 erven) Educational(1 erf) Institutional (4 erven) Public Open Space(20 erven)
Holding 88 Klipriviersberg Estate Small Holding A.H and Portion 65 (Portion of Portion 7) of the Farm Klipriviersberg no 106 I.R	161.97	Residential 1 (1059 erven) Residential 3 (66 erven) Business 1 (1 erf) Educational (1 erf) Institutional (8 erven) Municipal (1 erf) Public Open Space (30 erven)

6.2 LAYOUT

The layout of the proposed development is indicated on **Figure 2: Proposed layout**. However, to fully understand the layout it is important to review the remainder of the report specifically the environmental factors, and the town planning components.

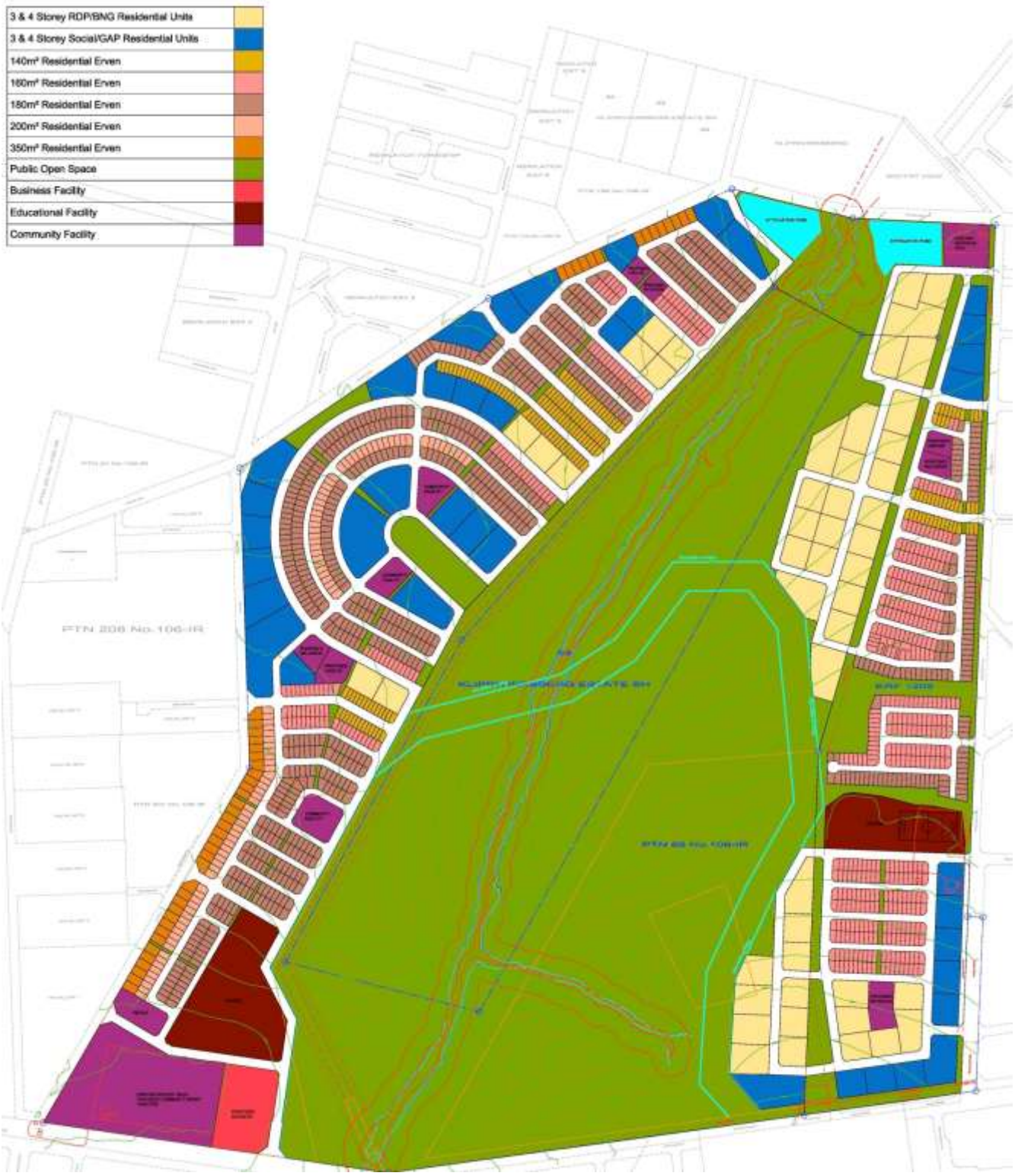


Figure 2: Proposed layout (1)

7.0 NEMA LISTED ACTIVITIES TO BE APPLIED FOR

In April 2006 the Minister of Environmental Affairs and Tourism passed Environmental Impact Assessment Regulations in terms of Chapter 5 of the National Environmental Management Act, 1998 (NEMA). The regulations replaced the Environmental Impact Assessment (EIA) regulations which were promulgated in terms of the Environment Conservation Act, 1989 in 1997. The most recent regulations came into place on 18 June 2010 and, therefore, all application must be made in terms of these NEMA regulations. The purpose of this process is to determine the possible negative and positive impacts of the proposed development on the surrounding environment and to provide measures for the mitigation of negative impacts and to maximise positive impacts.

Notice No. R 543 to R 547, specifically 544,545 and 546 list activities that mustbe considered in the process to be followed. The Activities listed in Notice No. R 545 and 546 requires that the Scoping and EIA process be followed. However, the draft guidelines document supplied by DEAT states that if any activity being applied for is made up of more than one listed activity and the scoping and EIA process is required for one or more of these activities, the full EIA process must be followed for the whole application.

The proposed development includes a number of listed activities and therefore it will be necessary to follow a full EIA process (as an independent process) in terms of NEMA. The applicant is therefore applying for the following listed activities.

Table 2: Listed Activities to be applied for

Regulations	Activity No (s)	Description
GN Reg 544 18 June 2010	9	The construction of facilities or infrastructure exceeding 1000 metres in length for the bulk transportation of water, sewage or storm water - (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more, excluding where: a. such facilities or infrastructure are for bulk transportation of water, sewage or storm water or storm water drainage inside a road reserve; or where such construction will occur within urban areas but further than 32 metres from a watercourse, measured from the edge of the watercourse.
GN Reg 544 18 June 2010	10	The construction of facilities or infrastructure for the transmission and distribution of electricity (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more
GN Reg 544 18 June	11	The construction of: (i) canals; (ii) channels; (iii) bridges;

2010		(iv) dams; (v) weirs; (vi) bulk storm water outlet structures; (vii) marinas; (viii) jetties exceeding 50 square metres in size; (ix) slipways exceeding 50 square metres in size; (x) buildings exceeding 50 square metres in size; or (xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.
GN Reg 544 18 June 2010	18	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from (i) a watercourse; (ii) the sea; (iii) the seashore; (iv) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater- but excluding where such infilling, depositing, dredging, excavation, removal or moving.
GN Reg 544 18 June 2010	22	The construction of a road, outside urban areas, (i) with a reserve wider than 13,5 meters or, (ii) where no reserve exists where the road is wider than 8 metres, or (iii) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice June of 2010.
GN Reg 544 18 June 2010	37	The expansion of facilities or infrastructure for the bulk transportation of water, sewage or storm water where: (a) the facility or infrastructure is expanded by more than 1000 metres in length; or (b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more– excluding where such expansion: (i) relates to transportation of water, sewage or storm water within a road reserve; or (ii) where such expansion will occur within urban areas but further than 32 metres from a watercourse, measured from the edge of the watercourse.
GN Reg 544 18 June 2010	39	The expansion of (i) canals; (ii) channels; (iii) bridges; (iv) weirs; (v) bulk storm water outlet structures; (vi) marinas; within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, where such expansion will result in an increased development footprint but excluding where such expansion

		will occur behind the development setback line.
GN Reg 544 18 June 2010	47	The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre - (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres – excluding widening or lengthening occurring inside urban areas.
GN Reg 545 18 June 2010	15	Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more;

8.0 DESCRIPTION OF THE INSTITUTIONAL ENVIRONMENT

The land development proposal of the proposed development site is influenced by the varying scales of institutional environments. The institutional context that is considered and reflected upon ranges from that of international, national, provincial and local / municipal, while each institutional arena as it decreases in scale, requires development planning that is more detailed and responsive to the proposed development site and the surrounding environment.

The following institutional framework documents are relevant to the proposed township and development site.

8.1 INTERNATIONAL CONTEXT

Relevant International Conventions to which South Africa is part of and which should influence the proposed site development:

Table 3: International context

CONVENTION	RESPONSE
■ Ramsar Convention on Wetlands, 1971 ■ Framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.	The site is part of the Quaternary catchment C22B, which drains southwards via the Klipspruit, which enters the Vaal river at Vereeniging. The western half of the site slopes towards the northeast and the eastern half of the site slopes towards the northwest towards the existing river ■ Development to occur outside of the 1:100 year floodline ■ Rehabilitation of this drainage line should be implemented as far as possible. Development and particularly storm water management, to be responsive to surrounding wetlands / hydrological systems which drain into the Klipspruit which enters the Vaal river. The implementation of attenuation and dissipation measures to minimise the velocity and quantity of storm water and therefore minimising environmental impacts is essential.

	Please refer to the **Draft Environmental Management Plan (EMP) – Annexure K** for further information in this regard.
■ Agenda 21 adopted at the United Nations Conference on Environment and Development (UNCED) in 1992 ■ Action plan and blueprint for sustainable development.	The proposed development is to be planned, constructed and operated with sustainability as a key prerequisite and baseline standard. Please refer to **Annexure K – Draft EMP** for practical steps in achieving best practice methodologies.
■ Convention on Biological Diversity, 1995 ■ Provided and added stimulus for a re-examining and harmonization of its activities relating to biodiversity conservation.	An ecological specialist completed an assessment of the proposed development site to determine the biodiversity and habitat value. This assessment is to inform the planning and design phases as far as possible.

8.2 NATIONAL CONTEXT

The following national legislature is to be considered and applied to the development proposal during the environmental process:

Table 4: National Context

LEGISLATURE	RESPONSE
8.2.1 Development Facilitation Act (DFA), 1995 (Act No 67 of 1995)	
An act which formulates a set of general principles to serve as guidelines for land development that encourage economically sound, socially acceptable and politically correct town planning. The following principles are applicable:	Even though the town planning procedure is not following the DFA process, the DFA principles have great importance with respect to good planning and development and are therefore to be aligned to as far as possible.
Promote integration of social, economic, institutional and physical aspects of land development	The township establishment process and the environmental impact assessments are transparent and offer the opportunity for interested and affected parties to participate / comment on the proposed development. The processes have been designed to ensure that people's rights in respect of a healthy and economically viable environment are protected. All these aspects are taken into account during the environmental process to ensure a sustainable development.
Promote availability of residential and	A number of employment opportunities will be provided for

employment opportunities in close proximity to each other	workers during the construction phase of the project which will occur over a number of years. The establishment of the South Hills (Moffat Park) Extension 2 Township (preferred land use) celebrates and promotes a close linkage between living and working environments.
Promote a diverse combination of land uses	Diverse land use is key to the success of this proposal as a mixed-use nodal development.
Discourage urban sprawl and promote a compact city	The proposed development site is strategically located along accessible transport corridors and urban amenities.
Development of skills and capacities	Skills development and capacity building will be an essential component of the construction phase while numerous opportunities in the retail, business and management industries will be made available during the operational phase. Adjoining unemployed community members be employed and trained as far as possible during the construction phase. For further information please refer to **Annexure K – Draft EMP**
Furthermore, the DFA encourages environmentally sound land development practices and the promotion of the sustained protection of the environment.	The environmental impact assessment process ensures that sound land development practices are implemented, creating a balance between environmental, social and economic requirements.
8.2.2 National Environmental Management Act (NEMA), 1998 (Act No 107 of 1998) and the Environmental Impact Assessment Regulations	
NEMA aims to provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote cooperative governance and procedures for coordinating environmental functions exercised by organs of state and to provide for matters connected therewith. The Act recognises that many inhabitants of South Africa live in an environment that is harmful to their health and well being and focuses on the following:	NEMA principles are to be adhered to, with specific reference to development that promotes integrated environmental management, while being socially, environmentally and economically sustainable. The proposed development layout must reflect NEMA principles, such as protection of the environment for present and future generations by preventing pollution and ecological degradation, promoting conservation and securing ecologically sustainable development and utilisation of natural resources.
Everyone has the right to an environment that is not harmful to his or	Please refer to the **Draft EMP** (**Annexure K**) which discusses health and safety issues during the construction

her health or well-being	phase.
The State must respect, protect, promote and fulfil the social, economic and environmental rights of everyone and strive to meet the basic needs of previously disadvantaged communities	This development will provide employment opportunities (construction and operational phase therefore forming an inclusive environment with employment opportunities in close proximity to accommodation.
Inequality in the distribution of wealth and resources, and the resultant poverty, are among the important causes as well as the results of environmentally harmful practices;	Good integration is ensured due to the mixed land use character of the proposed development, as well as its location within the urban realm along public and private transport corridors. A number of communities and individuals will be able to access and invest in the proposed development.
Sustainable development requires the integration of social, economic and environmental factors in the planning. implementation and evaluation of decisions to ensure that development serves present and future generations	Social and environmental aspects are taken into consideration during the environmental impact assessment process, along with appropriate market feasibility research, to ensure that the project is viable and sustainable. The proposed development responds to the Regional Spatial Development Framework of the local municipality.
Everyone has the right to have the environment protected, for the benefit of present and future generations through reasonable legislative and other measures that: ■ prevent pollution and ecological degradation ■ promote conservation ■ secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development	The proposed development plan ensures that areas of cultural and ecological value are maintained. Also, please refer to the Draft EMP (**Annexure K**) which thoroughly discusses aspects that are related to ecological preservation, conservation and sustainable development.
The environment is a functional area of concurrent national and provincial legislative competence, and all spheres of government and all organs of state must co-operate with, consult and support one another	Applicable national, provincial and municipal legislation is taken into account and aligned to during the environmental impact assessment process
Furthermore, this act develops a framework for integrating good environmental management into all development activities, while establishing principles guiding the exercise of functions affecting the	A thorough impact assessment process has been undertaken – derived from: ■ Public Participation ■ Specialist studies ■ Map assessments ■ Institutional and legal assessment

environment. Integrated Environmental Management (IEM) is designed to ensure that the environmental consequences of development proposals are understood and adequately considered in the planning, implementation and management of all developments. It is intended to guide, rather than impede the development process by providing an approach to gathering and analysing information, and ensuring that it can be easily understood by all interested and affected parties in the development. The purpose of IEM is to resolve or lessen any negative environmental impacts and to enhance positive aspects of development proposals.	■ This process allows for adequate planning and mitigation. Please refer to **item 15** of this report which provides information on the assessment process.
8.2.3 The National Water Act, 1998 (Act No 36 of 1998)	
The National Water Act: ■ Recognizes that water is a scarce and unevenly distributed national resource which occurs in many different forms which are all part of a unitary, inter-dependent cycle ■ Recognizes that while water is a natural resource that belongs to all people, the discriminatory laws and practices of the past have prevented equal access to water, and use of water resources ■ Acknowledges the National Government's overall responsibility for and authority over the nation's water resources and their use, including the equitable allocation of water for beneficial use, the redistribution of water, and international water matters ■ Recognizes that the ultimate aim of water resource management is to achieve the sustainable use of water for the benefit of all users	In essence, the proposed development should align to the purpose of this Act, therefore ensuring that the nation's water resources are protected, utilised, developed, conserved, managed and controlled in ways that take the following into account: ■ Meeting basic human needs of present and future generations ■ Promoting equitable access to water ■ Promoting efficient, sustainable and beneficial use of water in the public interest ■ Reducing and preventing pollution and degradation of water resources ■ Facilitating social and economic development ■ Providing for the growing demand for water use The Act requires that (where applicable) the 1:50 and 1:100 year flood line be indicated on all the development drawings that are being submitted for approval. These flood lines have been indicated, however they do not directly affect the proposed development site. Please refer to **Figure 9 – Environmental Composite**.

■ Recognizes that the protection of the quality of water resources is necessary to ensure sustainability of the nation's water resources in the interests of all water users ■ Recognizes the need for the integrated management of all aspects of water resources and, where appropriate, the delegation of management functions to a regional or catchment level so as to enable everyone to participate	
8.2.4 National Environmental Management: Biodiversity Act, (Act No 10 of 2004)	
The National Environmental Management: Biodiversity Act aims to provide for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act1, 1998; including the – ■ Protection of species and ecosystems that warrant national protection ■ The sustainable use of indigenous biological resources ■ The fair and equitable sharing of benefits arising from bio-prospecting involving indigenous biological resources ■ The establishment and functioning of a South African National Biodiversity Institute; and for matters connected therewith	An ecological specialist was appointed to undertake the flora and fauna biodiversity assessment, with specific attention to Red Data Listed species, habitats and biodiversity The specialist study is aligned to requirements of this act. The proposed development aligns to the purpose of this Act and the above-mentioned specialist report. The sustainable utilisation of indigenous biological resources, i.e. indigenous vegetation species will be reintroduced to the newly created urban open spaces as far as possible, thereby resulting in an ecological urban regeneration strategy. Please refer to **Annexure K – Draft EMP** for additional information.
8.2.5 The National Heritage Resources Act, 1999 (Act No 25 of 1999) (NHRA)	
The NHRA focuses on the following, that have reference to the development of land: ■ To introduce an integrated and interactive system for the management of the national heritage resources	The proposed development should respond to the requirements of the National Heritage Resources Act as well as that of the South African Heritage Resources Agency (SAHRA). Section 38 of the NHRA makes provision for application by developers for permits before any heritage resources may be damaged or destroyed.

■ To promote good government at all levels, and empower civil society to nurture and conserve their heritage resources so that they may be bequeathed to future generations ■ To lay down general principles for governing heritage resources management throughout the Republic ■ To introduce an integrated system for the identification, assessment and management of the heritage resources of South Africa ■ To establish the South African Heritage Resources Agency together with its Council to co-ordinate and promote the management of heritage resources at national level ■ To set norms and maintain essential national standards for the management of heritage resources in the Republic and to protect heritage resources of national significance ■ To provide for the protection and management of conservation-worthy places and areas by local authorities; and to provide for matters connected therewith	A specialist in the field was appointed to conduct a Cultural Heritage Resources Impact Assessment. Various sites of cultural significance were identified namely outcrops of the Mondeor conglomerates of the Witwatersrand Supergroup occurs on the site and as type-site it is used by geologists in the interpretation of the geology of the Witwatersrand goldfields, two sites used by adherents of the Apostolic faith were identified and at least one of these is still actively being used and two informal dump sites of unknown date were identified. The geological site is viewed to have a high significance on a regional level and should be avoided at all costs. The two sites used by adherents of the Apostolic faith are viewed to have a high significance on a local level. The two informal dump sites are viewed to have a medium significance on a regional level and test excavations should be done on them by a suitably qualified archaeologist. In the event that artefacts / graves / areas of cultural significance are discovered during the construction phase, all work should be halted and a cultural heritage practitioner should be appointed to examine the site and make appropriate recommendations.
This legislation aims to promote good management of the national estate, and to enable and encourage communities to nurture and conserve their legacy so that it may be bequeathed to future generations. It recognises that our heritage is unique and precious and it cannot be renewed as it – ■ Helps us to define our cultural identity and therefore lies at the heart of our spiritual well-being and has the power to build our nation ■ Has the potential to affirm our	The importance of cultural heritage and its related preservation is discussed within the Draft EMP (**Annexure K**). The EMP places focus on the education of people regarding places of heritage value and artefacts, should they come across them during their work activities.

diverse cultures, and in so doing shape our national character ■ Celebrates our achievements and contributes to redressing past inequities ■ Educates and deepens our understanding of society and encourages us to empathise with the experience of others ■ Facilitates healing and material and symbolic restitution and it promotes new and previously neglected research into our rich oral traditions and customs	

8.3 PROVINCIAL CONTEXT

Please note that the below section only highlights some of the most prudent issues in this regard.

Table 5: Provincial context

DOCUMENT	RESPONSE
8.3.1 Gauteng Planning and Development Act (Act No 3 of 2003) (GPDA)	
The GPDA states that Policy, administrative practice and law in the Province shall promote development and land use which:	
Promotes the more compact development of urban areas and the limitation of urban sprawl and the protection of agricultural resources;	The proposal addresses this requirement via its position within the urban realm adjacent to existing and proposed transport corridors and adjacent to urban amenities. Also, the mixed-use character caters for high densities which will minimise the necessity for urban development on the outskirts of urban areas.
Supports the correction of historically distorted spatial patterns of settlement in Gauteng;	To be addressed as far as possible with regard to the provision of more affordable high density accommodation therefore catering for a greater socio-economic spectrum.
Promotes integrated land development in rural and urban areas in support of each other;	This proposal forms part of a greater planning framework for the area and integration is ensured via appropriate service and infrastructure provision, the provision of linking transport corridors and the continuity of ecological corridors.
Results in the use and development of land that optimises the use of existing resources such as engineering services and social	Existing bulk services are to be utilised as far as possible with appropriate upgrades where necessary.

facilities; and	
Owns positive development qualities, particularly with regard to public environments.	The urban design framework and planning methodologies cater for inclusive design at a pedestrian scale, incorporating public open spaces and positive streetscapes.
Policy, administrative practice and law in the Province shall with due regard to the principles of the National Environmental Management Act, 1998 (Act 107 of 1998) promote sustainable development that: ■ Is within the fiscal, institutional and administrative means of the Province ■ Meets the basic needs of all citizens in an affordable way ■ Establishes viable communities with convenient access to economic opportunities, infrastructure and social services ■ Optimises the balanced use of existing resources, including resources relating to agriculture, land, water, minerals, services infrastructure, transportation and social facilities ■ Balances environmental considerations of preserving natural resources for future generations with economic development practices and processes ■ Ensures the safe utilisation of land by taking into consideration its biophysical factors such as geology and undermined or hazardous areas	Sustainable principles are to be incorporated as far as possible within the planning, design, construction and operational phases therefore ensuring an appropriate balance between social, economic and environmental contexts. The environmental impact assessment process ensures that sound land development practices are implemented, creating a balance between environmental, social and economic requirements.
8.3.1 The Gauteng Draft Red Data Policy	
The primary purpose of the Draft Red Data Policy is to protect red data plant species in Gauteng Province. The Red Data plant policy is based on the following basic principles: Species endemic to the province of Gauteng must be afforded the utmost protection, as they occur nowhere else in the world. As the relevant provincial agency, this Department's responsibility towards Gauteng endemics is absolute; Conservation of only one population essentially	An ecological specialist was appointed to assess the proposed development sites fauna and flora biodiversity, with specific attention to Red Data Listed species. Only one Red or orange Data Listed floral species were noted during the field assessment namely the *Khadia beswickii* . No protected tree species as listed by DWAF (National Forests Act 84 of 1998)) were noted.

ignores the lowest level of biodiversity that is genetic diversity. It is therefore imperative that all populations of Red Data plant species are protected; In situ conservation is preferable to ex situ conservation. Removing a population from its natural habitat and placing it under artificial conditions results in the erosion of the inherent genetic diversity and characteristics of that species; In order to ensure the persistence of a population, it is imperative that the ecological processes maintaining that population persist; In order to ensure the persistence of a plant population, it is vital that pollinators are conserved. To conserve pollinators, the habitat must be managed to provide appropriate nest sites for pollinators and a seasonal succession of suitable forage and host plants. Pollinators must be protected from herbicide and pesticide application and soil disturbance must be prevented; Translocation of Red Data species is an unacceptable conservation measure since the translocated species may have undesirable ecological effects; Rural parts of the province should be protected from insensitive developments and urban sprawl/encroachment should be discouraged. Policy guiding developments should therefore be less lenient in rural areas; Red Data plant species historically recorded on a site, but not located during searches within species flowering seasons may be dormant (as a seed bank or subterranean structures such as bulbs/tubers/etc.) due to unfavourable environmental conditions; Suitable habitat adjacent to known populations of Red Data plant species has a high probability of being colonized; In order to protect a plant population that occurs in a fragmented landscape from edge effects, it is necessary to protect it with a buffer zone that extends from the edge of the	By developing this portion of land which is centrally located within the urban realm and adjacent to existing and future urban infrastructure, urban sprawl and the development of rural locations are minimised. There were areas within the proposed development site that offer good habitat type and quality that would support a wide diversity of species, many of which are RDL. These areas have been incorporated into a proposed ecological sensitivity map. The RDL species that may be potentially dependent on the area to be affected by the proposed development activities are well-represented within protected areas within the region. It is therefore perceived that the proposed development activities will not have a significant impact on the overall conservation of RDL fauna within the region. Please refer to Annexure D – Faunal and Flora Biodiversity Assessment Please refer to Figure 9 – Environmental Composite

population; and The transformation of natural vegetation to crops is considered as permanent as urbanization and may cause the extinction of Red Data plant populations and their pollinators.	
8.3.2 The Gauteng Draft Ridges Policy	
The quartzite ridges of Gauteng are one of the most important natural assets in the northern provinces of South Africa. This is because these ridges, and the area immediately surrounding the ridges, provide habitat for a wide variety of fauna and flora, some of which are Red List, rare or endemic species or, in the case of certain of the plant species, are found nowhere else in South Africa or the world. The ridges also fulfil functions that are necessary for the sustainability of ecosystems such as the recharging of groundwater, wetlands and rivers, wildlife dispersal and providing essential habitat for pollinators. Ridges also have a socio-cultural role in that they provide aesthetically pleasing environments that are valued by residents, tourists and recreational users. Human activities such as urbanization, mining and the planting of alien vegetation may undermine the contribution that ridges make to the environment. The conservation of ridges falls within the ambit of the environmental right and this policy comprises one of the measures that GDARD has taken to give effect to the environmental right in respect of ridges, therefore ensuring that: ■ The use of ridges is sustainable; ■ Members of the public are able to make informed decisions regarding proposals for development on ridges and the use of ridges; ■ Officials make consistent decisions in respect of planning and environmental applications that involve negative impacts on ridges; and	Topographically the site holds a Class 3 ridge, which stems from the southern border of the site and extends to the centre. The site contains areas that have been identified as irreplaceable due to primary vegetation occurring on the site. The geology of the ridge gives rise to large rocks and boulder like structures, and in other areas flat sheets, with many crevices, gaps and hollows between them. Such areas provide invaluable and irreplaceable shelter to many plants and animals, either from harsh environmental conditions or predators. Although the specialist studies recommend 200 m it is considered excessive in and urban area. It must also be considered that these areas are inverted ridges – in fact a valley. It is thus recommended that a 50m buffer zone be applied to the ridge area. Please refer to **Figure 3 – GDARD Policies**

■ The Department's responsibility in respect of the protection of the environment is carried out in an efficient and considered manner.	

8.3.1 GDARD Conservation Plan, Version 2

A comprehensive Provincial Conservation Plan (C-Plan) was launched as a decision support tool in September 2005 to protect the province's ecosystems and associated biodiversity and to act as an information tool for the conservation of sensitive areas. The C-Plan was an outcome of the Gauteng Biodiversity Gap Analysis Project (BGAP). The C-Plan system maps important biodiversity areas in Gauteng and provides information to protect important and sensitive areas within the province. This information is used by government as a decision-making tool with regard to EIA approvals. The second version (C-Plan version 2) indicated that 25 percent of Gauteng needs to be conserved to meet the Province's biodiversity targets. The C-Plan includes protected areas, irreplaceable and important sites due to the presence of Red Data species, endemic species and potential habitat for these species to occur.	According to CPlan3 the proposed development site is not affected by dolomite, important or irreplaceable areas. Please refer to **Figure 3 – GDARD Policies** and **Figure 4 – GAPA** Please refer to **Annexure D – Faunal and Flora Biodiversity Assessment**.

8.3.1 Protection of Agricultural Land in Gauteng Revised Policy (June 2006)

The purpose of this policy is to protect land that has been identified as high agricultural potential from development, for the exclusive use of agricultural production to: ■ Feed the nation; ■ Provide upcoming farmers with access to productive land; and ■ Meet national targets set in this regard. Land with high agricultural potential is a scarce non-renewable resource and the need to protect it is a high priority for GDARD. GDARD applies a risk averse and cautious approach when	The proposed development site, according to the Gauteng Agricultural Potential Atlas (GAPA Version 3), is not situated within a region delineated as an Agricultural Hub; however the GAPA information indicates that a portion of the development site has moderate agriculture potential. Please refer to **Figure 4 – GAPA**

development of such land for purposes other than agricultural production is proposed. The risk averse and cautious approach should be the basis of decision-making on the transformation of high potential agricultural land and land deemed as irreplaceable in terms of meeting Agri-BBBEE and national food security targets and thus legally protected from transformation. GDARD is not in support of development on high potential agricultural land that resides outside the urban edge. Seven agricultural hubs have been identified in the Gauteng Province. All the hubs are located outside the urban edge. The hubs are regarded as areas with a large amount of high agricultural potential land that should be preserved for agricultural use and will accordingly be planned and managed as a holistic agricultural unit. Each of the hubs will be developed to align with its agricultural potential and preferred land use and will be supported by current economic indicators.	

8.4 LOCAL CONTEXT

Please note that the below section only highlights some of the most prudent issues in this regard.

Table 6: Local Context

DOCUMENT	RESPONSE
8.4.1 Johannesburg Local Municipality Spatial Development Framework (SDF) 2010-2011	
The SDF refers to Johannesburg and immediate surroundings. Furthermore, South Hills (Moffat Park) is defined as a centre where "nodal development" has to be encouraged. The proposed properties form part of the larger area known as Moffat Park. Development Objective 3 for Sub Area 29 in the RSDF 2010/2011 deals entirely with Moffat Park. The proposed interventions are the optimal uses of the area. The guidelines set out to achieve the said intervention are as follows: • Implementing of urban design proposals and the development of multifunctional	All these aspects have been responded to as per the urban design framework and the town planning application.

recreational facilities. • Investigating the possible limited development of the park. • Suitable alternative uses to recreation may be considered by the City as long as it's to the City's satisfaction. Direct quotes from the SDF include the following: "Moffat Park is a prominent feature in the area. The large site has become increasingly derelict and dangerous and a problematic part of the area".	

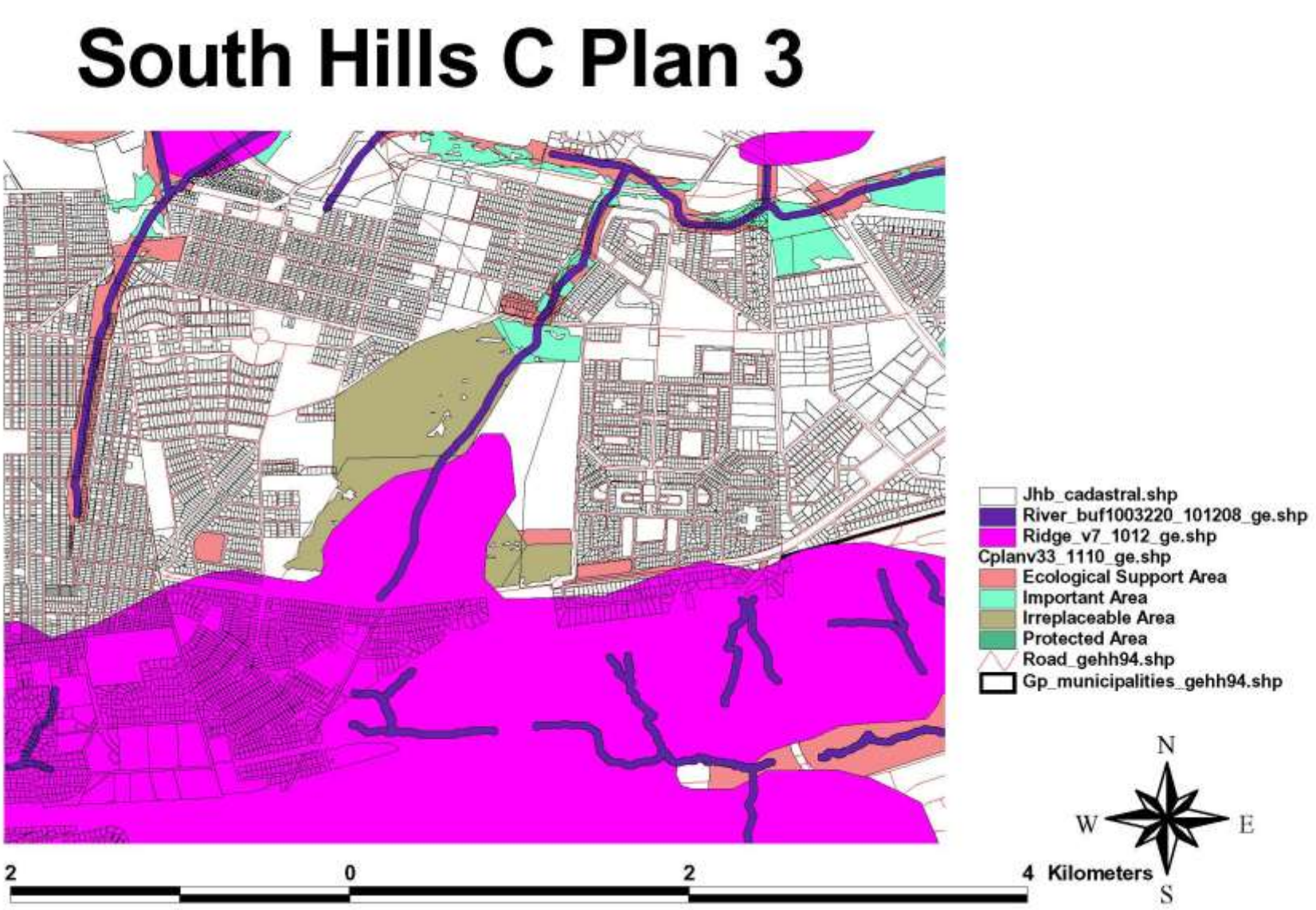


Figure 3: GDARD Policies

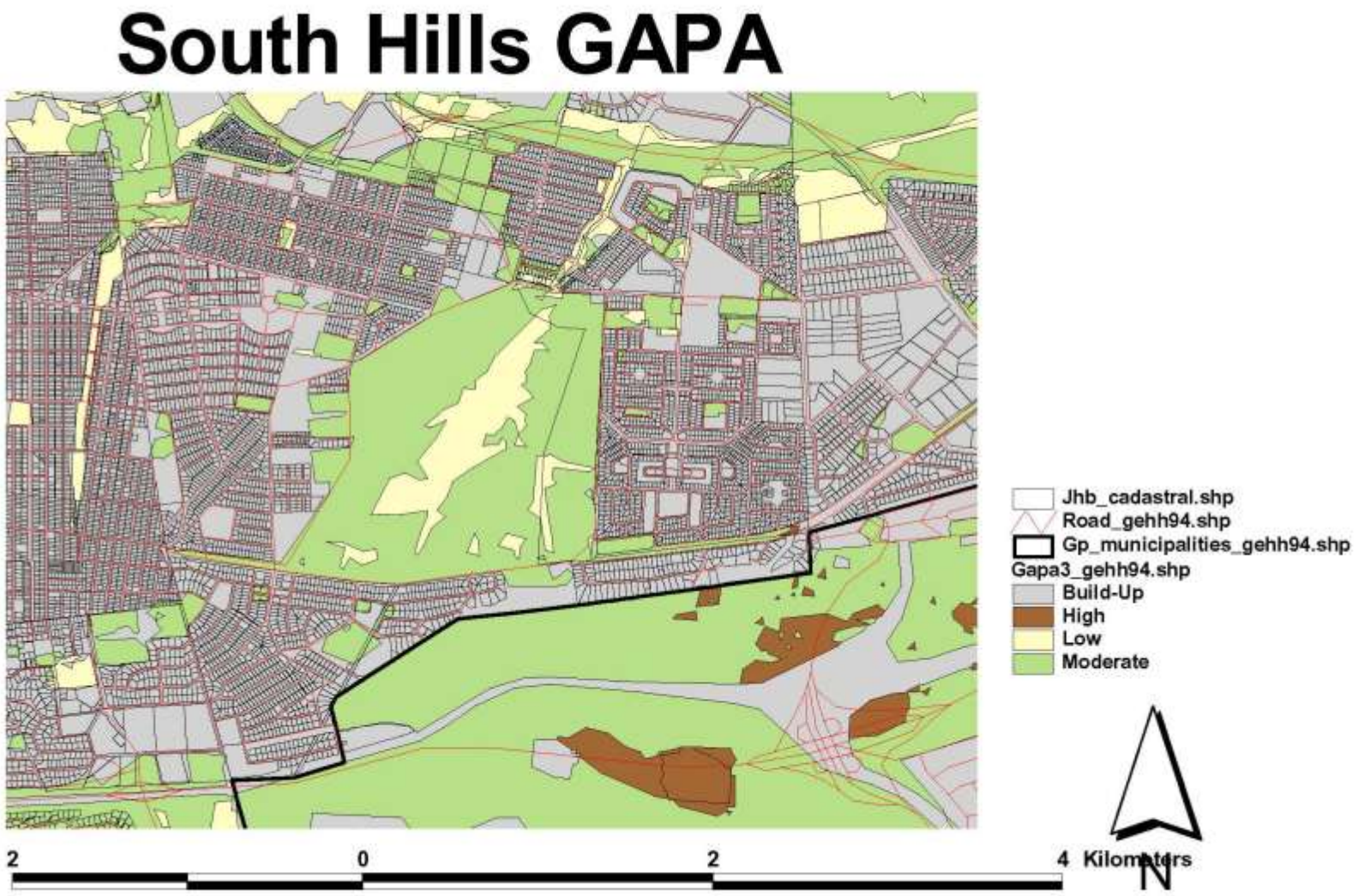


Figure 4: GAPA (Source CPLAN 3)

9.0 DESCRIPTION OF THE BIO-PHYSICAL ENVIRONMENT

9.1 CURRENT LAND USE, ZONING AND SITE CHARACTER

In terms of the Johannesburg Town Planning Scheme, 1979, the properties are currently zoned as "Public Open Space". The property is currently predominantly vacant with the presence of a sports facility on the south-western corner of the property. Pikitup currently has a garden refuse collection site on the property and obtains access from East Road. The property is also currently utilised for illegal dumping and some squatters have settled on the site.

9.2 SURROUNDING LAND USE, ZONING AND CHARACTER

Land use in the jurisdictional area of City of Johannesburg. The surrounding land use can characterised by single residential houses, high density walk-up residential units, educational facilities and industrial and business activities.

Figure 5: Aerial photo

9.3 TOPOGRAPHY

The general slope direction of the site is towards the north with an elevation difference of 103m between the upper southern and lower northern portions of the site. The topography varies from 1688m amsl in the north to 1787m amsl in the south and has an average gradient of 1:20.

It is largely due to the topography that the areas of the site is categorised as a Class 3 Ridge by the GDARD conservation unit. Although it is recognised that some areas meet the criteria of a ridge, some areas do not meet these criteria.

An assessment of the 5degree slopes were made on site and it was found that some areas actually fall outside these criteria. The assessment was done on 5 m contours and

Implications:

The topographical character of the site will not result in major implications on the proposed development.

1:2 500

Figure 6: Contour Map

Sport field (soccer club)

Areas located outside the GDARD Ridge criteria (parallel hatch)

Area that is proposed for development – the line runs along the power line servitude. (light green)

Slope areas that meet the GDARD ridge criteria

Figure 6a: Site areas that fall outside the slope conditions as defined by GDARD.

9.4 GEO HYDROLOGY AND HYDROLOGY

For full details, please refer to **Annexure C** for the Phase 1 **Geohydrolical Report** compiled by *WSM Leshika Consulting (Pty) Ltd.*

The site is part of the Quaternary catchment C22B, which drains southwards via the Klipspruit, which enters the Vaal river at Vereeniging. The western half of the site slopes towards the northeast and the eastern half of the site slopes towards the northwest towards the existing river. Surface water will naturally flow perpendicular to the contours in the direction of the drainage channels and river.

The Upper Vaal catchment has been experiencing salinity problems due to extensive urban, industrial and mining development within the catchment. The Upper Vaal is considered to be the most important water resource system in South Africa. This property lies in the catchment that feeds into the Vaal barrage which is of strategic importance. The Vaal barrage has been experiencing increasing salinity and eutrophication; hence any development in this catchment area must be assessed in terms of potential impacts on the Vaal Barrage. Further declines in the water quality of the Vaal Barrage will lead to further ecological impacts, and an increase in the cost of water purification of water drawn from the barrage. The Klip is one of the most heavily impacted catchments of the Vaal system. The catchment is already highly stressed and has been heavily impacted by increasing discharges and deteriorating water quality. Water entering the Vaal barrage from this catchment is already below target levels. Consequently, any impacts from development must be seen not just in isolation but in terms of the cumulative impact of all developments.

The property lies on quartzites and conglomerates of the Central rand Group. These form a fractured low yielding aquifer of good quality. The aquifer can be classified as a poor aquifer, which is insignificantly yielding but of good quality, that will never be utilised for water supply and that will not contaminate other aquifers. The property lies in a headwater region of the catchment and no current abstraction exists. No upgradient contaminant sources exist. The aquifer is recharged in the south of the site and discharges in the north via a perennial spring, and through evapotranspiration by alien vegetation that runs along a drainage channel running through the site. The groundwater exploitation potential of the property is 27.4 mm/a, or 55 896 m3/a, or 153 m3/d. Due to its fractured nature and sandy shallow overburden, the aquifer is highly vulnerable to contamination. Since groundwater discharges within the property, contamination will not extend to any great distance, but will impact on surface water. The impacts of the development will be negligible to moderate and impact is on an already highly impacted catchment.

Also, the proposed development will be serviced by municipal services and the underground sources will thus not be affected from a capacity perspective.

Implications:
No development is to occur within the 1:100 or 1:50 year floodline delineation. Development and particularly storm water management, to be responsive to surrounding wetlands / hydrological systems.

The implementation of attenuation and dissipation measures to minimize the velocity and quantity of storm water and therefore minimizing environmental impacts is essential.

9.5 CLIMATIC CONDITIONS

Climatic conditions of the Gauteng Province vary significantly. The closest weather station to the site is Lanseria Airport weather station and information from that weather station indicates that the average annual rainfall in the area is 670mm, normally between 415mm and 750mm per annum. The majority of precipitation takes place between October and April. Hail can be expected periodically, mild damage to fruit can be expected two out of every three years and severe damage two out of five. The mean minimum temperature for the area is 18,6˚C, while the mean maximum is 28,8˚C.

Implications:
No specific development implications have been identified.

9.6 GEOTECHNICAL INVESTIGATION

For full details, please refer to **Annexure B** for the Phase 1 **Geotechnical Investigation** compiled by *WSM Leshika Consulting (Pty) Ltd* during the feasibility study (Phase 1)

Methodology
The investigation comprised of profiling the soil in 28 test pits as well as laboratory testing of samples of the representative soil layers.

General geology
According to the 1:250 000 scale geological sheet the site is mainly under by (RT) quartzite, conglomerate and sandy shale of the Turffontein Formation, Central Rand Group, Witwatersrand Supergroup. Conglomerate was encountered in the southern portion of the investigated area with quartzite in the centre to northern portions. According to the geological map and accompanied explanation no specific mineral deposits are present on or in close proximity of the site. The site is not underlain by dolomite and/or chert and a dolomite stability investigation is therefore not required.

Soil profiles
Rock outcrop is evident throughout the majority of the site. The areas where no rock outcrops are visible are generally covered with very thin topsoil, hillwash or pebble marker horizon underlain by a thin reworked residual horizon. The upper transported and reworked residuum was generally encountered down to less than 1 m below ground level from where very soft to hard rock quartzite and conglomerate were encountered. The consistencies of the transported and highly reworked residual horizons were generally described as loose to medium dense with an open soil structure. The topsoil and reworked residuum consist mainly of sand originated from the weathering of the quarzites and finer portion of the conglomerates. The typical pebble marker and/or hillwash horizon mainly consist of abundant sub rounded to rounded quartz gravel and pebbles originated from the weathering of the conglomerate horizons with a sandy matrix.

The upper sandy topsoil, colluvial and reworked sandy residual material is generally slightly open structured and pinholed with open root channels with localised termite activity. These horizons have a moderate to high collapse potential depending on the moisture content at time of construction. The combined thickness of the potentially collapsible horizon is however generally relatively thin and are not considered a major concern for the proposed development. Thicker collapsible transported alluvial sandy material was encountered adjacent to the river towards the northern portion of the site. This material has a high collapse potential but are expected to be below the 1:100 year floodline and thus outside the developable area and not considered a major geotechnical constraint for the proposed development.

Groundwater

No shallow groundwater or seepage water was encountered in any of the test pits excavated during investigation. Seasonal shallow seepage water (mainly on the contact between the upper transported and lower highly to unweathered rock) and saturated soil conditions is expected during and towards the end of the wet season, especially during and after heavy and/or continuous downpours. The slight ferruginisation (orange mottles and staining) is an indication of seasonal saturated conditions. T

Slope stability and erosion

Steep slopes are present next to the drainage gully's, small drainage channels and river. The steep areas will be situated outside the developable areas and are not considered to be a constraint from a stability point of view for the proposed residential units. A detailed slope stability analysis however needs to be considered for any proposed high load bearing foundations placed on or adjacent to the steep slopes such as foundations for possible bridge, road or pipeline crossings. The slope stability analysis is site specific and falls outside the scope of this Phase I Geotechnical investigation. The upper sandy soils have an intermediate to high susceptibility to erosion due to the slope angles and sandy nature of the material. Erosion is expected especially after the surface vegetation has been removed and after heavy and/or continuous downpours where congress water flow are expected.

Implications

There are no adverse conditions indicating that development cannot take place on the site for the proposed structures. Founding conditions on the site vary from very favourable to very unfavourable, mainly due to steep slopes and the collapse potential of some of the soil material adjacent to the steep slopes. The whole of the site is thus economically and practically developable. Development inside the 1:100 year floodline should be avoided at all costs unless special design techniques are incorporated.

9.7 AGRICULTURAL POTENTIAL

The proposed development site, according to the Gauteng Agricultural Potential Atlas (GAPA Version 3), is not situated within a region delineated as an Agricultural Hub, therefor it was not necessary to complete an Agricultural potential assessment was not completed. (see **Figure 4**)

9.8 ECOLOGICAL ASSESSMENT

Please refer to the **Ecological Assessment** as completed by *Greenline Environmental Consulting (Pty) Ltd***, Riparian and Wetlands delination** as completed by *Animalia Zoological and Ecological*

Consultation, **Ridge Ecological Assessment** as completed by *Animalia zoological and Ecolgical Consultation* and the **Vegetation Assesment**, as completed by *David Hoare Consulting CC,* all of the afore mentioned assessments were completed during the feasibility stage (Phase 1) and are attached under **Annexure D.**

It must be noted that these reports have a variety of opinions on the site conditions.

The ecological assessment studies were undertaken to determine the overall condition and ecological status of the proposed development site, as well as the occurrences (and possible potential habitat) of any RDL faunal or floral species. The findings of this studies should be used to propose recommendations and mitigation actions for the construction and management phases of the proposed development activity pertaining to various ecological processes, as well as to develop an Environmental Management Plan (EMP).

A desktop study to gain background information on the physical habitat and potential faunal and floral biodiversity lists of the proposed development site and surrounding areas was initially undertaken. These lists included the RDL species applicable to the area and a description of the physical habitat and vegetation types represented within the area. This information was then cross-referenced with the data from the habitat assessments done during the field survey. The field surveys for the Vegetation assessment were undertaken during November and December 2009. The field surveys for the ridge ecological assessment were undertaken during October and November 2009. The field surveys for the Riparian and Wetland delineation was undertaken in October 2009 and the field surveys for the Ecological report were undertaken in September 2009.

9.8.1 Vegetation type status and general area assessment

The assessment site occurs within the grassland biome. The grassland biome is generally restricted to the high central plateau and is limited to the summer rainfall areas.

The study area is situated within the Vegetation Type classified as Moist Cool HighveldGrassland, the area can be classified as Cymbopogon-Themeda Veld and the most recent vegetation map for South Africa (Mucina *et al.*, 2005), classifies this area as Soweto Highveld Grassland. According to Acocks (1988), there are two variations of Cymbopogon-Themeda Veld, a northern and a southern one. The northern variation occurs on the Highveld and represents the study area. It is sparse and tufted grassland occurring in areas with an elevation of 300 to 1500 m above sea level, summer rainfall and frosty winters. Important species include the grasses *Setaria sphacelata* var. *torta*, *Themeda triandra*, *Heteropogon contortus*, *Eragrostis racemosa*, *Eragrostis chloromelas*, *Elionurus muticus*, *Cymbopogon plurinodis*, *Brachiaria serrata* and *Eragrostis obtusa*, as well as a variety of forbs, including *Vernonia oligocephala, Scabiosa columbaria*, *Ziziphus zeyheriana*, *Helichrysum rugulosum, Anthospermum pumilum* subsp. *rigidum*, *Felicia filifolia* and many others.

According to the most recent vegetation map of the country (Mucina et al., 2005) the study area falls within Soweto Highveld Grassland. This vegetation type is considered to be Endangered. The Draft National List of Threatened Ecosystems (GN1477 of 2009), published under the National Environmental

Management: Biodiversity Act (Act No. 10, 2004), lists this vegetation type as Vulnerable. Soweto Highveld Grassland occurs on gently to moderately undulating landscapes. there is a continuous grassland cover that is only occasionally interrupted by small wetlands, narrow stream alluvia, pans and ridges or rocky outcrops.

Soweto Highveld Grassland occurs on shale, sandstone or mudstone of the Madzarawinge Formation or the intrusive Karoo Suite dolerites. The vegetation is described as a short to medium-high, dense, tufted grassland dominated almost entirely by *Themeda triandra* accompanied by other grasses such as *Elionurus muticus*, *Eragrostis racemosa*, *Heteropogon contortus* and *Tristachya leucothrix*.

From an ecological point of view, certain animals are impacted by poaching pressure from the squatters. This includes any animals of a suitable size such as the Helmeted Guineafowl, small antelope, tortoises, small carnivores, any birds that may be caught easily.

The site is mostly natural vegetation. There are some degraded areas on site and various pathways across the site, but the vegetation is intact, but significantly impacted by frequent fire activity. The most prominent degradation on site is the dense alien infestation within the central drainage line.

The watercourse bisecting the site is heavily impacted and dominated by alien invader stands of Black Wattle trees (*Acacia mearnsii*), Bluegum trees (*Eucalyptus* spp.) and species of weeds associated with disturbed soil conditions. Certain areas along this watercourse are eroded to a high degree. The main reason for this may be due to the fact that there is almost no undergrowth in the dense stands of Black Wattle and Bluegum trees which don't have ideal root systems for stabilising topsoil. When cut down (as in some areas on the site), the erosion is increased dramatically. Increased stormwater entering the system from the surrounding developments can also potentially worsen the erosion.

The riparian vegetation was heavily altered because of the presence of invader plant species along most areas of the watercourse. Due to the bare soils and low percentage of ground cover underneath these invaders (especially dense stands of Black Wattles) and the storm-driven ephemeral nature of the watercourse in the southern regions of the site, the levels of erosion was very high along many areas of the watercourse. This made identification of riparian habitat and the macro channel bank challenging, since the edges of the macro channel bank may change rapidly during heavy rains where surface runoff may erode the banks further. Differences in interpretation of current and historic wetland boundaries may exist due to this erosion of the macro channel bank. The wetland delineation at the northern part of the site did not present the same problem because of the lower slope.

The subject property is located within the urban edge (Gauteng Conservation Plan, 2002) therefore a recommended buffer of 30 meters for wetland features and 32 meters for riparian features are advocated by GDARD (2009) to protect potential sensitive faunal and floral species that may inhabit the subject property. Mitigation measures must also be put in place for controlling and addressing the already significant erosion along the water course.

This ridges play a vital role in supplying water to the non-perennial stream, it is part of Quaternary catchment C22B, which drains southwards via the Klipspruit and enter the Vaal river at Vereeniging. The

steep slopes and geohydrology of the ridge determines the volume of water discharge into the non-perennial stream, which in turn supports the sensitive and important wetland and riparian zones.

The geology of the (inverted) ridge gives rise to large rocks and boulder like structures, with many crevices, gaps and hollows between them. Such large rocks provide invaluable and irreplaceable shelter to many plants and animals, either from harsh environmental conditions or predators. The fact that fire usually doesn't enter between the crevices of rocky boulders and tends to move swiftly in the grasslands, makes rocky ridges ideal habitat for more fire sensitive species of fauna and flora. Also, microclimates are created in between or behind large rocks where the amount of sunlight is limited and moisture tends to persist longer; something that won't be found in featureless grasslands. The ridge and surrounding grassland is potential suitable habitat for the Protected lepidopteran *Aloeides dentatis dentatis*, as well as high biodiversity of fauna and therefore the demarcated sensitivity and buffer is it governed by the Gauteng Department of Agriculture and Rural Development (GDARD) the minimum requirements for Biodiversity Assessments (November 2009). The aforementioned states that "All ridges must be designated as sensitive" and "Where the interface between the lower slopes and adjacent land is deemed important for certain species, a buffer zone of 200m must be mapped and designated as sensitive."

It is also suggested that the rocky ridge areas be demarcated as sensitive with a buffer zone due to the ability of these habitats to sustain high levels of biodiversity and provide refuge as well as corridors for many species on the site. Additionally these habitats may be suitable for the South African Hedgehog (*Atelerix frontalis*) by providing dry shelter and coverage from predators.

Three habitat types of differing size and with differing vegetation (described below) were encountered on the property, these included the following:

- Rocky areas
- Rocky grassland
- Grassland
- Wetlands and Riparian areas
- Degraded Grassland

9.8.2 Floral assessment

9.8.2.1 Rocky areas

A characteristic feature of the site are the rocky outcrops, ledges and ridges, especially in the areas close to the central drainage line and in the more steeply sloping parts in the south of the site. The vegetation in these areas consists of grassland in-between the rocks and scattered to clumped low shrubs. Plant species occurring commonly in these areas include the shrubs, *Canthium gilfillanii*, *Englerophytum magalismontanum* and *Rhus magalismontanum*, the grasses *Aristida junciformis*, *Melinis repens*, *Sporobolus iocladus*, *Eragrostis chloromelas*, *Eragrostis racemosa* and *Schizachyrium sanguineum*, and the forbs, *Eriospermum porphyrovalve*, *Selaginella dregei* , *Khadia acutipetala*, *Dipcade ciliare*, *Crassula setulosa*, *Lotononis listii* and *Craterostigma wilmsii*. There **are no sensitive plant species** that were recorded within rocky areas, but it was considered likely that eight species of

conservation concern could occur here (one Endangered, two Vulnerable, three Near Threatened and two Declining species). The rocky areas are therefore considered to have high ecological sensitivity.

9.8.2.2 Rocky grassland

Most of the open grassland on site occurs on very shallow soils, often with sheets of rocks protruding at the surface. These occur adjacent to the rocky areas and from the drainage line. The soils are sandy and often contain quartz pebbles. The vegetation is of a medium height open to semi-closed grassland. Plant species occurring commonly in these areas include the grasses *Eragrostis chloromelas*, *Eragrostis curvula*, *Eragrostis racemosa*, *Melinis repens*, *Sporobolus iocladus*, *Michrochloa caffra*, *Aristida junciformis*, *Heteropogon contortus*, *Trachypogon spicatus*, *Cynodon dactylon* and *Hyparrhenia hirta* and the forbs,*Ledebouria revoluta*, *Kohautia amatymbica*, *Pearsonia sessilifolia*, *Eriospermum porphyrovalve*, etcetera. The species richness is moderate for grasslands at 20 species per 100m2. Many of the species are indicators of shallow soils or rocky areas and often occur on ridges or rocky outcrops. There was **one plant species of conservation concern (Vulnerable)** that was recorded within rocky grasslands and it was considered likely that four additional species of conservation concern could occur here (one Vulnerable, two Near Threatened and one Declining species). The rocky grassland is therefore considered to have high ecological sensitivity.

9.8.2.3 Grassland

There are small areas of grassland on site that occurs on deeper soils without any surface rock. The largest area of such grassland is in the western side of the site against the road. The vegetation is a tall grassland dominated by the thatching grass, Hyparrhenia hirta. Plant species occurring commonly in these areas include the grasses *Eragrostis chloromelas*, *Melinis repens*, *Heteropogon contortus*, *Cynodon dactylon* and *Hyparrhenia hirta* and the forbs, *Ledebouria revoluta*, *Eriospermum porphyrovalve*, *Felicia muricata*, etcetera. The species richness is low for grasslands at 14 species per 100m2. These grasslands appear to have been disturbed in the past and are located adjacent to a public road. Some of the species are indicators of disturbance. There were **no plant species of conservation concern** recorded within grasslands and it was considered unlikely that species of conservation concern could occur here. This grassland is therefore considered to have medium ecological sensitivity. It is, however, representative of an Endangered vegetation type, protected under provincial and National legislation and policies.

9.8.2.4 Wetlands and Riparian areas

There is a drainage line running from south to north through the site. This contains wetland vegetation, but is also severely invaded by alien trees, especially *Acacia mearnsii*. There is also a small wetland area in the western side of the site. This is a seasonal to temporary wetland that contains grassland vegetation. Some common species recorded in this area includes *Verbena bonariensis*, *Hyparrhenia hirta*, *Eragrostis curvula*, *Melinis repens* and *Setaria sphacelata*. The wetland areas are hydrologically important areas protected according to the National Water Act. The wetlands on and adjacent to the site are therefore considered to have high conservation importance and sensitivity.

9.8.2.5 Degraded grassland

Where there is local disturbance of sufficient proportions, the natural grassland has been altered to a degraded form dominated by weeds and perennial species that are able to tolerate the disturbance. Such grasslands are found in various large patches on site, but also in small patches in localised areas. Some common species recorded in this area includes *Hyparrhenia hirta*, *Eragrostis curvula*, *Cyperus esculentus*, *Walafrida densiflora*, *Heteropogon contortus*, *Cynodon dactylon*, *Eriospermum tenellum*, *Albuca* species, *Felicia muricata* and *Conyza podocephala*.

9.8.2.6 Red Data Species

The floral red data species assessment was conducted on species listed for Gauteng province (SANBI – Threatened species program, 2007 and Red and Orange listed plant species of Gauteng – GDACE, 2006). There are 21 Red or Orange List plant species that have been recorded from the quarter degree grids in which the study site is situated. Of these 21 species, nine were considered to have a high probability of occurring in the type of habitats which occur on the site and **one species namely, *Khadia beswickii* was found on site**. The site is therefore considered to have certain habitats that are suitable for a number of species of conservation concern.

It was suggested that the *Khadia beswickii* community that was found on site be protected insitu, with a 200m buffer. However, it is recommended that a 50 m buffer be located around the species and that furthermore, a scientific study be conducted to determine the suitability for transplant of the specific species. Several species of this particular genus occur in the area and it is possible to relocate these species easily since they occur on hard rock sheets and can easily be lifted from the rock sheet and relocated without any disruption of the plan to another suitable location.

The motivation for the potential relocation of the species lies in the facts that the development areas will be urban. Also large numbers of persons will gain access to the conservation / open space areas and protection of these species cannot be guaranteed. If the species are located to a very specific ecologically area, and included in a protection area with a research monitoring program associated with it, the continued existence can be better guaranteed. To run such a project required funding, and with the additional residential units that can be located on the land, these studies can be financed on along term basis.

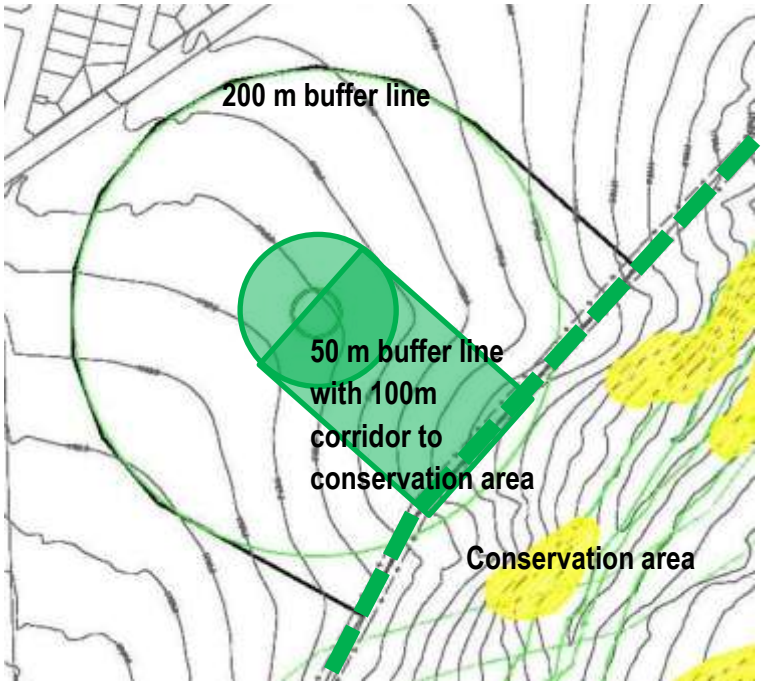


Figure 7: Red data Species buffer proposal

9.8.3 Faunal assessment

The faunal assessment included field observations in conjunction with an extensive literature study. This is done due to the fact that many faunal species are often secretive, have nocturnal habitats or climatic conditions during the assessment may not be suitable to enable observations to occur (example, winter, cold, rain or wind). Field work included traversing of the habitats with a sweep net in order to identify insects. No nocturnal assessments or specific trapping for small mammals or insects was conducted on the property. Detailed discussion of the different faunal taxa follows below:

According to GDARD, C-Plan3 there are no Red- or Orange data listed fauna species on the proposed site.

The site is considered to have habitat suitable for a number of species of conservation concern. Topographically the site holds a Class 3 ridge, which stems from the southern border of the site and extends to the centre. The geology of the ridge gives rise to large rocks and boulder like structures, with many crevices, gaps and hollows between them. Such large rocks provide invaluable and irreplaceable shelter to many animals, either from harsh environmental conditions or predators. The fact that fire usually doesn't enter between the crevices of rocky boulders and tends to move swiftly in the grasslands, makes rocky ridges ideal habitat for more fire sensitive species of fauna. Also, microclimates are created in between or behind large rocks where the amount of sunlight is limited and moisture tends to persist longer. The ridge and surrounding grassland is potential suitable habitat for the protected lepidopteran, *Aloeides dentatis dentatis*. These habitats may also be suitable for South African Hedgehog (*Atelerix frontalis*).

The following birds were spotted on the site, Common Quail (*Coturnix coturnix*), Helmeted Guineafowl (*Guttera edouardi*), Hadeda Ibis (*Bostrychia hagedash*), Cape Sparrow (*Passer melanurus*), Southern Red Bishop (*Euplectes orix*), Southern Masked Weaver (*Ploceus velatus*), Black-chested Prinia (*Prinia flavicans*), Crested Barbet (*Stactolaema olivacea*), Crowned Lapwing (*Vanellus coronatus*) and African Wattled Lapwing (*Vanellus senegallus*) during the field assessment.

Common Baboon Spiders (*Harpactira* sp.) was confirmed nesting in burrows in the western grassland area.

9.8.3.1 Red Data Fauna

The property was assessed for the presence of red data or threatened faunal species. Both national and provincial red data species lists were consulted. **No RDL faunal species were observed** during the field survey of the proposed development area, but the following species of concern have a medium to high probability of occurring on the site, namely *Atelerix frontalis* (South African Hedgehog), *Mystromys albicaudatus (*White tailed mouse), *Eupodotis caerulescens* (Blue korhaan), *Falco naumanni* (Lesser Kestrel), *Circus ranivorus* (African Marsh Harrier), *Aloeides dentatis dentatis* (Roodepoort type), *Aloeides dentatis dentatis* (Suikerbosrand type) and *Metisella meninx.*

Implications

- The proposed development site contains wetlands, riverine and associated riparian habitats, class 3 ridges and rocky outcrops that could potentially be impacted negatively through ecologically insensitive construction methods.
- Construction should be limited to the dry seasons as far as possible, with silt fencing and sediment traps being implemented to negate the impact of soil erosion and sub-sequential siltation of the associated aquatic habitats
- The proposed development activities, if undertaken in an environmentally responsible manner and the proposed ecological sensitivity map is adhered to, is perceived to have an insignificant effect on the overall conservation of RDL species within the region.

10.0 DESCRIPTION OF SOCIO-ECONOMIC ENVIRONMENT

10.1 CULTURAL HERITAGE ASSESSMENT

For further information, please refer to **Annexure E** for the **Cultural Heritage Resources Impact Assessment** as completed by *J van Schalkwyk Heritage Consultant*

10.1.1 Scope of the Study

An independent heritage consultant was appointed to conduct a survey to locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of the proposed development site. The following are the most important sites and objects protected by the National Heritage Act:

- Structures or parts of structures older than 60 years
- Archaeological sites and objects
- Palaeontological sites
- Meteorites
- Ship wrecks
- Burial grounds
- Graves of victims of conflict
- Public monuments and memorials
- Structures, places and objects protected through the publication of notices in the Gazette and Provincial Gazette
- Any other places or object which are considered to be of interest or of historical or cultural significance
- Geological sites of scientific or cultural importance
- Sites of significance relating to the history of slavery in South Africa
- Objects to which oral traditions are attached
- Sites of cultural significance or other value to a community or pattern of South African history

10.1.2 Methodology

All relevant maps and documents on the site were studied. The site was visited and evaluated.

10.1.3 Findings

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area in which a mixed land-use development is proposed. Various sites of cultural significance were identified namely:

- Outcrops of the Mondeor conglomerates of the Witwatersrand Supergroup occurs on the site and as type-site it is used by geologists in the interpretation of the geology of the Witwatersrand goldfields. This site is viewed to have a high significance on a regional level and should be avoided. This area will be included in the open space and will not be developed.
- Two sites used by adherents of the Apostolic faith were identified. At least on of these is still actively being used and is viewed to have a high significance on a local level. These areas cannot be retained and can be moved to a location within the open space areas.
- Two informal dump sites of unknown date were identified and are viewed to have a medium significance on a regional level. These areas cannot be retained and will be excavated prior to demolished.

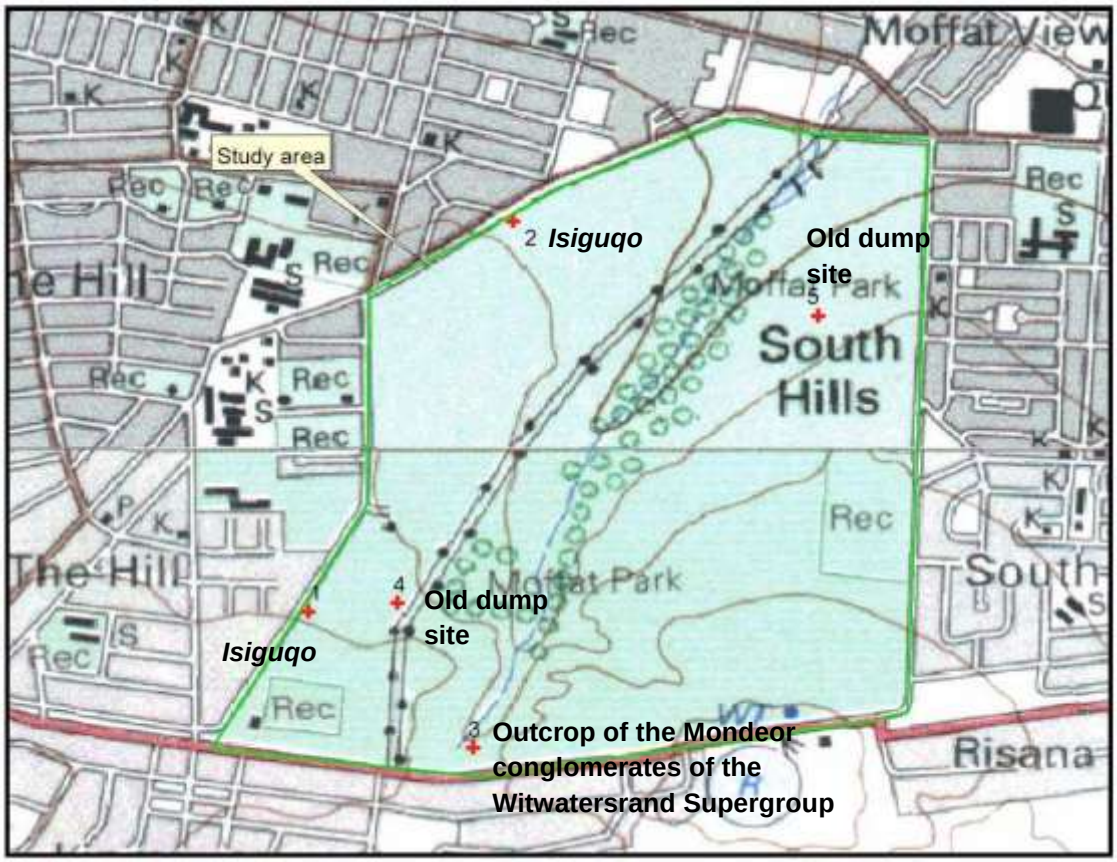


Figure 8: Heritage Findings Map

From a heritage point of view the proposed development can continue with mitigation measures put in place. Should any archaeological sites or graves be exposed during construction work it should be reported to the relevant Authorities or Institutions.

Implications
From a heritage point of view the proposed development can continue with mitigation measures put in place. Should any archaeological sites or graves be exposed during construction work it should be reported to the relevant Authorities or Institutions.

10.2 VISUAL INTEGRITY OF THE AREA

Due to the topography and location of the study area, the proposed development will have some visual impact. However, it could have a positive impact if the development is planned well and integrated into the surroundings.

The following visual criteria were used to determine what possible visual impact the proposed development could have on the surrounding environment:

Table 7: Visual Impact Analysis

PREDICTED IMPACT			
Visual criteria	**Low**	**Medium**	**High**
Quality of the area	The site or surrounding environment has little or no natural quality	**The site or surrounding environment has some natural quality**	The site or surrounding environment has a definite natural quality
Compatibility with **surrounding** environment	**The development will blend in / compliment the surrounding environment completely**	The surrounding environment will be able to accommodate the development without looking out of context	The surrounding environment will not be able to accommodate the development. Development will look abnormal in setting
Viewing distance	Continuous viewing distance to site is less than 500m	Continuous viewing distance to site is between 500 m and 1 km	**Continuous viewing distance to site is more than 1 km**
Visual acceptance capability	**The environment can visually accept the type of development, due to its location adjacent to the existing CBD**	The environment can moderately accept the type of development, due to its varied vegetation and land-uses	The environment cannot visually accept the type of development, due to its unvarying vegetation and land-uses

The visual assessment shows that the visual quality of the development can fit into the surrounding residential areas due to the similar scale and texture of the proposed residential units. . However, the views from the residential areas towards the site will be different than currently experienced. Although large areas of the natural lands will be retained, the residents will not be able to see it directly from their houses as it is currently perceived.

Figure 9: Views from the residential areas will be impacted with the proposed development.

Figure 10: Ecologically significant areas will be retained for physical and visual relief.

Implications

It can be deducted that the proposed development will be able to blend in with the surrounding environment and will not look out of place due to its location within the urban realm. However, the views from the existing residential areas will largely be changed to be a developed areas rather than natural areas.

The architectural and landscape architectural guidelines for the proposed development will be developed to allow for a positive aesthetic influence on the surrounding environment. The guidelines will include placing of buildings, aspects of finishes, lights pollution, colours to blend into the surrounding colours, heights of buildings, and roof finishes. Aesthetics and contextual appropriateness is to be a major aspect of these guidelines.

10.3 INFRASTRUCTURE AND SERVICES

10.3.1 Traffic and Access Routes

Please refer to **Annexure F – Transportation Assessment** as completed by *Mariteng Management Solutions.*

The development is bounded by Southern Klipriversberg Road (M19), which bounds the south of the site, Nephin Road bounds the eastern side of the property, South Rand Road (M38) to the north of the site and East Street which bounds the western part of the site, in the Moffat Park area.

South Rand Road can be classified as a Class 2 road, with one lane per direction along the section where it passes through the site. The majority of intersections along the route where it passes through the site are unsignalised with priority on South Rand Road. The road forms a major east-west link and connects the site with the R59 (Sybrand van Niekerk Freeway) and Heidelberg Road to the east. To the west the road intersects with Klip River Drive and Comaro Road in the west. All these roads form major north-south arterials linking the southern side of Johannesburg and Alberton area with the CBD and the northern areas of Johannesburg. Access to the site will be provided from South Rand Road. South Rand Road is classified as a Mobility Spine and falls under the jurisdiction o fthe Johannesburg Roads Agency (JRA).

Nephin Road is a north-south road intersection with South Rand Road in the south and intersection with Southern Klipriversberg Road or North Street in the north-eastern side of the site and can be classified as a Class 3 road with one lane per direction. The road contains speed humps along three points. Direct access to the residential properties along the eastern side of the road is also provided.

North Road forms the extension of Nephin Road, linking the area in which the site is situated, Wemmerpan Road, to the northwest and is classified as a Class 3 Road with one lane per direction. The road falls under the jurisdiction of the Johannesburg Roads Agency (JRA).

Southern Klipriversberg Road is a Class 3 road, with one lane per direction. The road forms a major east-west commuter corridor and based on the proposed township layout, two access points to the property are proposed from Southern Kliprversberg Road. The road is classified as a Mobility Road and forms part of the Strategic Public Transport Network of the City of Johannesburg. The road falls under the jurisdiction of the Johannesburg Roads Agency.

East road is a Class 3 Road with one lane per direction. The road provides direct access to individual residential properties, residential clusters, Créche and the sports grounds and main school entrance located along the western side of East Road. Speeds humps have been introduced along East road. East Road will also provide access to the new applicant site. The road falls under the jurisdiction of the Johannesburg Roads Agency.

The proposed development will generate 2 201 (AM Peak), 376 (Midday Peak – School Traffic), 1 672 (PM Peak) and 407 (SAT Peak) peak hour trips. Given the expected peak hour demand on the external road network, the study only evaluated the morning and afternoon peak hours.

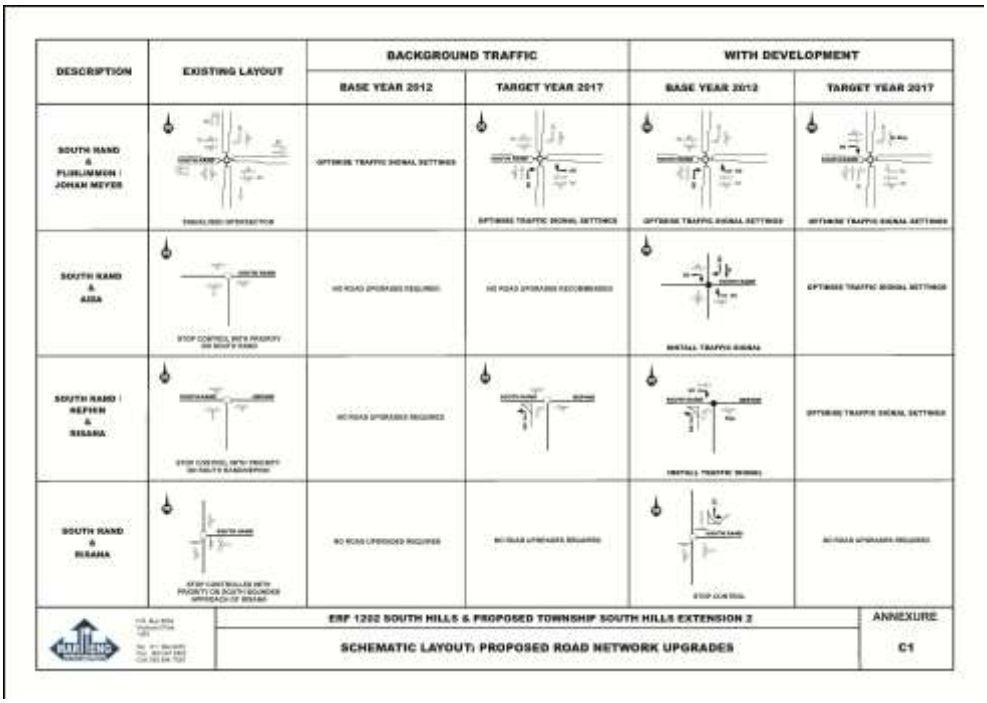
Based on the results of the Traffic Impact Assessment upgrades at the following intersections are recommended:

- The intersection of South Rand Road & Plinlimmon Road/Johan Meyer Street:
- The intersection of South Rand Road Risana Avenue/Nephin Street
- The intersection at South Rand Road & R59 (Sybrand van Niekerk Freeway)
- The intersection at Southern Klipriversberg Road & North Road/Nephin Road
- The intersection at Southern Klipriversberg Road & Vickers Road
- The intersection at Vickers Road & North Street
- The intersection at Southern Klipriversberg Road & East Road (West Terminal)
- Southern Klipriversberg Road & East Road (East Terminal)
- The intersection at Plinlimmon Road & East road

The main access points for the township will be provided from South Rand Road, Nephin Road Southern Klipriversberg Road and East Road.

The proposed internal road network will consist of the following: the two portions of land will be served by a network of paved Class U4 and Class U5 roads. These roads will all comprise of one lane per direction. The road reserve widths for these roads vary between 10.5m, 13.0m and 16.0m.

The area is well served by frequent public transport throughout the day. However, given the extent of the development and the demographics of the potential residents, substantial upgrades will be required. Southern Klipriversberg Road is in terms of the R.S.D.F. earmarked for a future BRT route.



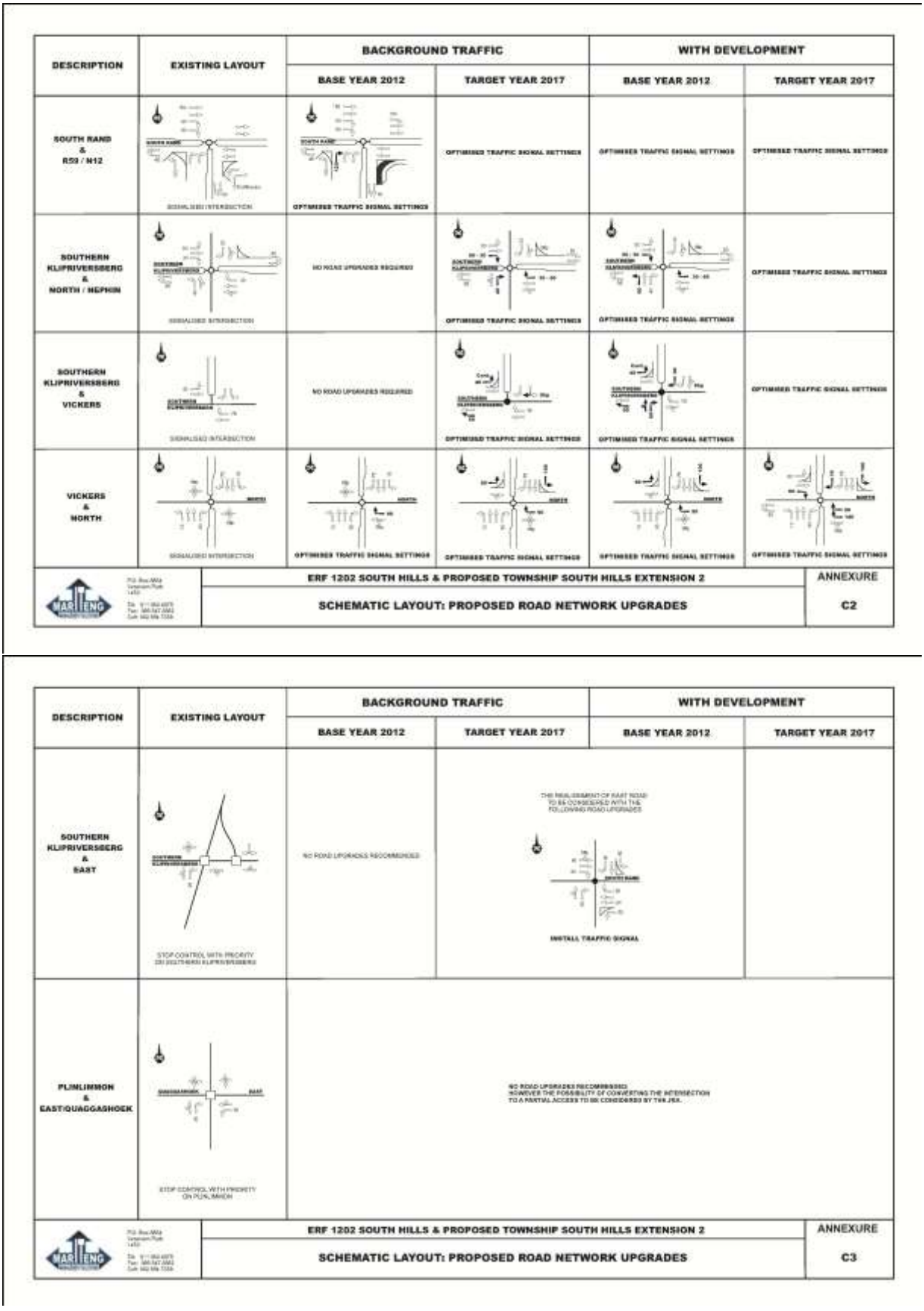


Figure 10: Intersections requiring upgrading as identified in the traffic Impact assessment

Implications
The township layout plan excludes the areas currently used and to be used for provincial roads in future and it is therefore confirmed that the road planning can be accommodated when the township has been developed.

10.3.2 Civil Services

Please refer to **Annexure G – Civil Engineering Services Outline Scheme Report** as completed *Bigen Africa*

10.3.2.1 Water

The proposed development falls within the previously developed South Hills (Moffat Park) (Moffat Park) district and will be provided from two Water Supply Districts. The bulk of the development will be supplied from the South Hills (Moffat Park) (Moffat Park) Water Supply District and only the north western portion (west of the stream) will be supplied from the Abattoir & Market Water Supply District.

The South Hills (Moffat Park) (Moffat Park) Water Supply District is supplied by the South Hills (Moffat Park) (Moffat Park) Tower situated in the south east corner of the proposed development. The Tower is supplied by the Rand Water's Meyer's Hill Reservoir by means of a pumpstation that needs to be upgraded from its existing capacity of 410 m3/hr to the peak discharge required of 595 m3/hr, according to the ultimate peak design model as stated in the Water Master Plan. Under the existing operating conditions, the South Hills (Moffat Park) (Moffat Park) Tower has insufficient capacity due to the insufficient capacity of the South Hills (Moffat Park) (Moffat Park) Pumpstation. The Abattoir & Market Water Sub-District will feed the north western portion of the development and no upgrades required are expected.

All bulk water services within the area have already been constructed. The development will connect at 6 locations to the existing water network. According to the master plan, the only upgrade required is to the pumpstation and a 160mm dia pipe for 254m in South Rand Road. The impact of the proposed development, the existing infrastructure and proposed upgrades needs to be confirmed by Johannesburg Water.

The design of the bulk, link and internal reticulation required for the development will accommodate the ultimate demands anticipated. The total average annual daily demand (AADD) of the South Hills (Moffat Park) (Moffat Park) Extension 2 development project amounts to 2106 kℓ/day for the South Hills (Moffat Park) (Moffat Park) Water Supply District and 1403 kℓ/day for the Abattoir & Market District. The peak hour demand totals 297.5 ℓ/s and 64.95 ℓ/s respectively. The average daily water requirements have been estimated on a daily peak demand of 14Ml/day

Implications
The internal network of the development will connect to the existing infrastructure at various positions. All water infrastructure, with the exception of the on-site services, will be laid in the road reserves or in municipal erven earmarked for this purpose. No added environmental impact is anticipated.

10.3.2.2 Sewer

The proposed development falls in the South Eastern Drainage Basin and drains by means of the South East Upper Outfall through the Bushkoppies Waste Water Treatment Works (WWTW) on its way to the Olifantsvlei WWTW. A diversion structure at the Bushkoppies WWTW diverts a proportion of the flow to either works. The treatment capacity of the Bushkoppies WWTW was 200 Ml/day and the capacity of the Olifantsvlei WWTW 180Ml/day.

It was confirmed by Johannesburg Water that the treatment works; the outfall and collector mains have adequate capacity to meet the ultimate flow scenario of the development. The eastern development will connect at two locations to the existing network of South Hills (Moffat Park) (Moffat Park), but 80% of the effluent will drain to the northern point at a low point next to the Klipriviersberg Road. The western portion will all drain to a proposed link line which will also drains to the same location as 80% of the eastern portion.

Both portions will connect to the existing link sewer line which drains in a northern direction towards the main collector and South East Upper Outfall sewer. The South Hills (Moffat Park) (Moffat Park) development will generate a peak flow of approximately 8.7 Mℓ/day once fully developed. Where available, Jo'burg Water standard details will be utilised. Where specific details are not available, these details will be prepared and submitted to Jo'burg Water for approval. Jo'burg Water's "Service Level 3" will be installed in the development.

Implications

Sewer reticulation and treatment can be supplied to the facility by connecting into the existing facility. No added environmental impact is anticipated.

10.3.2.3 Storm water

Currently storm water on the proposed site drains by means of the perennial stream bisecting the area from south to north. The drainage pattern is divided into two distinct zones. The bulk roads serve as the main stormwater cut-offs. Run-off zones are therefore small and minimize the concentration of stormwater run-off within the development. The determination of peak flows of the various drainage zones were calculated by using the Rational Method.

The minor and major systems will be designed to accommodate a 1:2 and 1:25 year design flood respectively. Roads will form an integral component of both the major and minor system. The kerb inlets will be designed to accommodate the 1:5 year flood. The class 4 roads have further been designed to accommodate the major floods in which case the roadway will be flooded, but the depth of flow will not exceed 150mm at the crown of the road. Class 5 roads can be flooded up to 80% of the road width during minor floods and the full road reserve can be flooded during major floods.

It is a requirement of JRA that provision is made for storm water attenuation to reduce the increased storm water run-off resulting from the development to pre-development volumes through the incorporation of storm water attenuation ponds in the storm water system. Attenuation was calculated to ensure that outflows do not exceed the undeveloped calculated floods.

Due to the topography, gradients, general drainage and existing structures on the proposed site, it would be favourable to utilise the existing dam in the flood area as well as the provision of four new dams located at various positions for attenuation purposes. The capacity of the existing dam will be increased as a flood prevention measure. The western and eastern areas of the development require a volume of approximately 16 000m³ and 12 000m³ respectively to be attenuated in 2 to 4 dams. There are also various storm water management systems installed in the flood area of the proposed site.

Stormwater will be collected and transported by means of an underground pipe system and discharged in the attenuation dams or the open field. The stormwater is mostly removed from the site in the roads. Open channels or energy dissipation structures will be constructed where stormwater pipes daylight next to the development or in the floodline area. The proposed stormwater system for the South Hills (Moffat Park) Extension 2 development is divided into infrastructure required to drain the minor stormwater flood (1:5 year recurrence period) and the major stormwater flood (1:25 year recurrence period). The minor stormwater system consists primarily of lateral kerb inlets, junction boxes, field inlets, overflow channels and pipe culverts (pre-cast concrete spigot and socket pipes with rubber rings).

Important design criteria include:

- Design Flood Determination Method = Rational Model
- Average Annual Precipitation = 740mm
- Design Flood recurrence Interval = 5 years and 25 years

Implications

Storm water can be accommodated in storm water attenuation structures. No added environmental impact is anticipated. A storm water management plan will be submitted to the CoJ and GDARD.

10.3.3 Electrical Supply

Please refer to **Annexure H – Electrical Services Report** as completed by *LEBOHANG PROJECT MANAGEMENT (PTY) LTD*

A total capacity of 21 to 26 MVA is required for the South Hills (Moffat Park) development. This power will be delivered to the development from City Power's existing Moffat Substation by means of 3.6km 11kV cables. Six (6) x 11kV bays will be used to at Moffat substation to supply the new development.

Moffat substation is an 88/11kV station fed from Prospect substation that is one of City Power's Eskom in-feed substations. Moffat is fed from prospect by means of 4 x 88kV cables. There are several 88kV bays available for the installation of additional 88/11kV transformers. Spare 88kV cables from Prospect substation with its associated 88kV outdoor terminations at Moffat Substation are already installed. These cables will have to be tested to confirm availability. There is no space available in the substation's 11kV switchgear room for additional switchgear. Transformer nr 2's 88kV cables are faulty, and are currently being fed from an adjacent spare cable bay cable by means of an overhead link.

Additional capacity can be created by installing an 45 MVA 88/11kV transformer in one of the spare

88kV bays. The transformer will be fed from Prospect's 88kV GIS station by means of 88kV cables. The existing substation building must be extended to accommodate the additional 11kV switchgear.

Implications
Electricity can be supplied to the facility by connecting into the existing facility. Additional cables and lines will run along the existing roads and servitudes. No environmental impact is anticipated.

11.0 PUBLIC PARTICIPATION

Please refer to **Annexure I for the Public Participation Report.**
The Public Participation Process is being conducted as an essential component of the Environmental Impact Assessment Process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2006 (Version 1).

11.1 NOTIFICATION OF INTERESTED AND AFFECTED PARTIES

Interested and Affected Parties were notified of the public participation process for the proposed development in the following ways:

- A newspaper advertisement was placed in the Die Beeld Newspaper on 12 March 2011.
- Detailed site notices were prepared in accordance with the requirements of the Regulations and were erected at the main entrance to the property, as well as other visible points, on 11 March 2011.
- A Background Information Document (BID) was posted, faxed, emailed or hand delivered to adjacent landowners. Written acknowledgement has been gathered from each of these landowners. The BID document provides information concerning the proposed development. Interested and affected parties were invited to submit written comments concerning the proposed development and become part of the environmental process
- The Ward Councillor for the area (Rosettenville/South Hills (Moffat Park) (Moffat Park)), Beverley Turk was informed regarding the proposed development via e-mail notification
- Local authority officials were contacted by the relevant consultants

11.2 PUBLIC MEETING

Once the awareness raising initiative of the proposed development was achieved, a public meeting was arranged for the 05th April 2011 at NGK (Dutch Reformed Church) Klipriviersberg, South Hills (Moffat Park) (Moffat Park) Johannesburg.

Another Public Information meeting was conducted on the 28th of March 2012 at the Southern Suburbs Sports and Recreation Centre, Rossetenville. A detailed presentation was compiled to be made available during the public meeting. There was a large attendance and it must be noted that the Public did not allow the presenters to complete their presentation due to the fact that they were extremely disruptive and aggressive.

The purpose of the meeting was to:

- Provide an opportunity for interested and affected parties (I&AP's) to obtain clear and accurate information about the proposed activity

- Provide I&AP's with an opportunity to indicate their viewpoints, issues and concerns regarding the planned activity
- Discuss the way forward

The presentation that was prepared for the meeting is included under the Public Participation Report in **Annexure I**.

11.3 ISSUES AND CONCERNS

Written correspondence received from I&APs by LEAP has been collected and a list of all issues and concerns compiled. These are referred to the appropriate specialists for addressing. A list of issues and concerns was drawn up from the following sources:

- Written correspondence received from I&Aps
- Issues identified by specialist studies
- Comments from Ward Councillor
- Comments from municipal officers
- Field observations

The Environmental Impact Assessment aims to address these issues & concerns from the public, and those identified during all the other methods of impact identification. All issues and concerns received throughout the entire environmental assessment process will be addressed in the Final Environmental Impact Assessment. Issues and concerns are addressed in this report.

11.4 PUBLIC INSIGHT

The Scoping Report was made available for public insight from 19 May 2011 until 19 June 2011 in hard copy at the South Hills (Moffat Park) (Moffat Park) Library The expected impacts, as issued by the I&APs are included in the issues and response register as attached to this report, also **Table 10** below. This Draft Environmental Impact Assessment (EIA) Report will also made available for public review for a period of 30 days from end of Februray to the end of March Comments received on the Draft EIA have been included within the Comments and Response Report (Appendix 6) of the Public Participation Report (**Annexure I**)

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11.5 ISSUES AND RESPONSE REGISTER

Table 8: Comments and response register

No	NAME	DATE	COMMENT	RESPONSE
1.	Glenda Ayton	07/04/2011	2800 Dwelling unites will have a serious & negative impact on the environment & also residents such as electricity, water & sanitation.	The exact number of dwelling units will only be determined after the layout has been finalised. The layout depends on may aspect such as the engineering services, the traffic, the requirements from the Housing Dept at the City Council, etc
2.	Julio Carrancho	12/04/2011	It looks to me a BAD idea. Much better would be to develop the Park as a Nature Reserve. Besides, it appears that development is interdicted (or would be illegal) until the year 2025, when the area is released from the 100 year agreement (with Mr Moffat who donated it to Johannesburg City Council) to keep it in its natural habitat – as far as I know. I vote for a NATURE RESERVE, instead, since the whole area of southern suburbs needs more green spaces. I deeply lament that squatters, vandalism and illegal dumping, plus robbery & crime (I was a victim of it myself last year at gun point!) is a permanent feature.	The area had been neglected and the City Council simply does not have the money to maintain derelict open pieces of land. The legal issues regarding the conditions under which the land was placed in the custodianship of the City will be resolved with the legal council of the city. Large areas of the site will be retained as undeveloped where the natural conditions can be maintained and the development will take responsibility for the open spaces and it will be

No	NAME	DATE	COMMENT	RESPONSE
				monitored for crime elements and vagrant.
3.	Alberto da Silva	13/04/2011	I've just read in the Comaro Chronicle of 13 Apr 2011, that Moffat Park is to be developed I've attached the article (moffat-park-development-2011-Apr.jpg). I've also done some Googling, and found that www.calgrom3.com will be doing the development. On their website, they show that: • R1,356 Billion tender was awarded on 3 Nov 2010 to Standard Bank & Calgro M3 • 4,217 units will be built • The area now occupied by Linhill FC will become "GAP" cluster / housing (see development-plan.pdf and "South Hills (Moffat Park) (Moffat Park) Locality.pdf") • 3 phases planned • Expected to start early 2012 GAP = Under R500,000, households which earn between R3 500 and R9 000 per month. As a Linhill Committee member and Linmeyer Resident, this is the first I've heard of this development.	The information on the website is probably not the most recent, but can be considered as a concept. The application is only now being prepared and the final development proposals are still under investigation. Once the development is advertised, more clarity will be gleamed form the proposals, which even then is still not final. The final proposals will only be available after all negotiations and participation has been completed.
			Q1. What will happen to Linhill FC - will it become GAP housing?	The final proposals have not been developed. Public participation will influence the proposals as they are being developed.

No	NAME	DATE	COMMENT	RESPONSE
			Q2. AFAIK, Moffat Park title deeds mandate that the land belongs to the community andcan only be used for recreational area/park. Which explains why the land was never before developed So how come it's now being developed contrary to the title deeds?	The legal issues regarding the conditions under which the land was placed in the custodianship of the City will be resolved with the legal council of the city.
4.	Alberto da Silva	19/04/2011	I notice from the presentation and minutes: "5 WC asked what about the schools, soccer field and sport facilities which are currently in dire straits? GT mentioned that it will be incorporated as far as possible Developers will build schools and the existing sport fields will be integrated into the development..." Which will impact Linhill FC. Can you keep Linhill FC "in the loop", as we feel that this development, if done correctly and with consultation, can assist in developing the community and Linhill FC.	The layout plans are still under development. Information will be made available to the adjacent land owners and the I&AP as it becomes available. Comments appreciated.
5.	Jose de Sa Chairman of Linhill Celtic AFC)	14/04/2011	According to the plans I have seen, our football club will disappear forever. The club was founded in 1973. As I am aware, the club has a long standing 99 year lease. Please let me know if the developers have taken the club into consideration.	The football clubs will not disappear. They may be moved, but both clubs will be accommodated in the proposals. The clubs will be upgraded and the facilities improved. In time, the developers will make contact with the owners to discuss the options.

No	NAME	DATE	COMMENT	RESPONSE
6.	Heleen Swart	14/04/2011	Along time ago now many southern suburbs residents marched to Braamfontein protesting about the hundreds of squatters who had moved into Moffat Park. We were very pleased when the squatters were removed - and we were told at the time that the reason our protest had succeeded was that the donator (Moffat) of that green space had stated that it was NEVER to be developed, no buildings/structures or any sort - but that it was to remain a parkland. I would like to know what has changed (seeing the article that the Southern courier ran in its April 12 2011 edition) that consideration is now being given to housing developments?	See previous comments: The legal issues regarding the conditions under which the land was placed in the custodianship of the City will be resolved with the legal council of the city.
7.	Jenny du Preez	16/04/2011	Congratulations on the Plans to develop the area! The proposed site for a school is of specific interest to me. In 2005 I retired from the corporate world and established a trust and purchased the old Rosettenville Vet's premises where Dr. Azzie once practiced his craft. The premises were occupied by vagrants, druggies and alcohol addicts at the time of purchase. I simply renovated them off the property by cleaning the place up at a cost of R1,7 million. The Magick Mushroom Montessori Pre-School and Creche was established on the property in 2007 and we trained our own staff. We have survived the recession of 2009 and extremely difficult times in the area. The school is currently full with a waiting list while we raise the money to build an extra classroom for the Grade R's. We have a unique and successful combination of Montessori and Traditional teaching methods. Since 2010, there has been a marked change in the class of person who applies to bring their toddlers to our school and this change has contributed to our success. The properties in the surrounding areas are being purchased by mainly African (not only South African), Indian and mixed-culture business people who want their children to speak English and to achieve at school. They also have the disposable income and are happy to pay the fees. 25% of the children attending the pre-school are from financially	Thank you for the comment. These will be provided to the developers and they will contact you in time to discuss the various options.

No	NAME	DATE	COMMENT	RESPONSE
			challenged backgrounds and are sponsored by the school. We are currently establishing a bursary fund to assist them with their future education, however the local primary schools are full to overflowing! The development of Moffat Park right on our doorstep is of particular interest to me because, just prior to the recession, I did a complete project plan to build an education centre on 22 ha of land near the Kibler Park Fire station. The initial budget at that time was R50 million for an eco-friendly complex from crèche phase right through to post Matric, and investors were waiting for consent from the council. The Town Planner, Ozzie Gonsalves, approached the Town Planning Department in Braamfontein for consent to re-zone the land for education purposes. This took 3 months. No deal to purchase the land could be concluded without this approval. When the council indicated that they would be in favour of re-zoning the land, the owners changed their minds about selling – they would only consider a lease. Unfortunately I was not prepared to ask investors to erect a R50 million education centre on leased land. The recession really took hold shortly after this, so my plans have been shelved, but not buried. The development of Moffat Park is wonderful news and I would really like to revive my project and adapt it to be part of putting a school in the area. I have had many requests from parents to start a primary school that continues our methods of teaching. I am totally willing to get my committees started up again. The area has huge potential and there is a unique culture developing. How do I get more information? If you are near South Rand Hospital at any time please come over to The Magick Mushroom and see the school and the children.	

No	NAME	DATE	COMMENT	RESPONSE
8.	Elsa Goddard	17/04/2011	I have read recently about the "development" planned for Moffat Park - how is this possible to achieve? Approximately 16 yrs ago Moffat Park was "taken over" by squatters..... and if you care to look up the details of this piece of history you will find that this matter went to Court to obtain an Eviction Order..... This order was granted by the Courts then based on THE FACT THAT NO STRUCTURES ARE TO BE ALLOWED/ERECTED on this piece of Land.... This was the Terms of the original Owner of this piece of Land, who left this ground to be a BIRD SANCTUARY! and based on this Clause in his will this property was left for the use of local residents.....and this was the Clause that helped the City Council THEN .....TO CLEAR OUT THE SQUATTERS..... As a local resident of 18years in this neighbourhood please note that THE CITY COUNCIL/PARKS DEPARTMENT HAS NEVER SPENT ANY FUNDS ON THIS AREA AT ALL.... our children used to be able to take our dogs there for a walk ..... till the vagrants took root..... and the murders and bodies popped up all over this park.....why do we need another housing development on the last bit of GREEN LUNG IN OUR AREA..... why not CLEAN UP THE VAGRANTS AND CREATE A FACILITY THAT PEOPLE CAN GO AND ENJOY NATURE ..... OR IS THIS ANOTHER CASE OF GREED NOT NEED..... GO clean up other parts of delerict properties in the South..... Rosettenville Hotel is a Prime Example, the derelict block of Flats that have been left to rot in Prarie Street and in Lang Street..... CLEAN UP OUR ONCE CLEAN NEIGHBOURHOOD FROM BEING A SLUM THAT IT IS FAST BECOMING!! Who is going to MAKE THE ALMIGHTY BUCK OUT OF THIS ONE???	We appreciate the background of the land. As everyone is aware, it is becoming more and more difficult for the City to maintain the open spaces. The land will not be developed unless the legal issues have been considered and resolved. See previous comments: The legal issues regarding the conditions under which the land was placed in the custodianship of the City will be resolved with the legal council of the city. Also, a large section of the land will remain undeveloped, and can be used for open space. The development will be responsible for the upgrading of the areas which will make is safe and attractive once more. .

No	NAME	DATE	COMMENT	RESPONSE
			Thank you ..... please take note and do a bit of research on this information and you will find out the original history of this Park	
9.	John Webster	17/04/2011	I have had a good look at the Calgro M3 website and the following is evident:- (1) Construction is expected to begin in Jan 2012---- from the tone of the website this seems like a done deal. I appreciate the EIA is still required but with SBSA and Calgro behind this I see little chance of failure. Are all the meetings nothing more than trying to maintain appearance that the community is being consulted. (2) The website quotes over 4000 units to be constructed !!!!. The article alludes to the fact that 2800 is already too much. They even quote the breakdown of units and RDP/BNG terminology is openly used. This is in complete contrast to what you are saying in the article.	The development is advertised at the moment. The information on the web site is only proposals. The plans and the town planning application will be advertised and at that time more clarity on the exact development proposals will be provided. Until then nothing is certain.
10.	Lilian Manikus	19/04/2011	I would like to enquire about the housing in this area. I am a 28 year old female, married for 4 years and have 2 children. I have lived in the South for as long as I can remember and would like to continue living here. My husband and I cannot really afford a house of R700 – R800 000 at the moment, but would really love to have a place of our own. Can you please let me know, where can I apply for the purchasing of a property in Moffat Park?	Thank you for your request. The requests are fed through to the developers who keep the list of enquiries and they will contact the people in person at the time that the development is being marketed. If nothing comes of the development – they will be notified.
11.	Jenny Du Preez	01/05/2011	I have children from all sides of Moffat Park and obviously from all backgrounds, so I have been sounding out the parents about how they feel about tis development. The main concern is that the development will become a slum like the new township opposite Waterstone College has deteriorated and caused concern for any other new housing development in the South. South Hills (Moffat Park) has never been an upmarket area, and when those residents are concerned about things getting even worse, then there is a problem.	Thanx for the comments. The development will certainly not reduce the standard of living in the area. Affordable units will be incorporated with more affluent residences to bring the whole development to an

No	NAME	DATE	COMMENT	RESPONSE
			As you know my school property was full of homeless vagrants when we started 5 years ago. We have maintained our standards and the area has come up to meet us. Now, after 5 years, we are full with a waiting list of paying customers. My suggestion is that the development starts with the school and attracts home buyers who want to live near a good school. That way the development attracts young working families striving for the best for their children.	acceptable high standard. Although schools are planned on the land, it is not clear if the Dept of Education will take up the opportunity to provide a public school or schools in the area.
12.	Eric A Benvenuti	24/05/2011	I would particularly like to record my concern about the manner in which the EIA activity and the Public Meeting was advertised, and the lack of information made available by the EIA on the impact that the Proposed Development may have on the Ecology, including the Flaura and Fauna, that may exist in the area. I would assume that your EIA study would be detailed in its account on the impact that the proposed development would have on the Ecology of the area. Would it be possible to supply a copy of your EIA report with the blank registration form?	The Draft EIA will provide detail information on the ecological significance of the area.
13.	Lee Michelle	27/05/2011	Reason is the traffic congestion that this would cause, my kids attend the St Martins school.	Road upgrades will be accommodated as indicated in the traffic Report.
14.	Michael Veiga	16/06/2011	I'm extremely interested in feedback regarding the proposed developments, especially relating to: • How it is planned to sustain an additional 4000+ people in such a small space, infrastructure wise, relating to roads, water, electricity, sewerage, etc. As it is, some of these are already overburdened. • How this new development, as it is rumoured to be dubbed "*Cosmo City 2*", will not impact on the value of the higher end properties in suburbs such as The Hill and Linmeyer.	Infrastructure will be accommodated according to the requirements of the CoJ. The lower income properties will be located away from the existing high end residential erven with a buffer of

No	NAME	DATE	COMMENT	RESPONSE
			• Seeing as you've only advertised in the Beeld, which isn't exactly specific to the South or read by everyone in the South - how exactly can you guarantee that everyone that is going to be affected will know about the proposed development? I haven't seen any advertisement in any of the Local newspapers, et al "The Southern Courier" or "The Comaro Chronicle" - which to my knowledge are the papers most read by those staying in the affected areas?	single family homes located along the edges of the proposed development. Advertisements were placed in the Star but will the local news letters are covering the progress of the development.
15.	JB Welsch Headmaster ST Martins	30/06/2011	The school is completely against any development of the area known as Moffat Park as this has been public open space that was entrusted to the City of Johannesburg for the purposes of recreation and as "green lung". It is clear that the City of Johannesburg has been patently unable and/or unwilling to maintain the area known as Moffat Park in a condition suitable for its intended use; this is lamentable but hardly a good reason to allow the development of the land with a huge number of high density dwelling units. The City of Johannesburg should ensure that Moffat Park is suitable maintained so that it can be used and enjoyed as originally intended. Interestingly, in the mid-1990's, along with other areas in the City of Johannesburg, Moffat Park was invaded by a significant number of so-called "squatters" seeking land upon which they could build rudimentary dwellings. In due course, after intensive lobbying from the surrounding neighbourhoods, the Moffat Park inhabitants were removed on the basis that the land has been designated as public open space, as per wishes of the late Mr Moffat who bequeathed the land to the City of Johannesburg. For many years (none recently) the City maintained Moffat Park so that it could be enjoyed by people wishing to walk outdoors and take advantage of the "green lung".	The legal standing of the Park will be clarified with the City Legal office and NO development will occur prior to all legal issues being adequately addressed Maintain large open areas are simply too costly for the city to maintain it in the manner that is required by the residents. Large areas of the Moffat Park will be retained as open space and active and passive recreational areas will be

No	NAME	DATE	COMMENT	RESPONSE
			ST Martin's Predatory School exists on the west side of East Road and faces on to the area of Moffat Park. Approximately three hundred and fifty vehicles arrive at the school each morning between 7:00 and 8:00 as children are brought to the school by their parents, and the same number of vehicles arrive in the afternoons, between 13:30 and 16:00, to collect the children after their respective co-curricular activities finish. Any additional traffic along East Road that arises out of the proposed development of some two thousand eight hundred dwellings will severely aggravate the traffic congestion that already exists. In the last few years East Road has been increasingly used by motorists travelling from southern Johannesburg into the areas adjacent to the municipal market and the M2 Motorway. The volume of traffic is likely to increase as motorists attempt to circumvent the toll gantries on the highways. Then there is the natural growth in vehicular traffic. Finally, one would have to factor in the volume of traffic that the new community on Moffat Park would be likely to generate and/or demand. St Martin's Preparatory School has a number of classrooms that are very close to East Road. It would be very difficult for teachers to conduct classes with the atmospheric pollution that arose from increased traffic volumes, and then there is the smoke from fires that typify so many low income areas in South Africa. In addition, there would be the noise that is associated with a high density neighbourhood, not to mention the traffic noise that would arise. St Martin's Preparatory School's on-campus parking facilities are severely limited and parents often have no alternative other than to park on road shoulder on the east side of East Road in the vicinity of the school's main entrance. Any developments in Moffat Park would impinge heavily on this legitimate use of the current public open space. There is also the security issue of having significant number of vehicles parked outside the school	developed. Also the development will reach an agreement with the CoJ to develop and maintain the park. Traffic and road improvements will be completed according to the traffic impact report as it may be accepted by the CoJ. The lower income properties will be located away from the schools and the existing high end residential erven with a buffer of single family homes located along the edges of the proposed development. There are many measures that the school can implement to safeguard the children and parents. It would also be expected the security will improve

No	NAME	DATE	COMMENT	RESPONSE
			for evening functions (plays, parent-teacher consultations, etc); parents and children would not feel safe were they having to cross a busy road (East Road), leave their vehicles unattended there for the duration of the school function, and to have to return to the parked car that is adjacent to a high density housing area. As an independent, fee-paying school St Martin's serves suburban areas that are typically upper income in nature, with house and property densities similar to those of The Hill, Linmeyer, Glen Vista, Bassonia, etc. The establishment of the proposed high density and low income residential area in Moffat Park will adversely affect the perceptions about the school, with a probable drop off in business. The number of students and teachers would be likely to fall, especially where parents having to deal with adverse traffic conditions on East Road that would now be serving a very large community in Moffat Park. The City of Johannesburg will know from its registry of building developments that the school recently spent more than three million rand on the rebuilding of its Sports Pavilion, and the school intends to continue marketing itself to communities that can afford its fees which are not subsidised in any way by the state. The development of a subsidised-, and/or low- to middle-income dwellings in Moffat Park will fly in the face of the school and its enrolment strategy. It must be borne in mind that the school has a well developed financial aid programme that assists families from previously disadvantaged communities, however, the school relies on the existence of a very strong fee-paying base as the foundation for the operation of a successful financial aid programme. Any fall of in enrolment from families in the existing upper income areas would have a disastrous effect on the continued operation of the school. It appears that the work on formulating the current proposal commenced in 2008.	due to the development and will remove the vagrants and loitering squatters from the area. Noted, however, the development of South Hills will in no manner reduce the quality or living conditions of the persons in the area. Although the school have existed in the area for some time, it does not hold a monopoly to the residents or development rights of the region. Existing schools will be filled prior to new schools built and those residents that would like to send their children to St Martins, will still be free to do so.

No	NAME	DATE	COMMENT	RESPONSE
			Seemingly, much money has been spent by the developers and (who knows else) on assessing the area known as Moffat Park and then formulating the details of the proposal that has recently appeared in the public domain. Why was this proposal not made public in a proper and transparent manner in 2008, through the media, so that all "Interested and Affected Parties" could have been alerted to the proposal at a much earlier stage? It would appear that the three-year silence on this matter has given the cynics among us reason to believe that there was a measure of stealth being applied, perhaps in the hope that the proposal advances so far as to become unstoppable. (The school has to be persuaded that this view is cynical rather than something resembling the actual state of affairs.) Of course, there is another dimension to the development of open land in an otherwise built-up part of a large city. Where the proposed residential development of the area known as Moffat Park to reflect the income levels and expectations of the surrounding suburbs such as The Hill and Linmeyer, then a different view might be taken, especially if significant proportions of the land were to be demoted to well-run and properly maintained parks. One only has to look at some of the so-called "Eco-Estates" to see how efficiently residential land-use and recreation can be combined. Better quality housing, near the traffic hubs that Moffat Park's location offers, would be likely to attract upper income residents and, of course, there better-quality-homes would provide the City of Johannesburg with a significant income from rates, electricity and water use revenues, as well as enhancing the perceived and rateable values of the existing contiguous suburbs, such as South Hills (Moffat Park) (Moffat Park). It is understood that the proposal, in its current guise, has a proportion of land set aside for non-development, however, a community comprising two thousand eight hundred dwellings (say ten thousand people), crowded into a space as	The tender process was open and transparent. The information on which the development will be based is also being provided in both the EIA and the town planning applications. Large open spaces will be retained as part of the development and development and maintenance agreements will be reached with the city for the developers to aid the city in its responsibilities.

No	NAME	DATE	COMMENT	RESPONSE
			small as Moffat Park, will put tremendous pleasure on the recreational land, even that set aside in the current proposal. Unfortunately, the City of Johannesburg's record on maintaining public open land, designated as parkland, has been abysmal, in virtually every part of the city. Moffat Park, in its current state, confirms this assertion all too well. St Martin's School wishes to be kept appraised of all forthcoming meetings at which its voice can be heard on the matter of the Proposed South Hills (Moffat Mark) Development.	The draft EIA is the first report that is being provided after the scoping report. Comments on this draft EIA will be provided to the developers and will be incorporated into the final EIA prior to submission the GDARD.
16.	Andrew Barker & Richard Bennet	06/07/2011	**Our comments and questions regarding the presentation are as follows:** 1. Slide 4: Please provide details regarding the preliminary consultation process that was conducted between November 2009 and early December 2009. Who as approached and what comments were made and incorporated into the proposals? 2. Slide 12: We acknowledge that the surface right permits areas have been identified. IT should be noted that Inzo are in fact the owners of these rights. An agreement exists between Inzo and Central Gold SA regarding their use for future mining activities. 3. Slide 12: With regard to the restrictive title deed conditions that state that the land is to be used solely for the purpose of a public park, iProp, as the successors in title to City Deep Ltd, must be consulted prior to any amendment or removal of these conditions. The purpose and the intention of these title conditions to retain the area as a public park must be recognised. 4. Slide 13: As part of the geological report we would request that the geological history be	The persons that was approached mainly focused on the officials at the City, community groups, organisations and special interest groups. Noted IProp will be consulted and as indicated no development can be conducted on this land without the consent of the title deed holder.

No	NAME	DATE	COMMENT	RESPONSE
			examined. We understand that the Klipriviersberg range of hills is approximately 2.4 billion years old and that this site contains sedimentary rock formations and geological examples which are likely to be older and therefore require mitigating measures and protection. In addition they could offer an historical interest and eco-tourism opportunity. 5. Slide 18: The question of financial sustainability is of critical importance. Please provide details regarding the key stakeholders who were consulted and what comments were received in this regard. We wish to place on record our extreme concern that this project would appear to be focused on selling the property to developers without any consideration of using this valuable city asset as an opportunity to provide capital and operational funding to ensure self sustaining development and management of the open space. It is strongly recommended that that economic sustainability of the public open space should be the priority. Therefore the economic model should be completely reconsidered to ensure that funds generated through any disposal, should this project proceed, are used for the development and management of the open space. We would recommend that the possibility of initiating a biodiversity stewardship programme for this area of land should be carefully examined as a means of ensuring the establishment of a sustainable approach to the protection, promotion and enhancement of the natural assets and public open space area. 6. Slide 19: We notice a school which would also function as a community meeting place has been designed and is proposed for the development. We wish to be appraised of how the capital and operational funding for this project will be raised to ensure that this facility is developed and does not become a proposal which is never realised. 7. Slide 19: We would question the conclusion reached that the proposed project is supported by all the consulted stakeholders. In this regard we would request information as to who	Request noted. Although not a requirement for the approval of the development proposal. The financial agreement between the financiers, the city and the developer has not been finalised. Requests for benefits to the residents have been raised by several officials and parties. The financiers are well aware of the requirements for sustainable development and do not have any intention to default on their responsibility. This option will the investigated. Three schools are proposed for the development. These sites will be made available to the Dept of Education. However, apart from the schools site, the soccer club and other facilities will also be established. These will form part of the community

No	NAME	DATE	COMMENT	RESPONSE
			has been consulted as stakeholders to support this conclusion and the development of the various facilities that have been identified. Furthermore, as key stakeholders in this area we would certainly not support this project in its current form. 8. Slide 25: We note that the surface right permit areas have been excluded from the proposed development in view of their possible use for mining activities. However, we would wish to understand the logic of the exclusion for development as these areas may in fact be suitable for development but not without compensation or recognition of the existing rights which are held by Inzo as noted above. It should be noted as well that as this is a mine impacted area that there will be certain restrictions relating to the recognition of past, present and future mining and possible associated impacts which will be required to be included in the conditions of establishment and title deeds of any properties that are established in this area. 9. Slide 30: We note that an upgrade of the existing substation for the region will be required to provide electricity. It is strongly recommended that alternative energy options be incorporated into this development should it proceed. Furthermore, we wish to recommend that green development and building measures be implemented throughout the project area particularly in view of the land being identified and limited in terms of the title deed restrictions to being used as a public park only. 10. Slide 31: We notice a Sports Precinct has been designed and is proposed for the development. We wish to be appraised of how the capital and operational funding for this project will be raised to ensure that this facility is developed and does not become a prosposal which is never realised. 11. Slide 37: In view of the nature of the area we would suggest that some of the urban design concepts that have been used as illustrations regarding open space and landscaping are	development programme. A list of consulted stakeholders are included in the public participation report. It was indicated during the discussion with IProp that the land will in fact NOT be avaialable for development regardless of its developablility. Alternative energy and green building methods and materials will be utilised. It is guided by the SANS 240 and SANS 14000 as well as the National Building regulations. Provision of sport facilities is a requirements of the codes and is

No	NAME	DATE	COMMENT	RESPONSE
			not appropriate and are misleading. Again, as above, we wish to be appraised as to how the capital and operational funding for this aspect of the project will be raised. 12. Slide 41: In an earlier slide the registered owner is the City of Johannesburg Metropolitan Municipality. However in this slide the investors and landowners are noted as CalgroM3. We wish to be informed as to how this company has achieved the status as the property owner and what processes are being followed with regards to the disposal of this public property and City asset. **Comments regarding the minutes of the public meeting:** 1. Item A1: as noted above, we would request clarification regarding the measures taken for the publication and informing of all relevant parties about the project and the public meeting. We note from the Public Participation Report that only a single advert was placed in "Die Beeld" and no use made of local community newspapers published in the area. 2. Item C4 and C5: Our earlier comments and request regarding the sourcing of capital and operational funding for the facilities that are being proposed should be noted and addressed. 3. Item C6: We would suggest that the response to this issue as noted is unacceptable and should be more than just addressing access. There should be greater information and details provided regarding the various urban design concepts as we have noted above. 4. Item C7: As noted above, we would support the concerns raised by the Ward Councilor regarding the nature of this development and the funding proposal and model which needs to be carefully considered and reviewed. 5. Item C11: We would suggest that the response regarding the management of squatters by	required by the tender. Proceeds of the development have to finance these developments. The park area will be divided into the areas used for parks , and those that will remain natural for conservation purposes. The different types of open spaces will bee developed nad managed appropriately for its intended use and purpose. The proceeds of the development wil pay for these upgradings. One official advert was placed but the local newspaper is also notified of any activity regarding the process. See comment above. The urban design concept are described in the town planning

No	NAME	DATE	COMMENT	RESPONSE
			providing a fence and access control to the undeveloped area is unacceptable and a more sustainable approach regarding the management and operation of the open space is required. 6. Item C15: We would request greater clarity regarding the response as to how "the public transport, public roads bus system will be adapted to accommodate the new development". It should be noted that preliminary concepts and ideas are being formulated regarding a public and tourism transport system which would link various tourism, recreation and sporting nodes in the southern areas of Johannesburg. 7. Item C19: It would appear from the response that the nature of the development has already been fixed and determined without any alternatives being considered. We would suggest that greater consideration be given to alternative types of housing and accommodation and associated measures for management. 8. Item C20: A statement is made that the " area is the natural habitat and it will be contained in the conservation area". We would request greater clarification as to what is being proposed and considered. Again, our suggestion above regarding a biodiversity stewardship programme may be something that is worth considering. **Comment regarding the Public Participation Report** 1. We note the impressive number of parties identified in the I&AP register. However on closer inspection one questions the value of this list and its integrity in view of the lack of contact information and also the relevance of certain parties listed who would have no interest in this development due to their distance away from the site. In addition a number of entries are repeated. **Comments regarding the Draft Scoping Report & Plan of Study:** 1. We would request that a detailed viability study be prepared to assess the best use of the	memorandum. The open space will be managed according to an agreements between the city and the developer / finaciers. The traffic and transportation study provides the proposals for public transportation. A full range of housing types nad income groups were considered. It must be kept in mind that this is essentially a Dept. of Housing project and high income housing opportunities are not supported. The various types of accommodation is discussed in the town planning memorandum. For continuity, the I&AP that were consulted during the feasibility phase of the project is also included. Duplicates will be removed.

No	NAME	DATE	COMMENT	RESPONSE
			land for the community on a sustainable basis. We would suggest that it is of critical importance that, if the development proceeds, then the sale and use of the land should ensure the generation of ongoing income for the development and maintenance of the remaining open space.	These comments will be forwarded to the City for consideration.
			2. We would suggest that the scoping report also undertakes a detailed social and economic study especially with regard to the availability and capacity of existing and future economic and social infrastructure. Of particular importance is ensuring that the exisiting as well as the future communities have adequate access to essential facilities such as schools. In addition, suitable funding and budgeting measures need to be examined and established to secure the provision of any additional facilities that are required to serve the needs of the existing as well as future communities.	The social study will be undertaken and social facilities n the area will be identifies and assessed for capacity and availability.
			3. In view of the title deed restriction noted above we would strongly recommend that the focus of this project is not the development and disposal of land for housing. It should rather focus on the sustainable development and maintenance of the open space which may, for the generation of capital and operational revenue, include suitable income generating development which may not necessarily be only residential. In view of this we would request suitable project proposal alternatives be detailed and carefully examined in this regard. We wish to note that we reserve our rights regarding further contributions, comments and participation in this process for the environmental and town planning processes associated with this project.	These comments will be forwarded to the City for consideration. Noted Noted

No	NAME	DATE	COMMENT	RESPONSE
17.	Mr. Alberto Da Silva (o.b.o Linhill FC Committee, Linmeyer Awareness Group & Personal Capacity		With reference to the following points: 1. 3 Nov 2010 – R1,356 Billion tender was awarded to Standard Bank & Calgro M3 (see Calgro web site) 2. Nov 2011 – "South Hills Extension 2 – Memorandum in support of the application for Township Establishment".pdf Page 23: "The combined total units that is envisioned to be developed is 5,161 residential units" We would like to formally object to the development of **South Hills Extension 2/Moffat Park** on the following grounds: a) Lack of consultation (see point [1] above – re 3 Nov 2010) with • Residents of suburbs surrounding Moffat Park • Linhill FC which resides on the property b) The proposed 5,161 residential units is 6.8x more units than Linmeyer – which has a similar usable area (the center portion of Moffat park is excluded) – the infrastructure in the area does not have the capacity to deal with this many units c) Insufficient transportation to cater for the proposed 5,161 residential units. d) Insufficient educational facilities to support the families of the proposed 5,161residential units. The surrounding schools are already at maximum capacity, the information provided lacks clarity as to the sizse of the educational facilities to be provided. Without the necessary educational facilities the project will result in social issues in the area. e) According to the plans, educational facilities are only for phase 2 – these need to be built first. f) Moffat Park is a "green lung" in the South, which would be lost to the community by this development. The land is currently zoned as "Public Open Space". g) Negative effect on values of properties of surrounding suburbs due the high density and low cost nature of the development.	It is prudent to have a proposal on the table to discuss prior to consultation of public engagement. The town planning application had to be filed under the requirements of the tender process. It is not to say that the plan submitted is the final plan that may be considered for development. It is critical to understand that the plan will only be finalised after public participation and review by the public. The traffic and transportation study discuss the raod upgrades and public transport facilities required for the accommodation. Land for schools will be provided according to the code requirements of the CoJ. Public consultation was conducted as

No	NAME	DATE	COMMENT	RESPONSE
			h) The 5,161 units / families will cause significant increase in traffic and overload the existing road infrastructure. i) The tender process (see Point [1] above) be subject to a forensic audit. Why was the tender awarded 5 months before public consultation? The tender did not follow due process and due diligence as it was awarded before public consultation. Further, if there is to be a development, we request that: a) Consultation takes place with the residents of the surrounding areas so we can contribute and express recommendations and concerns. b) Reduction in the number of residential unites from 5,161 to no more that 1,000 –i.e. same density as The Hill and Linmeyer. c) No multilevel (4) story residential blocks, only freehold affordable housing should be permitted. d) All residential units to be "full title" and owned by residents – no "council/Metro" rental housing – this will prevent a slum developing. e) Additional educational facilities be provided – as the surrounding schools are already at capacity. f) Increased public transportation – The proposed BRT is inadequate – Gautrain to the South would be recommended. g) Education facilities be in constructed phase 1 as schools in the area are ate 110% capacity. We reserve the right to raise other matters and / or objections at a future date. LAG has arranged a petition objecting to the development. The petition will be provided to you.	part of the feasibility study. The tender process followed the MFA in full. Written comments are welcomed and will be forwarded to the developers and the financiers. This is a housing project for the City of Joburg and low density high end housing is not appropriate according to their requirements. The variety of housing types meet the requirements of the city. The layout provides for a buffer of single family units on the edges of the development with the 3 and 4 storrey units provided towards the centre of the development. Noted

No	NAME	DATE	COMMENT	RESPONSE
18.	Lee-Anne Pereira	06/03/2012	Heard from someone that this development is still going ahead and now for more townhouses than initially planned. Do you have an update on the situation ?	
19.	Robert Thomson	09/03/2012	My concerns are the following: 1. The value of my property is going to drop. The property I own is the only investment I have, and all my life's hard earned savings have been put into it. 2. The traffic on the roads in the morning is already at a peak. For me to get into Plinlimon road in the mornings is already difficult. Throwing another 10000 cars into the morning traffic without upgrading the road infrastructure, will create a disaster. 3. The sewerage, water and electricity infrastructure is already fully loaded. 4. The pollution in winter from open fires caused by people who can't afford the electricity bill. 5. Where are the thousands of children going to go to school? A school is only planned in the 2nd phase. I hope it is a big school!	
20	Robert Thomson		**Letter of objection: Removal of restrictive condition and simultaneous rezoning of Erf 1202 South Hills from "Public Open Space" to "Residential 1, 2, 3, Educational, Institutional, Public Road"** With reference to: • Notice placed on Nephin road • Documents relating to the development inspected at the 8th floor Metro Centre • Deeds of Transfer (Title Deeds) • "Erf 1202 South Hills" is commonly known as "Moffat Park" We would like to formally object to the Removal of Restrictive condition and simultaneous	

No	NAME	DATE	COMMENT	RESPONSE
			rezoning of Erf 1202 South Hills from **"Public Open Space" to "Residential 1, 2, 3 Educational, Institutional, Public Road**" on the following grounds: a. This is against the wishes of the forefathers as expressed in the Title Deeds – "The land is to be used solely for the purposes of a public park" – see Page 3 section (a) and Page 6 section (f) of the "Deeds of Transfer" b. Loss of park that serves the community for recreation. Moffat park is currently used for recreational activities such as walking, hiking, mountain biking, camping, quad biking, etc, by residents of the surrounding suburbs. This development would result in reduction/loss of this facility that serves the community. Moffat Park is a good quality, accessible green space and provides many health and well-being benefits. The most significant of these can be grouped into three broad categories: (1) Increased life expectancy and reduced health inequality; (2) improvements in levels of physical activity and heath; (3) promotion of psychological health and mental well being. Associations have been found between access to green space and levels of physical activity, which in turn improves individuals' health. Green spaces also have beneficial impact on mental well being and cognitive function. The re-zoning and development seeks to reduce on of the last remaining natural public open spaces in the south of Johannesburg. c. Loss of open, natural, environmentally friendly green space Moffat Park has an important role in supporting the adaptation of people who live in the surrounding suburbs and city to a changing climate. It provides shade, cooling and wind interception and an insulation role in the winter. It also mitigates the risks from climate change-induced reductions in air and water quality; and it provides a buffer for habitats and species, whilst contributing to attainment of sustainable urban drainage and	

No	NAME	DATE	COMMENT	RESPONSE
			controlling upstream water flows to reduce flood risk. Effectively harnessed, Moffat Park can also be used to promote an appreciation of the effects of climate change and lifestyle changes needed to reduce further effects and/or to adapt to them. d. Loss of wildlife habitats Ecological benefits of urban green infrastructure are largely related to the provision of habitat. Species from the very common to the very rare make use of all types of green areas like Moffat Park. e. Moffat Park has the potential for enhancing the social cohesion; it can bring people together, and can create community cohesion as different social groups engage with each other whilst making use of the park for recreation. Based on the above we feel that the re-zoning should be declined.	
21.	Robert Thomson	09/09/2012	**Letter of objection: Application for establishment of a township – South Hills Extension 2** With reference to: • Notice placed in South Rand Road • Documents relating to the development inspected at the 8th floor Metro Centre • Deeds of Transfer (Title Deeds) • "South Hills Extention 2" is commonly known as "Moffat Park". • 3 Nov 2010 – R1,356 Billion tender was awarded to Standard Bank & Calgro M3 (see Calgo M3 website) • Nov 2011 – "South Hills Extension 2 – Memorandum in support of the application for Township Establishment" . pdf page 23: "The combined total units that is envisioned is to be developed is 5,161 residential units"	

No	NAME	DATE	COMMENT	RESPONSE
			We would like to formally object to the **Application for establishment of township – South Hills Extension 2** on the following grounds: a. The development of the township is on public park land and it is against the wishes of the forefathers as expressed in the Title Deeds – "The land is to be used solely for the purposes of a public park" – see Page 3 section (a) and Page 6 section (f) of the "Deeds of Transfer" b. Loss of park that serves the community for recreation. Moffat park is currently used for recreational activities such as walking, hiking, mountain biking, camping, quad biking, etc, by residents of the surrounding suburbs. This development would result in reduction/loss of this facility that serves the community. Moffat Park is a good quality, accessible green space and provides many health and well-being benefits. The most significant of these can be grouped into three broad categories: (1) Increased life expectancy and reduced health inequality; (2) improvements in levels of physical activity and heath; (3) promotion of psychological health and mental well being. Associations have been found between access to green space and levels of physical activity, which in turn improves individuals' health. Green spaces also have beneficial impact on mental well being and cognitive function. The re-zoning and development seeks to reduce on of the last remaining natural public open spaces in the south of Johannesburg. c. The development of the Township will result in the loss/ reduction of open, natural, environmentally friendly green space Moffat Park has an important role in supporting the adaptation of people who live in the surrounding suburbs and city to a changing climate. It provides shade, cooling and wind interception and an insulation role in the winter. It also mitigates the risks from climate change-induced reductions in air and water quality; and it provides a buffer for habitats and	

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			species, whilst contributing to attainment of sustainable urban drainage and controlling upstream water flows to reduce flood risk. Effectively harnessed, Moffat Park can also be used to promote an appreciation of the effects of climate change and lifestyle changes needed to reduce further effects and/or to adapt to them. d. The development of the township will result in the loss/reduction of space for wildlife and habitats. Ecological benefits of green urban infrastructure are largely related to the provision of habitat. Species from the very common to the very rare make use of all types of green areas like Moffat Park. e. The development of the township will remove the potential of Moffat Park for enhancing social cohesion; it can bring people together, and create community cohesion as different social groups engage with each other whilst making use of the park for recreation. f. The current plan's educational facilities are inadequate to accommodate children of 5,161 families. • Schools in the surrounds are already over capacity • Tertiary education in the south is non-existent • The current plan has educational facilities as part of phase 2 (cart before horse) Educational facilities needs to be built first to prevent even further over-crowding in surrounding schools. The development must not start until the educational facilities are built g. The current plan does not sufficiently cater for public transportation provisioning public transportation in the south is currently very limited. The proposed BRT will not adequately cater for the high density 5,161 unit development. We recommend that the Gautrain be provided to the South.	

No	NAME	DATE	COMMENT	RESPONSE
			h. The development will have a negative effect on values of surrounding properties. The current proposal for RDP/BNG/GAP units have values well below the values of surrounding suburbs (The Hill, Linmeyer) whose units which vary from R1m to R2,5m. This will result in unit values being depressed in surrounding areas, and residents losing money in their most valuable investment. i. The Metro, Calgro 3, Standard bank, LEAP, have not consulted adequately with those most affected – residents surrounding Moffat Park. • Tender was awarded 5 months before public participation • One poorly advertised and attended meeting was held • Requests for meetings have been ignored • 4 Notices placed in Nephin Rd, 1 in South Rand Rd, 1 in Southern Klipriver Rd, 0 in East – each of these roads is +/- 1,3km long. • Insufficient period were provided for objections – only 28 days j. The current plan does not cater for rehabilitation of surrounding suburbs or community. No investment is being made in uplifting existing suburbs. R1,356 Billion would be better spent uplifting suburbs like Welfare Park, South Hills, Moffat View, Roseacre, etc. k. The current plan does not address the social and economic needs of the 5,161 families and surrounding suburbs. The current plan for 5,161 units, 6.88x more dense than the surrounding suburbs. This will result in overcrowding and unemployment , with unwelcome social and economic decline. This plan does even begin to address these issues and is designed to make maximum profits for Standard bank and Calgro M3 at the expense of the South. l. The current plan does not address the inadequate road infrastructure & traffic congestion	

No	NAME	DATE	COMMENT	RESPONSE
			already experienced on arterial roads around Moffat Park. The estimated +10 000 cars will result in significant congestion during peak hours on arterial routes. During peak hours congestion already exists on cnr of East/South Klipriversberg Roads . During peak hours congestion already exists on Vickers/Marjorie/M19 north all the way through to Heidelberg Rd in the city. No additional upgrades are included in the current plan. Further, if there is to be a development, we request that: 1. Consultation takes place with the residents of the surrounding areas so we can contribute and express recommendations and concerns. 2. Reduction in the number of residential units from 5,161 to 1,000 –i.e. same density as The Hill and Linmeyer. 3. No mulitilevel (4) storey residential blocks, only freehold, freestanding housing should be permitted. 4. All residential units to be "full title" and owned by residents – no "council/metro" rental housing. It's a fact that owners take better care of their properties than tenants. 5. Additional education facilities be provided – as the surrounding schools are already at capacity. 6. Increased public transportation – The proposed BRT is inadequate – Gautrain to the South would be recommended. 7. Rehabilitation / upliftment of surrounding suburbs (Welfare Park, South Hills, Moffat View, Roseacre, etc) be undertaken. 8. Social, economic, environmental, transportation and educational needs of proposed development and surrounding suburbs be addressed. The recommendations are to ensure that "South Hills 2" does not become another run down suburb like "South Hills 1 " Based on the above, we feel that the application for establishment of a township should	

No	NAME	DATE	COMMENT	RESPONSE
			be declined.	
22.	Nicolette Kluge	12/03/2012	Attached please find copy of my letter of Objection on ERF 1202 South Hills "Moffat Park". Moffat Park was donated to the people of the South from our forefathers, which are in the title deeds - "The land is to be used solely for the purposes of a **PUBLIC PARK"** and nothing else. As a resident and/or parent we are aware that we have a shortage of schooling in the area. All our schools are overcrowded as it is. Where would you like to put all these children???? What impact will +/- ANOTHER 11224 students have on the current schooling system (assuming 2 children per family)?? The South Rand Hospital is **POORLY EQUIPPED AND POORLY RUN and this is a fact** and no arrangements have been made to improve this situation!!! Other concerns are the **SEWERAGE, ELECTRICITY, PUBLIC TRANSPORT (EXTRA 2 CARS PER FAMILY PLUS IF CHILDREN HAVE CARS !!) & WATER!!** **The infrastructure will not be able to handle this mass of people!! (An extra 7000 - 9000 commuters).** Moffat Park is a good quality, accessible green space and provides many health and well-being benefits. The most significant of these can be grouped into three broad categories:	

No	NAME	DATE	COMMENT	RESPONSE
			(1) increased life expectancy and reduced health inequality; (2) improvements in levels of physical activity and health; (3) promotion of psychological health and mental well-being. Associations have been found between access to green space and raised levels of physical activity, which in turn improves individuals' health. Green spaces also have a beneficial impact on mental well-being and cognitive function. This re-zoning & development seeks to reduce one of the last remaining natural public open spaces in the South of Johannesburg. Loss of open natural, environmentally friendly green space Moffat Park has an important role in supporting the adaptation of people who live in the surrounding suburbs and city to a changing climate. It provides shade, cooling and wind interception and an insulation role in the winter. It also mitigates the risks from climate change-induced reductions in air and water quality; and it provides a buffer for habitats and species, whilst contributing to attainment of sustainable urban drainage and controlling upstream water flows to reduce flood risk. Effectively harnessed, Moffat Park has the potential for informing people about climate change. Moffat Park can also be used to promote an appreciation of the impacts of climate change and lifestyle changes needed to reduce further effects and/or to adapt to them. Loss of Wildlife and habitats Ecological benefits of urban green infrastructure are largely related to the provision of habitat. Species from the very common to the very rare make use of all types of green areas like Moffat Park. Moffat Park has the potential for enhancing social cohesion; it can bring people together,	

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			and can create community cohesion as different social groups engage with each other whilst making use of the park for recreation. Based on the above, we feel that the re-zoning should be declined.	
Comments received after Draft Environmental Impact Assessment made available for review – 13th of March 2012				
No	**NAME**	**DATE**	**COMMENT**	**RESPONSE**
23.	Beverley Turk	14/03/2012	I think that the Draft EIA should be on view for the whole month of April, as the residents are not happy with the development of the park, and the document is really quite comprehensive and volumous. Everyone needs to see the document and give their comments. another reason why I would prefer it for 6 weeks is because of the way in which this whole development was planned and put out to the residents with 1 meeting in April 2011.	According to NEMA – the legal requirement is for 40 days – so although we usually ask that the comments be given in 30 days, we always give them another 10 days – so the comment period will be until the 23th April 2012 We always send a reminder before the 30 days and then indicate to everyone that they have a few days extra. Otherwise they wait until the

No	NAME	DATE	COMMENT	RESPONSE
				end before they start looking at the comment.
24.	Solly Doll	14/03/2012	Please advise if the plans are available for the South Hills Extension 2 development and where I can go to have a look at them. I am interested in purchasing a residential stand	
25.	1. Miguel De Carvalho 2. Gwen Poulton 3. M van Staden 4. C De Oliveira		**Letter of objection: Application for establishment of township – South Hills extension 2** With reference to: • Notice placed in South rand road • Documents relating to the development inspected at the 8th floor Metro Centre • Deeds of Transfer (Title Deeds) • "South Hills extension 2" is commonly known as "Moffat Park" • 3 Nov 2010 – R1,356 Billion tender was awarded to Standard bank & Calgro M3 (see Calgro website) • Nov 2011 – "South Hills extension 2 – Memorandum in support of the application for Township establishment". Pdf Page 23: "The combined total units that is envisioned to be developed is 5,161 residential units" We would like to formally object to the **Application of establishment of township**	

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			"South Hills extension 2" on the following grounds: a. The development of the township is on public park land and is against the wishes of forefathers as expressed in the Title Deeds – "The land is to be used solely for the purposes of a public park" – see Page 3 section (a) and page 6 section (f) of the "Deeds of Transfer". b. The development of the township will result in loss / reduction of the park that serves the community for recreation. Moffat park is currently used for recreational activities such as walking, hiking, mountain biking, camping, quad biking, etc, by residents of surrounding suburbs. This development will result in reduction / loss of this facility that serves the community. Moffat Park is a good quality, accessible green space and provides many health and well-beeing benefits. The most significant of these can be grouped into three borad categories: (1) increased life expectancy and reduced health inequality; (2) improvments in levels of physical activity and health. Green spaces also have a beneficial impact on mental well-being and cognitive function. This development seeks to reduce one of the last remaining natural public open spaces in the South of Joahnnesburg. c. The development of the township will result in loss / reduction of open natural, environmentally friendly green open space. Moffat Park has an important role in supporting the adaptation of people who live in the surrounding suburbs and city to a changing climate. It provides shade, cooling and wind interception and an insulation role in the winter. It also mitigates the risks from climate	

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			change-induced reductions in air and water quality; and it provides a buffer for habitats and species, whilst contribution to attainment of sustainable urban drainage and controlling upstream water flows to reduce flood risk. Effectively harnessed, Moffat Park has the potential for informing people about climate change. Moffat Park can also be used to promote and appreciation of the impacts of climate change and lifestyle changes needed to reduce further effects and /or to adapt to them. d. The development of the township will result in loss/reduction of space for wildlife and habitats. Ecological benefits of urban green infrastructure are largely related to the provision of habitat. Species from the very common to the very rare make use of all types of green areas like Moffat Park. e. The development of the township will remove the potential of Moffat Park for enhancing social cohesion; it can bring people together, and can create community cohesion as different social groups engage with each owhter whilst making use of the park for recreation. f. The current plan's educational facilities are inadequate to accommodate the children of 5,161 families. • Schools in the surround are already over capacity • Tertiary education in the South is non-existent • The current plan has educational as part of phase 2 (cart before horse) Educational facilities need to be built first to prevent further over-crowding in surrounding schools. The development must not start until educational facilities are built. g. The current plan does not sufficiently cater for public transportation provisioning public transportation in the south is currently very limited. The proposed BRT will not	

No	NAME	DATE	COMMENT	RESPONSE
			adequately cater for the high density 5,161 unit development. We recommend that the Gautrain be provided to the South. h. The development will have a negative effect on values of surrounding properties. The current proposal for RDP/BNG/GAP units have values well below the values of surrounding suburbs (The Hill, Linmeyer) whose units which vary from R1m to R2,5m. This will result in unit values being depressed in surrounding areas, and residents losing money in their most valuable investment. i. The Metro, Calgro 3, Standard bank, LEAP, have not consulted adequately with those most affected – residents surrounding Moffat Park. • Tender was awarded 5 months before public participation • One poorly advertised and attended meeting was held • Requests for meetings have been ignored • 4 Notices placed in Nephin Rd, 1 in South Rand Rd, 1 in Southern Klipriver Rd, 0 in East – each of these roads is +/- 1,3km long. • Insufficient period were provided for objections – only 28 days j. The current plan does not cater for rehabilitation of surrounding suburbs or community. No investment is being made in uplifting existing suburbs. R1,356 Billion would be better spent uplifting suburbs like Welfare Park, South Hills, Moffat View, Roseacre, etc. k. The current plan does not address the social and economic needs of the 5,161 families and surrounding suburbs. The current plan for 5,161 units, 6.88x more dense than the surrounding suburbs. This will result in overcrowding and unemployment , with unwelcome social and economic decline. This plan does even begin to address these issues and is designed to make maximum profits for Standard bank and Calgro M3 at the expense of the South.	

No	NAME	DATE	COMMENT	RESPONSE
			I. The current plan does not address the inadequate road infrastructure & traffic congestion already experienced on arterial roads around Moffat Park. The estimated +10 000 cars will result in significant congestion during peak hours on arterial routes. During peak hours congestion already exists on cnr of East/South Klipriversberg Roads . During peak hours congestion already exists on Vickers/Marjorie/M19 north all the way through to Heidelberg Rd in the city. No additional upgrades are included in the current plan. Further, if there is to be a development, we request that: 1. Consultation takes place with the residents of the surrounding areas so we can contribute and express recommendations and concerns. 2. Reduction in the number of residential units from 5,161 to 1,000 –i.e. same density as The Hill and Linmeyer. 3. No mulitilevel (4) storey residential blocks, only freehold, freestanding housing should be permitted. 4. All residential units to be "full title" and owned by residents – no "council/metro" rental housing. It's a fact that owners take better care of their properties than tenants. 5. Additional education facilities be provided – as the surrounding schools are already at capacity. 6. Increased public transportation – The proposed BRT is inadequate – Gautrain to the South would be recommended. 7. Rehabilitation / upliftment of surrounding suburbs (Welfare Park, South Hills, Moffat View, Roseacre, etc) be undertaken. 8. Social, economic, environmental, transportation and educational needs of proposed development and surrounding suburbs be addressed. The recommendations are to ensure that "South Hills 2" does not become another run down suburb like "South Hills 1 "	

No	NAME	DATE	COMMENT	RESPONSE
			Based on the above, we feel that the application for establishment of a township should be declined.	
26.	1. Miguel De Carvalho 2. Robert J Ermer 3. Gwen Poulton 4. Marisa De Araujo 5. M van Staden 6. C De Oliveira		**Letter of objection: Removal of restrictive condition and simultaneous rezoning of Erf 1202 South Hills from "Public Open Space" to "Residential 1, 2, 3, Educational, Institutional, Public Road"** With reference to: • Notice placed on Nephin road • Documents relating to the development inspected at the 8th floor Metro Centre • Deeds of Transfer (Title Deeds) • "Erf 1202 South Hills" is commonly known as "Moffat Park" We would like to formally object to the Removal of Restrictive condition and simultaneous rezoning of Erf 1202 South Hills from **"Public Open Space" to "Residential 1, 2, 3 Educational, Institutional, Public Road**" on the following grounds: a. This is against the wishes of the forefathers as expressed in the Title Deeds – "The land is to be used solely for the purposes of a public park" – see Page 3 section (a) and Page 6 section (f) of the "Deeds of Transfer" b. Loss of park that serves the community for recreation. Moffat park is currently used for recreational activities such as walking, hiking, mountain biking, camping, quad biking, etc, by residents of the surrounding suburbs. This development would result in reduction/loss of this facility that serves the community.	

No	NAME	DATE	COMMENT	RESPONSE
			Moffat Park is a good quality, accessible green space and provides many health and well-being benefits. The most significant of these can be grouped into three broad categories: (1) Increased life expectancy and reduced health inequality; (2) improvements in levels of physical activity and heath; (3) promotion of psychological health and mental well being. Associations have been found between access to green space and levels of physical activity, which in turn improves individuals' health. Green spaces also have beneficial impact on mental well being and cognitive function. The re-zoning and development seeks to reduce on of the last remaining natural public open spaces in the south of Johannesburg. c. Loss of open, natural, environmentally friendly green space Moffat Park has an important role in supporting the adaptation of people who live in the surrounding suburbs and city to a changing climate. It provides shade, cooling and wind interception and an insulation role in the winter. It also mitigates the risks from climate change-induced reductions in air and water quality; and it provides a buffer for habitats and species, whilst contributing to attainment of sustainable urban drainage and controlling upstream water flows to reduce flood risk. Effectively harnessed, Moffat Park can also be used to promote an appreciation of the effects of climate change and lifestyle changes needed to reduce further effects and/or to adapt to them. d. Loss of wildlife habitats Ecological benefits of urban green infrastructure are largely related to the provision of habitat. Species from the very common to the very rare make use of all types of green areas like Moffat Park. e. Moffat Park has the potential for enhancing the social cohesion; it can bring people together, and can create community cohesion as different social groups engage with each other whilst making use of the park for recreation.	

No	NAME	DATE	COMMENT	RESPONSE
			Based on the above we feel that the re-zoning should be declined.	
27.	Helga Bekker	02/03/2012	I refer to the website http://www.moffat-park.co.za/objections and wish to concur with their objection findings and wish to add my voice to the objection of the proposed development of Moffat Park as per the reasons given.	
28.	John Webster	10/01/2012	As EIA is now expected in January and the project appears to be gathering much steam I have the following questions which as a resident of Linmeyer I think I have a right to know. I would have liked to attach the articles that I am referring to but it will make the email too large--- they are available in need and you are no doubt aware of their contents: (1) The newspaper article (Camaro Chronicle) in which you are quoted referring to 2800 units and no RDP housing. The application to establish a township now refers to 5161 units and there is all types of units involved including RDP housing. Can you please explain this huge discrepancy both in numbers and type of buildings. (2) Your own report dated 4/11/2011 states that out of some 199 hectares only 67 hectares will be developed. Given that the number of units is not far off double what was originally proposed how can only 67 hectares be developed. (3) How accurate are the attached maps. Do they mean that the development will essentially be down the sides of Moffat Park with no development adjacent to Linmeyer on South Rand Rd except for the business/ community centre/taxi rank.	

No	NAME	DATE	COMMENT	RESPONSE
			The fact is that this development has the potential to either enhance or negatively affect what is most probably most individuals biggest asset –their home. There appears to be so much mis-information that it makes it very difficult for a person to make decisions about future living arrangements. I have been on record as stating that consultation with local communities has been close to non-existent and appears to purposely be obscure. I am sincerely hoping that I do not get another of these " your concerns are noted e mails" ----- they are a waste of time !!!!!!! Some HONEST ANSWERS would be appreciated. Looking forward to your advices	
29.	Alberto Da Silva	16/03/2012	Thank you for the comments, however, as I understand it, the comment period on the town planning application had lapsed. Just because the period has lapsed, does that mean we must stop objecting? Since many people are only <u>now</u> finding out, they are <u>now</u> objecting. There is <u>no</u> support for this development from the residents in the South. These are the people who's homes and life savings will be devalued by this low cost development. These are the people who will be deprived of recreational access to Moffat Park with it's associated health and well being benefits. These are the people who will be subject to the social economic impact of overcrowding and unemployment when 5,161 families move in. These are the people who will be subject to traffic congestion with the additional 10,000 cars.	No you can still object and give comment. However please make sure you object in terms of the appropriate process. The town planning process comment period had lapsed. On this process you can send the comment directly to the City Council with a copy to the town planner. On the EIA process you can send the comments to me. Any information

No	NAME	DATE	COMMENT	RESPONSE
			You are correct, than in terms section 28(2) of the town-planning and townships ordinance of 1986, the 28 days has lapsed. Fortunately, the hearing has not yet been held, as some analysis is still outstanding. These objections will be lodged as late objections and will form part of the hearing. Additionally, these objections are addressed to a number of other parties, who do not have a 28 day limit. As you can see, the objection momentum is growing against this the development, and as new people find out, you can expect many more objections.	that I receive regarding the town planning process I forward to the town planner. Comments regarding the EIA process must be addressed in terms of the NEMA legislation. The comment period on the EIA process will only lapse after we had the next public meeting in the middle of April. We are finalising the date and place for the meeting and will advertise and let everyone know
30.	M De Araujo		What is factually correct and of high concern is the lack of schooling and healthcare in the area which cannot even sustain the number of residents at the moment. I am curious to know whether you are a resident in the area?? You would do well to investigate the stats a little more before embarking on such a project.	My place of residence is not relevant to the process However do not reside in the area. The EIA process requires an extensive collection of information which is included in the report.
31.	Yolande Vermaak	30 March 2012	Please register me as an interested party, I have been living in Nephin /Frankford roads for the past 33 years. Ai am pleased with the decision to develop the Moffatt park. Please keep me updated with the development plans, please let me know what is to be build on cnr Southrand and Nephin roads. Hope they start building soon, there is just too much crime happening on the Moffatt park grounds.	

No	NAME	DATE	COMMENT	RESPONSE
32	Alberto da Silva (Linmeyer Rate Payers Association	28 March 2012	**General Comments:** 1. The EIA was paid for by Calgro M3 – hence the conclusions are in favour of Calgro M3 2. The Earliest references to the development is August 2009 in Vol1-08-Heritage-Impact-Assessment.pdf • Residents were only informed in April 2011 • Why were Residents not informed sooner of the proposed development? **Traffic Impact Study:** 1. The Traffic Impact Study is dated 12 Jan 2012 • Some analysis was done in November 2011. December and January are quiet periods. 2. The Trip Generation Calculations, as listed in ANNEXURE D, the basis of the report are incorrect • The Rate / Unit should be between 1 and 1.1 for "Residential 1", This will conservatively increase the calculations by 21% for the eastern and 40% for the western development – See P. Peska and C. Venter 2010 – "A Relook at Residential Trip Generation Variables" • The "mixed use reduction factors", fail to observe that in the plan there are no internal routes between the eastern and western developments and that major facilities like	

No	NAME	DATE	COMMENT	RESPONSE
			schools and shopping complexes are located at the northern edge. This will have at the opposite effect and increased trip generation. • The "mixed use" reduction is incorrectly applied, as there are no meaningful work opportunities within the development. 3. The Study failed to consider Linhill FC, which generates significant traffic between 17-15PMpm-20:00pm during the football season which is February – September. 4. The study recommends that "The development should contribute 30% and and the local authority the remaining 70%, as the road improvements are only required because of the development. 5. The Study failed to consider existing busy arterial routes which fall within a 1.8km radius of Moffat Park • Prairie (M11) / Verona (South Rand/M38) (1.3km west of Moffat Park) • Comaro (M11) / Victoria / Boundary / N12 Ramps (1.2km-1.3km west of Moffat Park) • Marjorie (M19) / Heidelberg (M31) (1.8km north of Moffat Park) 6. The Study failed to notice a major development 2.8km away at Oakdene/Richmond Park 7. The figures used to calculate the trips are from 2007. Transport profiles in have changed significantly since then. 8. No Consideration has been taken of the number of cars that will be using South Rand Road	

No	NAME	DATE	COMMENT	RESPONSE
			as a route to avoid the tolled highway. 9. The specialist keeps referring to the South Rand Road / Plinlimmon / East Road interchange as a single interchange. This is incorrect. 10. No consideration has been given to the fact the the amount of traffic on East Road is going to be unmanageable at peak hur in the mornings. Linmeyer Gardens is going to work, St Martins is arriving for school and the residents of the development are leaving for work. Serious consideration should be given to closing or moving at least tow of the access points on East Road. 11. No consideration seems to have been given to how the residents without cars will access amenities? 12. The Study document makes a comparison with "Brickfield" and Legae", but these are inner city developments with very different amenities closely available. This will be a suburban development. 13. On Page 21, there are 4 recommended changes to the intersection of the R59 and South Rand road, but on page 37, there is only one – please clarify. 14. There are taxi pullover points shown using East Street directly outside the primary school. This does not make sense from a safety, hygiene or noise level. 15. It is almost a certainty that an informal taxi rank will spring up to service this community. No mention of this risk or any mitigation actions have been made in the Traffic Impact Study. 16. Mariteng seems to lack local knowledge of traffic patterns in the Southern Suburbs and which roads are currently congested.	

No	NAME	DATE	COMMENT	RESPONSE
			17. Based on the above, the traffic study cannot be relied upon. We would recommend that this study be re-done with the above factors taken into consideration. Failure to do so will result in significant congestion and costs at a later stage. **WSM Leshika Geotechnical investigation:** 1. The report is "overlay printed" with many sections missing, eg. 7.2, 7.6, 7.8 are all missing. 2. The missing sections and printing make the report unreadable and unusable. 3. We request that a proper copy be supplied. **Geo hydrological Report (information derived from the summary as WSM Report is broken):** 1. South Africa is an arid country, with water being a scarce resource. 2. The fact that the Moffat Park lies in the headwater region with no up gradient contaminant source is important in an arid country trying to make best use of its water resources. 3. This development will render this water source unusable. 4. P26 of the Geo hydrological report recommends that further investigation be conducted into the impacts of the development on the catchment area. 5. Why are these facts not taken into account against the development? **Refuse removal:** 1. There is no assessment as to Pititup's capacity to deal with the increased amount of waste or will there be overflowing skips of rubbish?	

No	NAME	DATE	COMMENT	RESPONSE
			Educational Facilities: 1. There are two schools earmarked on the site, to accommodate 750 primary school pupils and 1600 high school pupils. 2. In Dr Gwen's responses to I&A questions, she states that "These sites will be made available to the Dept. of Education". 3. There is no correspondence / request with the department of public works / department of education to build these schools. 4. There is no plan or commitment to building any schools or even a time period for such construction – this is the same as Pennyville where education facilities have not yet been started. 5. Sunday Times 25th March 2012 states that the state will be spending R657 million LESS on new schools in the future, so the chances of a school being built are minimal. 6. This also assumes that only half the households will have a child. It is far more likely that there will be more than 10,000 children needing schooling (2 per house hold) 7. Where will the 2350/10,000 children go to school? 8. Existing schools are already at capacity and as these are low cost dwellings, the parents will not be paying private fees. **Fire Station:** 1. The study does not consider the fire department requirements.	

No	NAME	DATE	COMMENT	RESPONSE
			2. The fire department does not currently have capacity to cope with the existing area under its mandate. 3. It has already closed the fire station in Linmeyer. 4. Will it be able to absorb responsibility for all the additional dwellings? 5. Also keeping in mind that the fire department is also responsible for paramedic response. **Policing:** 1. The study does not adequately address safety. 2. There are currently too few police officers and/or response vehicles for the area. 3. How is it proposed that this development will be accommodated? 4. The present policing service is a satellite station which is not coping with the present demand. **Health facilities:** 1. The study does not perform an analysis of the health facilities in the area. 2. The current hospital and clinic do not cope with the existing demand on their services. 3. How they cope with an influx of anther 5,000 households = 20,000 people (4 per home) needing primary health care. **City Power:** 1. It is going to cost City Power R40 million to upgrade the electricity infrastructure. 2. Do they have capacity and budge?	

No	NAME	DATE	COMMENT	RESPONSE
			3. The proposed timeline is to commence te upgrades in March 2013 and complete them in Dec 2014? 4. This timeline was proposed by the consultants, but has not been agreed to by City Power. **Water and sewage:** 1. There is repeated mention of a storm water management system which must be built. Will this be accommodated in the plans? 2. The pumpstation is going to have to be upgraded to accommodate this development. Have Joburg Water got capacity to do this? 3. The geo hydrological report states that the development must be evaluated in terms of the overall impact on the Upper Vaal catchment area, and not just on this development site alone. There is no evidence that this has been done. **Conservation Issues** Dr Theron states that the Red Data List ("RDL") plant *Khadia beswickii*, which was once thought to be extinct, will be relocated and implies, without guarantees, that research funding will be made available in order to facilitate this. According to the GDACE Threatened species policy, this plant must be conserved in situ with a 200m buffer zone. This is clearly stated in David Hoare's document. The EIA states that the buffer zone will be reduced to 50m. (p36) There are 9 other species which are very likely to exist on the site, which are red or orange listed. The survey was done in September 2009 and it was stated that "The feasibility study was done before the rain season. The the list of dominant floral species is by no means an indication of the vegetation diversity present on the site. Other species, and more important, RDL species could be present on the site." No mention is made of any investigation into any migratory species that may use the site	

No	NAME	DATE	COMMENT	RESPONSE
			at only particular times of year. The Joburg Metropolitan Open Space System identifies this site as a "priority area" which must not be developed. (2007). The wetland area near East Street is protected by environmental law but the plans show it under buildings. The vegetation type is Soweto Highveld Grassland which is listed as endangered. The conservation target for this vegetation type is to conserve 24%. Currently only 0.2% is conserved. The following fauna are listed as potentially using the site: South African Hedgehog – Protected –High probability White tailed mouse – Endangered – High probability Lesser Kestrel – Vulnerable – Very High probability Heidelberg Copper butterfly – RED LISTED – Very High probability Marsh Sylph butterfly – RED LISTED – High probability On page 79 there is repeated mention of "may be required to work in / near wetland". What rehabilitation plans are in place? Additionally, Dr Theron ignored aspects of the environmental reports to suit the development.	

No	NAME	DATE	COMMENT	RESPONSE
			For example: Reducing a buffer zone from 200m to 50m (see p21 of report). Recommending relocation RED plant species to suite the development, but not realising, that the very people who would benefit from the current location, would be deprived by its relocation. **Impact on values of surrounding properties:** 1. I&A raised the question of devaluation of surrounding properties. 2. No scientific analysis was done, and answers are based on misinformation. 3. The answer from Dr Gwen was that a "buffer of single family units on the edges". 4. This contradicts the development plan which has many 3 & 4 level units on the edges. **Heritage Impact Assessment:** "The geological site is viewed to have a high significance on a regional level and should be avoided at all costs. The two sites used by adherents of the Apostolic faith are viewed to have a high significance on a local level. The developer should communicate with the people using these sites prior to the development taking place. The tow informal dump sites are viewed to have a medium significance on a regional level and test excavations should be done on the by a suitably qualified archaeologist." 1. The EIA ignores the recommendations of the assessment – the sites identified are overlaid by the development will be destroyed by the development.	

No	NAME	DATE	COMMENT	RESPONSE
			2. When will the excavation be done **Employment:** The EIA promotes the fact that the development will create jobs and reduce crime related to unemployment. Real life shows that the jobs will go away again once the development is complete, creating a higher level of unemployment. Anecdotal evidence also shows that crime levels generally tend to increase while building operations are in progress. The EIA does not propose mitigating advice on dealing with the increased crime. **Blue sky thinking:** How are you planning to prevent the approximately 10 000 residents from destroying the public open space? There is a high probability of the space being used to dump household refuse, or potentially grow crops. Simple foot traffic will cause a significant amount of damage. It is stated on page 96 that “walkways through open spaces will be enforced”. How? “the development will blend in/compliment(sic) the surrounding environment completely”, but on the same page (pg40) you state that the development will have a high visual impact.	

No	NAME	DATE	COMMENT	RESPONSE
			There are already a number of vacant dwellings in the surrounding areas, is there sufficient demand for this development, or will it rapidly generate into a slum? CoJ currently does not have the capacity to maintain / improve Moffat View Flats, South Hill Flats, Welfare Park Flats, but it is proposing to more build 4 Level flats. The EIA seems to think that the development will be deposited in place and will have no ripple effect into the surrounding community. Once Calgro M3 and Standard bank have made their money and left, who will be maintaining the premises and the public open space? The Leshika geological survey states that there will be "shallow severe excavation difficulty". This means that it will require blasting and jackhammers to create solid foundations. How will this impact on the surrounding suburbs and schools? Will the developer pay the repair costs for any houses potentially damaged by the blasting? **Why are the numbers different?** When reading the EIA document, not everyone seems to be working from the same data. Dr Theron states 4200 dwelling units, the traffic summary states 5161 dwelling units, the civil engineer states 5189 dwelling units at the top of the page and 5161 at the bottom of the page. The civil engineer states that the figures are for this development, but puts a heading of	

No	NAME	DATE	COMMENT	RESPONSE
			Fleurhof? **Land Use Alternatives (p74-p84)** The options analysed for the development of Moffat Park are biased, subjective, and unscientific. The use of terms like: "The No-Go options is not considered desirable" "Preferred Alternative" And clearly demonstrate the bias and subjective nature of the analysis. The relative weights and scores are designed to give a predictable outcome. The three examples demonstrate the scoring issue: <u>Scoring for Visual Impact:</u> • Alternative 1 "no-Go" scores Low -1 • Alternative 2 (low density residential is rated as "Med-low-2", Architectural guidelines and aesthetic requirements Please explain how lots of 4 level block unit be more visually pleasing that an eco-estate? Additionally to contrast the "No-Go" rating of 1 with a rating of 2 for Alternative 3, when the <u>Ridge ecological assessment</u> clearly states that the ridge has high ecological and aesthetic value. These 2 factors imply a fairer scoring of 4 (same as Alternative 2) to 5 for Alternative 3.	

No	NAME	DATE	COMMENT	RESPONSE
			<u>Scoring for Road Access:</u> • Alternative 1 – No0Go – rated "High-5" – "No road improvement in an area that desperately requires road upgrades" • Alternative 3 (Preferred Alternative) is rated at "Med-low-2", - "Increase in traffic to be accommodated due to surrounding road upgrades" The road upgrades are only required because of the proposed development! These scores should be reversed. <u>Scoring for Storm water management</u> • Alternative 1 – No-Go – Score Medium-3 "No storm water management" • Alternative 3 (Preferred Alternative) is rated at "Med-low-2", - "Effective storm water management can be implemented" This contradicts P20 of the <u>Ridge ecological assessment</u> – "Natural seepage through soils and grassy habitat of the site delays water discharge into the stream. But the proposed development collectively contains large areas of impermeable surfaces like paving and roofs. This will result in an increased runoff of rainwater into the stream, contribution to an already problematic and hazardous "flash flood" occurring in urban areas after a heavy summer rain storms. Fixing the scores would result in No-Go winning. The "No-Go" option fails to acknowledge the potential eco-tourism opportunities that were	

No	NAME	DATE	COMMENT	RESPONSE
			reaised by I&A's. The "No-Go" option fails to acknowledge te health and well-being benefits, the recreational benefits. The "Preferred Option" fails to score the loss of wild life, loss bird life, loss of fauna & flora the development will have. **Documentary flaws:** There is an e-mail about a development in Irene included in the public participation pack. There is reference to an airport on page 76 and page 98 "the potential to provide additional airport facilities" There is reference to a retirement village on page 94. Is this document just a cut and paste mash-up? It appears that proper focus has not been given to this document and as a result it should be discredited and another EIA done by another practitioner. Dr Theron's declaration that she has no vested interest in the development is not included in the pack. It is stated on page 59 that the lower income properties will be located away from the existing schools, but the map shows that the highest density of 4 storey GAP units directly overlook Hill High school and the crèche. A number of times in the document it is mentioned that thins will be done "as far as possible". For example, "indigenous vegetation will be reintroduced to the newly created urban open	

No	NAME	DATE	COMMENT	RESPONSE
			spaces as far as possible." Who determines whit is possible? The environmental specialist or the budge? There is no time line in the document, only repeated references to "lengthy" (sic) so even if the neighbours are in favour of the development, they have no idea how long they will be living with the discomfort of construction. The document does not present itself as an unbiased document. Word usage and phrase selection seem to lean in favour of the developer. Instead of presenting alternatives 1 through 5, the author gives an opinion, by calling them 'no-go' and preferred alternative'. This shows significant bias in favour of the development. Also, the document states that there will be no job creation if option of Res 1 is pursued. This is blatant nonsense. There may be slightly fewer construction jobs but ongoing employment for domestic workers, gardeners, security personnel and maintenance personnel would probably be higher. Some of the motivations for the development are "Improved tax base for the local community" due to the employment of the construction workers. This is just an assumption. The use of local labour, goods and services is not a guarantee, merely a sales pitch. Every supplier would have to go through the tender process and local suppliers will probably not be given preference. **Public Participation:**	

No	NAME	DATE	COMMENT	RESPONSE
			The public participation process seems to be fatally flawed, with the majority of stakeholders unaware of the development, or misinformed about the scope of it? The public participation process was very poorly done, as evidence by only 24 people attending LEAP's 5th April 2011 meeting. **As of 28 March, we have received and lodged over 800 official objections with CoJ.** While Dr Theron will have you believe that LEAP did all they could to be consultative in this decision, the simple truth is they failed and fell far short of what would be expected in a matter of this magnitude. This was demonstrated by the outrage and surprise that virtually all rate payers expressed. We were all shocked by the extent and implications of the Moffat Park Development. There are an estimated +5000 homes within 1km radius of Moffat Park. Analysis of the I&A submissions show that, 95% were against the development. I would project these numbers to reflect that 95% of residents surrounding Moffat Park are against the development. The consequences of LEAP's superficial Participation Process has very serious implications for residents. Residents were not informed, and when some did discover what was planned, were left with very little or no time to object. **Issues & Response Register:**	

No	NAME	DATE	COMMENT	RESPONSE
			I&A respondents were misled into believing that their comments would influence the process. Clearly, their submissions had no influence, with most of Dr Theron's one line responses being of a condescending nature and just fobbing of the questions Examples: P50. "The area had been neglected and the City Council simply does not have the money to maintain derelict open pieces of land" It's meant to be an open natural piece of land. It's derelict because the CoJ does not do what rate payers pay it to do. P59. RESPONS: "Maintain Large open areas are simply too costly for the city to maintain it in the manner that is required by residents" Moffat Park is a "Passive Park" and CoJ/City Parks does not do anything currently, they spend zero, so how can it be too costly? Then: "Large areas of Moffat Park will be retained as open space and active and passive recreational areas will be developed. Also the development will reach an agreement with CoJ to develop and maintain the park." These 2 quotes contradict each other, if the CoJ can't maintain the current passive park, how can will it maintain the new active and passive parks? CoJ can't maintain most parks the South. Drive around South Hills, Moffat View, etc. and you will see that no parks are maintained. In Linmeyer, the residents have resorted to maintaining the park at their expense. P62. Response: Lots of "Noted", but where is the answer? "Noted" is not an answer. **Civil Engineering Services Outline Scheme Report**	

No	NAME	DATE	COMMENT	RESPONSE
			R141m Cut & Paste estimate – see Page 13 **Conclusion** The EIA Report is fatally flawed as demonstrated above and in no way justifies the development of Moffat Park. We rejet the development based on the information in the EIA. We recommend that Moffat Park be converted to a conservancy and the "green" benefits be used. A model similar to Melville Koppies be adopted. Rezoning and developing Moffat Park, sets a very bad precedent, and will open the path to rezoning of other parks like Melville Koppies, The Wilds, etc. We reserve the right to raise further objections at a later date.	
33	John Webster	28 March 2012	The problem is that the process has not even been remotely transparent from meeting advertising to the notification signs being obscure and few and far between. It is because of this that people feel that there have been underhanded dealings. You unfortunately were seen as a "spokesperson" so are in the firing line. I mean let's face it the tender was granted even before the public had any idea what was happening. I cannot help but feel that the entire matter has purposely been kept as quiet as possible and is being "slipped" through because JHB Housing know full well the objections they will be up against. You are unfortunately seen as a part of this process. If you feel that you are being unfairly targeted I strongly suggest that you get someone from Calgro or	

No	NAME	DATE	COMMENT	RESPONSE
			even better JHB Housing to "face the music"—we would also like to meet these faceless individuals. This is not personal--- it is the frustration of a community that is being kept in the dark about a development that will radically affect the area in which they live.	
34.	Robert Lane	05/04/2012	I have viewed the draft in South Hills and I request that such prime property should be allocated for an affluent suburb whereby stands could be sold at R1 000 000 per quarter acre and not to use such prime property to raise a squatter camp.	
35.	Lebo Molefe – Director: Environmental Regularoty Services (City of Johannesburg)	13/04/2012	The Draft Environmental Impact Assessment dated February 2012, copiled by LEAP refers. The site is zoned public open space, has sensitive vegetation, has a ridge and is affected by a wetland and a watercourse. In terms of the City of Johannesburg draft Bio- Regional Plan the site is mapped as a Critical Biodiversity Area. The property measures approximately 199.62ha in extent. **Description of the project:** The proposed development is for a residential township consists of 1166 erven which will be developed n phases. The township will entail residential erven, educational, institutional business 1, municipal and public open space. **Guidelines, by-laws, Precinct Plans and policies:** The 2010/2011 RSDF for Region F, Sub Area 29 aims to ensure optimal use of Moffat Park. Suitable alternate uses (to the satisfaction of Cuncil) to recreation may be considered. The proposed development is mixed use development.	

No	NAME	DATE	COMMENT	RESPONSE
			Description of alternatives: The report considers the proposal and 3 alternatives. The proposal is mixed use/residential development. Alternative 1 is the no-go option. Alternative 2 is low density development and alternative 3 is a light industrial development. The report further considers process, demand, scheduling alternatives and location alternatives. **Description and assessment of the identified environmental issues:** The possible impacts that are relevant to the development have been assessed. The specialist studies are incorporated in the report. The report somehow refers to a private open space and in the comments made by this Department in the town planning application a public open space was required. For ease of reference a table is attached as Annexure A. **The Wetland and Riparian Delineation Study** indicates that the riparian vegetating is heavily altered alien species. The report further indicates that if development will be taken to close to the riparian and wetland habitat; it would affect the habitats negatively. The report recommends that the 30m buffer from the outer edge of the wetland must be treated as environmentally sensitive and that a rehabilitation plan must be drafted and incorporated into the relevant ecological management plan to rehabilitate the watercourse and surrounding areas from on-going impacts of alien invader trees and erosion. **The Heritage Impact Assessment** indicates that various sites of cultural significance were identified which include: • Outcrops of the Mondeor conglomerates of the Witwatersrand Super group occur on site and it is used by geologists in the interpretation of the geology of the Witwatersrand goldfields. • Two sites use by adherents of Apostolic Faith were identified and at least of these is is still active. • Two informal dump sites of unknown date were identified.	

No	NAME	DATE	COMMENT	RESPONSE
			The report further indicates that the exact development proposals are not available and it is therefore impossible to state the impact of development on the identified site. The geological is viewed to be of high significance and should be avoided at all costs. Two sites used by adherents of the Apostolic Faith are viewed to be of high significance. The two informal dump sites are viewed to be of medium significance on a regional level and test excavations should be done by a suitably qualified archaeologist. The report concludes that the proposed development can proceed on condition of acceptance of proposed mitigation measures. **The Geotechnical Study** concludes that the site is not underlain by dolomite rock. Therefore dolomite stability investigation is not required. Rock outcrop is evident throughout the majority of the site and areas where no rock outcrop is evident are generally covered with very thin top soil. The report recommends that a competent geotechnical engineer or engineering geologist should inspect foundation and open service trenches to determine the variance from te above assessment. The geo-technical study is incomplete and does not include maps indicationg zones. **The Geo-Hydrological Report** concludes that the catchment is already highly stressed and has been heavily impacted by increasing discharges and deteriorating water quality. Any impacts from development must not be looked at in isolation but in terms of te cumulative impact of all developments. It is recommended that te impacts of development in this catchment be evaluated in terms of cumulative impacts on the catchment and downstream areas, rather than in isolation. **The Ridge Ecological Assessment** concludes that the ridge has a high ecological and aesthetic value in the surrounding as well as downstream areas and the potential of using the site as an urban ecological park is high.	

No	NAME	DATE	COMMENT	RESPONSE
			The report recommends that a rehabilitation plan be drafted. Management of ecology and biodiversity on te site must be improved. A long term environmental program must be implemented to sustainable conserve the ecological sensitive features on the site. **The Vegetation and Red Data Species Assessment** concludes that most of the site is in a natural state, although there are various factors that have caused transformation and degradation. From a vegetation point of view the site is considered to have a high sensitivity. One red list species was found on site and it is considered that any one or more of another nine red or orange list plan species could occur on site. There are additional nine Red or Orange List palnt species that may occur in the habitats that are found on site. The report further concludes that from a vegetation and threatened plant species point of view, it is not recommended that development be permitted on site. This is based on multiple sensitivities on site including the presence of sensitive vegetation, the confirmed presence of Red List Plant. The site is one of the remaining natural open spaces in te area. It should be fenced, cleared of aliens, degrade areas should be rehabilitated, proper access control put in place and treated as a rare natural aspect. The report indicates that this study was done prior to the rainy season and therefore recommend a follow up survey that may be required. The declared alien species that occur on the property needs to be effectively controlled. **Evaluation and presentation of mitigation measures:** The mitigation measures are proposed in the report. A layout plan is included in te report. However it does not correlate with the sensitivity map. The layout plan (Figure 2) does not take recommended buffers into consideration. Fiugre 8 of the Vegetation and Red Data Species Assessment Report indicates that the site is highly sensitive and the buffers needed extend beyond the boders of the site. An Environmental Management Programme is included in the report. However it has to be amended to include the recommendations of the specialist studies.	

No	NAME	DATE	COMMENT	RESPONSE
			Public Participation: The public participation process is detailed in the report. The proposed development was advertised on site and on the newspaper. Written notices were issued. Comments from interested and affected parties are included in the report. **Recommendations:** After reviewing the draft report, this Department has noted that the site is one of the last natural open spaces in the area. The site is associated with sensitive environmental features such as ridges, wetlands and primary vegetation. COJ Wetland Audit indicates that a valley bottom wetland traverses the site and thus any change in land use resulting in increased impervious surfaces will, unless properly managed affect the ecological functionality of the wetland and the catchment in general. As per National Environment Management Act, 1998 (Act 107 of 1998) requirement, an Environmental Impact Assessment, including all the required specialist studies was conducted. Specialist studies conducted unanimously alluded to the fact that greater part of the proposed development site is environmentally sensitive. Taking cognizance of the specialist studies outcome and accompanying sensitivity maps as listed below, there is certainly very limited area available for development on the proposed site due to environmental sensitivity. • Figure 9: the sensitivity features and their buffer zones of the ridge ecological assessment and riparian/wetland delineation on page 18 of 29 in the Ridge Ecological Assessment Report. • Figure 6: Sensitive vegetation features on site, in the Vegetation and Red Data Plant Species Assessment Report. • Figure 8: Sensitive habitat features on site with required buffer zones, in the Vegetation and Red data Plant Species Assessment Report. The Mayoral Committee Reort dated 05 May 2011 resolved that the Project Assessment Report be approved subject to relevant processes and legislation. The Environmental Impact	

No	NAME	DATE	COMMENT	RESPONSE
			Assessment has been undertaken. However, the site is sensitive and the layout plan submitted does not correlate with the sensitivity maps. Ideally no development should be allowed on this site. However should the social-economic imperatives surpass environmental needs; development in this area should focus on the conservation of natural resources. It must be restricted to that which is necessary to make the conservation of the area viable without compromising the conservation value of the area. Based on the recommendations of the specialist studies and te layout submitted te Department **cannto support** the application until the following requirements are met: 1. The proposed layout plan (Fig) must be amended in accordance to the sensitivity map taking into cognisance figure 6 and 8 as they provide cumulative sensitivity for the entire site. The layout must be submitted with the final Environemntal Impact Assessment Report. 2. Rehabilitation plan and the Ecological Management plan must be compiled and submitted with the final Environmental Impact Assessment Report. 3. A storm water management plan must be designed and submitted for approval by both Environmental Management Department and Johannesburg Raods Agency. The storm water management should minimise te generation of surface rfun-off and storm water run-off through adopting the principles of Water Sensitive Urban Designs (WSUDS) and Sustainable Urban Drainage Systems (SUDS). 4. No attenuations may be allowed within thew watercourse, wetland and associated buffers. 5. Provision must be made for a public open speace for conservation purposes. 6. The report must clearly indicate the position of the internal roads and sasses impacts that may arease as a result. 7. Recommendations of te specialist studies must be considered and included nto an Environmental Management Programme. 8. The Environmental Management Programme must be amended to include the recommendations of the specialist studies and recommendation for infrastructure with	

No	NAME	DATE	COMMENT	RESPONSE
			specific reference to the roads.	
35.	Johann van der Merwe	17/04/2012	I would hereby submit my official response to your EIS Report for this development as you requested we should do at the public meeting held on 2 April 2012. As general comment I want to express my disgust with your answers and integrity. At the meeting you made three fatal mistakes in your responses: 1. You said that you haven't yet made any decisions on this development when clearly you stated in your summary statement in this document that you recommend that this development should go ahead. 2. In your report you made a decision in favour of a "preferred" option according to a survey included in your study. At the meeting you admitted that no scientific survey methods were used to come to this conclusion and that it was your own view that was reflected in this "survey". Clearly that is not a survey and has thus no validity in making such an important decision. 3. You maintained that proper consultation was done with all parties, but in the meantime no notice was given for the meeting of 2 April 2012. You decided just to invite selected individuals. Herewith a list of 40 reasons why this development cannot go ahead. Some of these reasons are taken from your study and clearly you could have come to a "no-go" decision yourself just on the facts in your own report:	

No	NAME	DATE	COMMENT	RESPONSE
			1. Vegetation type classified as Endangered 2. Red and Orange listed plants. Conservation concern 3. Areas that are irreplaceable due to primary vegetation occurring on the site 4. Habitat for protected lepidopteran 5. Buffer area is recommended for sensitive fauna and flora 6. Sites of cultural significance 7. Geological site that should be avoided 8. Sites used by Apostolic Faith 9. This site is not along public transport routes 10. There are no indications of when or who will be responsible for road infrastructure around the site. This still has to be arranged with JRA. Without that this project cannot progress 11. Risks and key issue part of Executive Summary lists Biophysical impacts and Socio-economic impacts. Both these risk are disregarded in the rest of report 12. Lack of services is acknowledged in report but still you disregard this in your final recommendations 13. One of the COJ requirements that they don't want to spend anything on the surrounding infrastructure. This fact is not mentioned in the report at all.	

No	NAME	DATE	COMMENT	RESPONSE
			14. Lack of public participation. Notice of meetings, objections and intention of COJ are selectively done and most of these notices are only done after the fact. One such example is that the tender was awarded and financed before any public participation took place. 15. In your own admission you mentioned that LEAP was appointed by Calgro and not by COJ - in violation of NEMA requirements 16. Nowhere in this study has the local community's needs and requirements been addressed 17. Table 10 in section 15.0 rates different options. No proper survey method was used and it is ratings the authors themselves. The final score rates the no-go option as the second best option. If a proper survey is done and all aspects mentioned in this letter are considered, then the no-go option will surely come out as the best option. This survey has to be redone using proper survey principals. 18. I have seen only one response amongst the Interested Parties' submissions that supports the development. The fact that the majority of submissions were against the development was completely ignored 19. No mitigation steps are provided for loss of this green area to the community and the additional stress on infrastructure 20. The affected areas are zoned as park and recreational areas and not for residential use 21. Proposed land use area (6.1 of Draft IEA) differs from later detail 22. Water drainage lands into the Vaal river water system. A development of this size will	

No	NAME	DATE	COMMENT	RESPONSE
			have a negative impact on this water down flow and is against International Conventions 23. You admitted in your report that the town planning procedure did not follow the DFA regulations as required. So why give a positive report is this is the case? 24. The rights of current community has not been considered in regards of social, economically and healthy environment 25. Additional work opportunities will only last for the duration of the project and is not sustainable and cannot be used as an advantage to the development. On the negative side such building activities brings security and criminal risks into the picture. So there is rather a disadvantage in this regard 26. There is not efficient transport in this area and none of the roads are designed to take the additional traffic. There is no public transport or train services to this area 27. Not enough schooling facilities are available. All schools around the area are overcrowded and have extensive waiting list. The proposal of two school sites for 1600 and 750 pupils respectively is laughable if you consider two children per household giving you at least 10000 pupils to be catered for. Nowhere in this report is there a document stating the commitment from the Department of Education that these schools will be built. 28. This project does not promote conservation at all and does not prevent pollution and ecological degradation as is claimed 29. Point 10.2 Visual Impact Analysis is a joke. As an example how does these statements in this section sound in respect of the park area that has to make space for a condensed housing development: "*The Development will blend in / compliment the surrounding*	

No	NAME	DATE	COMMENT	RESPONSE
			environment completely" "The Environment can visually accept the type of development, due to its location adjacent to the existing CBD". Just in the next paragraph the author contradicts herself in that she admits that the view from the surrounding areas will be affected. This is a big negative effect in that both loss of open space and degrading of the visual loss. 30. Point 10.3.1Traffic and Access Routes is completely invalid. Calculations are done using invalid assumptions. A study done by the DBSA in 2007 projects the traffic flow at levels twice as high as what is stated in this assessment. Also an assumption was used of low vehicle ownership. The trip calculator was only done using data from the new development and did not include current volumes in the calculation. We propose that this study be done again using correct data in doing these calculations. 31. Even Sanral was not prepared to commit itself because a proper study not in place. Transport report supply details about the internal roads, but nothing is said about the upgrade to existing roads. Annexure C of this report does not exist. There is also no document from JRA committing itself to this project. 32. Also on the same point surrounding roads are identified as single lane roads, but only intersections are mentioned as possible problem areas. None of the surrounding roads will be able to carry the increased traffic – they don't even have shoulders. 33. In spite of what is stated in this section, there is no public transport on any of the surrounding roads. Mentioning is made of BTR as an alternative, but COJ has nowhere in any of its proposed budgets, mentioned such a project. So the answer remains, there is no public transport 34. Gladly the author admits that major upgrades to the public transport system are needed, but again COJ stated objective of this development is not to spend additional money on	

No	NAME	DATE	COMMENT	RESPONSE
			infrastructure. Because of these negative conclusions, this project can be rejected just on the grounds of insufficient transport facilities. 35. Disagree totally with implication statement that roads can be accommodated when the township has been developed. Road network has to be in place before any development 36. We as residents are aware of the already strain placed on the current water supply and as suggested an upgrade is needed. This report has no indication by Johannesburg Water that the required upgrade to relieve the current constraints will be addressed. And for that matter there is also nothing mentioned about what Johannesburg Water will do to upgrade the system to cater for the new development 37. Upgrade and additional capacity to electrical substations has to be completed before any development takes place. The report by City Power states that the upgrade will only be finalised in March 2015 at a cost of R38,3 m. There is no such project approved or budgeted for by COJ 38. Point 11.1 Notification is also a joke. For the meeting held in April 2011, one single advert was placed in Beeld while the majority of the community are English speaking. According to law you also had to place adverts in an English newspaper and the Government Gasette. If such notices were placed , please include proof of that in your EAS. No notice was given for the meeting of 2 April 2012, only selective individuals were invited. We as community did all the advertising. 39. The statement that a BID document was distributed is also not true. The soccer club which is located on the proposed site, has not received such a notice and so has the majority of residents on the roads surrounding the development. Most of us only learned of this development months after the meeting 40. The 1995 court case where a verdict was handed down that no dwelling can be erected	

No	NAME	DATE	COMMENT	RESPONSE
			on this property is not mentioned anywhere in this report. For this development to continue that ruling has to be reversed. Why go through all the effort and rezoning if the obvious answer is that the property must stay as is because it was given to the community as an open area for futures generations to come?	
36	J Welsh (St Martins School)	02/05/2012	The school stands by it position, as stated in the letter of 27 June 2011, with its objection increased in line with the increase in proposed residential units that will be built in Moffat Park - from the original 2800 to the now stated figure of 5100. I trust that the School's position, that of objecting to the proposed development, has already been recorded.	
37	C De Oliveira (Southern Civic Association- in the process of being registered, formely known as the Linmeyer Action Group)	02/05/2012	1213 objections for the removal of restrictive condition + simultaneous rezoning of erf 1202 South Hills from “Public Space” to “Residential 1,2,3, educational, institutional, public road” and 1042 for the application for establishment of township – South Hills ext 2 have been lodged to date. 1. I hereby request a response to the written confirmation of the objections. 2. I hereby request the ROD (record of decision).	

No	NAME	DATE	COMMENT	RESPONSE
38	Beverly Turk (Ward Councillor)	03/05/2012	I am extremely concerned about this development, I have already stated mu reasons, which have mainly the following issues which I don't believe have been been taken into account:: The environment impact assessment has not taken into account the surrounding areas, it only talks to perhaps 4 streets... this development is going to affect roads right through the Southern part of Joburg, east to west and north to south The lack of proper infrastructure in the area, Jhb Water can only service 2000 homes at thisstage, as the towers spoken of, run dry o a regular basis As far the electricity is concerned, Wemmer cannot cope and certainly City Deep does not have the capacity for this. I don't believe that the hospital has been looked at and its medical supplies. The schools are over capacitated, and not coping with residents children at this stage. Lastly, but most importantly, the dishonesty in the way that this whole project has been handled by housing department and the lack of public participation by yourselves and housing. Also I don't believe that there is enough dedication to build good quality homes for this area, I have seen pictures, which I believe will never be built by the developers. Definitely lastly, I as a ward councillor, have to protect peoples property prices in the surrounding areas, The City of Johannesburg Housing Department definitely cannot run housing developments, South Hills and Moffat View are prime examples of their management. I have also been to Pennyville, to see the lack of maintainance, and the	

No	NAME	DATE	COMMENT	RESPONSE
			way the unit have degraded. I have tried to uplift the area, not pull it down. I seriously believe that 5161 unit are far to many for the space. Furthermore, should the development proceed I would like the following commitment from the developers:: Proper schools to be built, both a pre-primary, primary and high school, which need to be staffed by trained teachers with proper qualifications. The park which is precious to everyone be developed simultaneously to the whole project Quality should preceed quantity....	
39.	Andrew Barker	26/04/2012	Further to our letter of 7 July 2011 and a meeting of 22 February 2012, we thank you for the opportunity to review the Draft Environmental Impact Assessment (DEIA). In this regard, we wish to submit the following comments and observations for your consideration: **1. Sustainable development model** In our letter and meeting we confirm that we discussed a number of issues relating to the development. The key issue which we believe still needs to be addressed in terms of the EIA is to ensure that the development provides for a sustainable model for implementation and management of the public open space area into the future. We note that our initial submission and discussion with you stressed the importance of ensuring that the future development of the area provides capital and operational revenue for the on-going management and maintenance of the public open space. This has simply been noted and forwarded to the City for consideration. It is of concern that this alternative does not form a key component for consideration in your assessment and recommendations. We would suggest that the promotion of sustainable integrated management of the natural resources of the Moffat Park area should form a key component of the environmental impact assessment and resulting management plan. Apart from being noted as a comment and referred	

No	NAME	DATE	COMMENT	RESPONSE
			to the City, no attempt has been made in your assessment to identify and assess an economically and financially viable option. South Hills Project: Draft Environmental Impact Assessment: Submission of comments In addition, we would suggest that the Environmental Management Plan (EMP) should include stronger recommendations with regard to the future development, management and maintenance of the open space to ensure the environmental sustainability of the area. **2. Environmental Management Plan** It is our contention that the EMP is of a very generic nature and lacks any sensitivity towards the environmental and open space value and qualities of the site. In this regard, we again stress the need for the preparation and implementation of a comprehensive and relevant environmental management plan and, as we suggested, the possibility of initiating a biodiversity stewardship programme has not been fully considered. **3. Outcrops of the Mondeor Conglomerates of the Witwatersrand Supergroup** We note that the Mondeor Conglomerates were located on the site and identified as being of historical and cultural significance. However, in the EMP no consideration is given of their existence and suitable mitigating measures provided in either the construction or operational phases. **4. Restrictions and conditions relating to mining activities** As noted in our initial submission we would require that certain restrictions and conditions relating to the recognition of past present and future mining and possible associated impacts. This must be identified and included in the conditions of establishment and title deeds of any properties that are established in this area. This requirement has not been considered or accommodated.	

No	NAME	DATE	COMMENT	RESPONSE
			5. Alternative development options In evaluating and assessing this development at Moffat Park we recognise that there is a need to provide housing and social facilities for the local community. We also recognise that the process for the development of Moffat Park was initiated some years ago when the approach of the Council was to identify vacant areas of land and develop these for housing purposes. However, through the course of last year there was an extensive public community participation process and Council involvement in the preparation and development of the Joburg Growth and Development Strategy 2040 (GDS 2040). In this approved development strategy the City recognised the priority and importance of ensuring the long-term sustainability of biodiversity and delivery of ecosystem services. The importance of this was recognised to the extent that environmental considerations should lead rather than follow development processes. In view of this substantial shift in the importance of the recognition of environmental sustainability we would request that a serious consideration be given to meeting the housing and social facilities needs in another area. One such possibility could be "brown fields" development of areas currently undergoing urban decay and decline such as Rosettenville and surrounding areas. We would suggest that innovative development interventions in these areas that are undergoing urban degeneration and decline would be able to address the provision of new housing and accommodation and at the same time upgrade and improve degraded urban areas. This would be done through the upgrading of infrastructure and services and the provision of higher density housing and should be seriously evaluated as an alternative for this project. We believe that such development should be of greater value in terms of addressing the City's priority of a liveable city where the environment leads development. **6. Additional concerns** While we have focused on specific issues, there are a number of issues which we raised and which have also been raised by other IAP's and community representatives. These pertain to engineering and social services, the public participation process and the nature of the	

No	NAME	DATE	COMMENT	RESPONSE
			development. Without going into details, we would suggest that a number of these issues still require further examination and explanation as they are inadequately considered in the report. We wish to note that we reserve our rights regarding further contributions, comments and participation in this process for the environmental and town planning processes associated with this project. Please contact us should you require any further information or clarification regarding any of the points made in this submission. Again, we make ourselves available to assist and participate in the new process whereby a mutual understanding and acceptable solutions can be identified.	

NOTE:

The comments on the Draft Environmental Impact assessment is similar to the comments on the Scoping report and the Public Participation process of the Town Planning Application.

These issues are addressed by the specialists and in the financial agreement between the developers and the City of Johannesburg.

Summary of issues:

1. Are there enough available schools in the area
2. What will happen to the property values of adjacent land
3. Can the roads accommodate extra traffic
4. Retaining environmentally significant areas.
5. Providing usable open space

6. Sustainable management and maintenance of park and open spaces
7. Safety and security during and after construction
8. The large amount of residential units proposed
9. Alleged non-transparent manner in which the Department of Housing of the City of Johannesburg identified this site for social housing
10. Lack of Public Participation prior to Town Planning and EIA process

Implications:

The issues and responses as per the public participation report are to be reviewed and addressed as far as possible. I&APs are to be contacted and informed regarding the environmental process.

12.0 ENVIRONMENTAL COMPOSITE MAP

An Environmental Composite Map was configured to clearly understand the various environmental characteristics and areas of significance that could be taken into consideration. This map indicates the following in relation to the proposed development site:

- 1:100 year floodline delineation
- Contours
- High, medium and low ecological sensitivity
- Red data species with buffer areas.
- Wetland areas with buffers
- Ridge with buffer areas

Please refer to **Figure 12 – Environmental Composite**

13.0 DEVELOPMENT AREAS

A map showing the potential development areas was compiled from the information received. The following recommendations are made:

- The full extent of the 1:100 year flood line areas must be retained.
- The areas with slopes steep than 12 degees to be excluded from development.
- Highly sensitive areas, based on real findings, must be allocated for conservation. Areas that shows potential habitats for certain species, but where the particular species were not found, should be released for development.
- A follow up site assessment must be conducted to investigate the viability of the species to be adequately protected and retained given the provision of a 200 m buffer. Reduction of the buffer to 50m must be considered based on research that shows the most suitable buffer of the particular species in this particular location. Relocation and a well-financed maintenance and monitoring plan must be considered.
- The riverine area and its associated wetlands are not in dispute. However, during a follow up site visit and assessment the upland area, indicated as wet in the vegetation study, must be reassessed by a wetland specialist, since it is not considered to meet the criteria of a wetland.
- The area indicated by GDARD as a Class 3 Ridge, is in fact an inverted ridge, and should rather be considered a valley. A 50 m buffer is proposed to curb the edge effect of the development on the valley.
- Areas subject to mining activity must be excluded form development until further investigations and mining plans can be provided. These areas may in time become available.

These considerations thus provide the areas indicated on **Figure 13** as suitable for development.

Please refer to **Figure 13 – Development areas**

Figure 11 – Environmental Composite

Figure 12 – Development areas

14.0 ALTERNATIVES IDENTIFIED & MOTIVATION FOR PROPOSED DEVELOPMENT

The concept of Integrated Environmental Management suggests that an Environmental Impact Assessment process, to determine the possible impact of the proposed activity, should incorporate the consideration of feasible alternatives. A reasonable number of possible proposals or alternatives, to achieve the same objective should be assessed. The identification, description, evaluation and comparison of alternatives are important for ensuring a sound environmental scoping process.

Alternatives should be considered as a norm within the Environmental Process. These should include, as applicable, the demand alternative, scheduling alternative, land use alternative (including the NO-go option), location alternatives and service alternatives.

14.1 DEMAND ALTERNATIVES

Having regard to the size of the proposed development site (approximately 199.62 hectares), of which the majority is to be developed (the remaining to be a public open space), and the location within the City of Johannesburg: to develop the land as a mix use Township known as South Hills (Moffat Park) would align to the CoJ urgent needs which include the provision of Economic Development and Job Creation.

South Hills (Moffat Park) is earmarked for major expansions and development of a regional node. It follows that, in a general sense, the demand alternative only presents two logical alternatives namely:

- To retain the site as open land (the status quo); or
- To develop the land as a mix use development known as South Hills (Moffat Park) and provide additional housing, schools, business opportunities, etcetera, therefore increasing economic sustainability in the area.

The financial requirement that is necessary to maintain the area as a public open space is rising every year and it is becoming more and more difficult to keep the space free of criminal activities as well as squatters. It appears that, from a demand perspective, the alternative of developing the land as an infill portion in the area concerned would be appropriate.

14.2 PROCESS ALTERNATIVES

It would appear that the process relevant to the establishment of a development area can only be achieved by way of one of two alternatives, namely:

- An application in terms of the Development Facilitation Act, 1995 or alternatively (preferred alternative)
- An application in terms of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986)

Although the Town Planning and Townships Ordinance process is being followed, the value of the DFA principles have been realised and responded to. The end result in respect of either of the above-mentioned processes would be similar in that the development area will result in the transformation of a portion of land into a Mixed-use urban complex.

In a general sense, the Development Facilitation Act, 1995 promotes integrated planning and the consideration of all relevant aspects which underpin the development process when compared to the Ordinance. The development process per se (in a physical sense) does not offer viable alternatives to consider other than making reference to typical construction methods relevant to the building of roads, the laying of subterranean infrastructure and the like. Clearly, methods applied may involve more or less manual labour in certain circumstances. In the development proposal under consideration, manual labour will indeed be feasible having regard to the scale and extent of the development which, in turn, will enhance employment creation and should be preferred as the alternative construction method where practically possible.

14.3 SCHEDULING ALTERNATIVES

The development of a mix use/ residential development of the scale and nature proposed by the land development applicant is not specifically sensitive to weather patterns or cycles. There does not appear to be a more or less preferred time to undertake the physical development associated with a new urban complex in the form of road construction and the laying of infrastructure. Typically, the rainy season (spring and summer) may impact negatively on the construction related activities and may result in "down time". It follows that, if possible, the construction periods should accord with the winter months to avoid down time related to rain. Following this alternative it may also result in less of an impact on the possibility of top soil erosion during flash thunderstorms and increased runoff where new trenches lie exposed to the elements for a restrictive period of time. However, suitable mitigation methods can be employed to curb washing of storm water into sensitive wetland areas.

14.4 LOCATION ALTERNATIVES

Location alternatives for the proposed development, which constitutes mix uses/residential development such as the preferred activity alternative, include the following:

14.4.1 Inner-city location

An inner-city location would be environmentally and socially feasible, however economically unviable, provided that the same area extent of land be found available for development as inner-city resources are very scarce.

14.4.2 Suburban location

Not socially, environmentally or economically feasible due to the following:

- Not situated adjacent to primary movement corridors
- Not accessible to a range of socio-economic population groups
- Isolated nature of development and therefore not inclusive
- Contrasting densities and heights with regard to the mixed-use nodal development
- Availability of land at an affordable cost minimal

14.4.3 Urban edge / rural location

Although land is available in this location at a lower economic cost, this location is socially and environmentally less feasible due to the following:

- Lack of proximity to social amenities, services and infrastructure
- Locating a nodal development far from other urban facilities
- Loss of land that is environmentally / ecologically valuable
- Creation of urban sprawl

14.4.4 Infill development location (preferred)

This is the most preferred location type due to the balance achievable between social, environmental and economic requirements:

- The land belongs to the City of Johannesburg.
- Aligns to the prerequisites of the Johannesburg SDF
- Situated within the urban realm adjacent to existing and proposed urban infrastructure, service and amenities
- Socially inclusive due to its location to numerous communities and along public transport routes

14.5 LAND USE ALTERNATIVES

The following Land Use alternatives have been investigated

14.5.1 Alternative 1: No-go Option

This implies that the site be left as is and that no development or alteration be done. If this alternative is pursued the sites existing habitat will be retained. This option has the following drawbacks:
The potential to provide additional airport facilities, which appears to be in accord with the prevailing land use regime in the area and the thinking of the local municipality to the population, will be lost;

- The potential to provide additional housing, which appears to be in accord with the prevailing land use regime in the area and the thinking of the local municipality to the population, will be lost;
- A very viable opportunity to exploit the limited commercial opportunities in the area and creating jobs and income for the local market will be negated;
- Sports facilities will not be upgraded, schools will not be provided;
- The area will fall further in disrepair and the protection and appropriate management of the ecological significant areas will be negated; or
- Illegal squatters or vagrants will remain and inhabit the site.

Given the fact that the site will eventually degenerate if left unmanaged, and the fact that it is most likely unsuitable to be utilised for grazing or agricultural purposes due to its location, it is reasonable to state that the no-go option is less favourable than some of the other options presented. Furthermore, should this property not be developed it would be left as an isolated and disconnected land due to all the surrounding areas that have already received environmental authorisation and on which development will proceed.

14.5.2 Alternative 2: Low Density Development

This option will make provision for the subdivision into “Residential 1” (one dwelling per stand) erven only. The result of such a development will be a high income exclusive development where no social responsibility or economic sustainability and job creation can be considered. Limited ecological land will remain as all the land will be taken up by roads or erf portions.

14.5.3 Alternative 3: Light Industrial Development

The introduction of a light industrial development only, although suited to the general functioning and land uses of the surrounding urban environment and other light industrial areas, is considered unsuitable due to the following reasons:

- Over-saturation of a single-use activity
- Inappropriateness to the adjacent low-residential and medical activities and therefore does not respond to the immediate context and surrounding land-uses
- Lack of diversity and vibrancy associated with a mixed-use development
- Higher risk of pollution to the surrounding drainage lines and the wetland systems

14.5.4 Preferred alternative: Mix use / Residential Development

Mixed Use / Residential development with ample private open space in the form of a conservation and nature park area along the stream (preferred alternative). **Figure 2: proposed Layout** Although there are many parcels of land available in the City of Johannesburg area, the land under investigation is owned by the City. The proposed development will complement the existing residential land uses in the area, while being responsive to the ecological feature on the site, providing a private open space for recreation and conservation purposes. The proposed development supports the City of Johannesburg strategic objectives for creating infill development where appropriate.

The proposed development promotes the 2030 Vision for the City of Johannesburg including:

- Proactive absorption of the poor – The development of South Hills (Moffat Park) extension 2 take into account the needs of the poor and at the same time benefits the more effluent sectors of the economy.
- Balance and shared growth – Integrated development ensure a diverse range of sectors and a very strong domestic demand resulting in domestic investment, thus the number of participants with the economy increases.
- Facilitations social mobility – The improved structures through cross subsidisation of the proposed development will promote an upliftment of the poor.
- Settlement restructuring – The proposed development will provide the City of Johannesburg with the opportunity to relocate an informal settlement through the housing grants and rental opportunities created.
- Sustainability and environmental justice – The development will ensure te development of a public open space to conserve environmentally sensitive areas and create recreational facilities.
- Innovative governance solutions – Responsibility n housing provision and development of communities are taken by the City of Johannesburg through proper governance.

For further information please refer to **Annexure J – Town Planning Motivation**.

14.6 ALTERNATIVES FOR SERVICES AND OTHER LISTED ACTIVITIES

Table 9: Alternatives for services and other activities

INDICATE THE NUMBER AND DATE OF THE RELEVANT NOTICE:	ACTIVITY NO (S) (IN TERMS OF THE RELEVANT OR NOTICE) :	DESCRIPTION AND COMMENTS ON ALTERNATIVES
GN reg 544 Item 9 18 June 2010	The construction of facilities or infrastructure exceeding 1000 metres in length for the bulk transportation of water, sewage or storm water - (iii) with an internal diameter of 0,36 metres or more; or (iv) with a peak throughput of 120 litres per second or more, excluding where: such facilities or infrastructure are for bulk transportation of water, sewage or storm water or storm water drainage inside a road reserve; or where such construction will occur within urban areas but further than 32 metres from a watercourse, measured from the edge of the watercourse.	No alternative for this activity exists. The sewer reticulation system will be designed to take the capacity of sewer generated by the development and adequately transfer it to the existing sewer treatment plant. The pipe sizes will be selected to ensure adequate capacity to effectively transport all effluent. Applicable alternative: Selection of materials to be utilised and the location of the pipes.
GN Reg 544 Item 10 18 June 2010	The construction of facilities or infrastructure for the transmission and distribution of electricity outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or inside urban areas or industrial complexes with a capacity of 275 kilovolts or more	No alternative for this activity exists. The electricity to be provided to the new development area will be brought from an existing substation and will be done in a manner that is acceptable by the power provider. Either an underground power cables or overhead lines will be installed.
GN Reg 544 Item 11 18 June 2010	The construction of: (i) canals; (ii) channels; (iii) bridges; (iv) dams; (v) weirs;	There is no alternative for this listed activity. The stream on the southern side of the property may require this activity to be triggered. Municipal services such as storm water

INDICATE THE NUMBER AND DATE OF THE RELEVANT NOTICE:	ACTIVITY NO (S) (IN TERMS OF THE RELEVANT OR NOTICE) :	DESCRIPTION AND COMMENTS ON ALTERNATIVES
	(vi) bulk storm water outlet structures; (vii) marinas; (viii) jetties exceeding 50 square metres in size; (ix) slipways exceeding 50 square metres in size; (x) buildings exceeding 50 square metres in size; or (xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.	management and sewer reticulation will require entering the 32 m buffer of the wetland.
GN Reg 544 Item 18 18 June 2012	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from (i) a watercourse; (ii) the sea; (iii) the seashore; (iv) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater- but excluding where such infilling, depositing, dredging, excavation, removal or moving.	There is no alternative for this listed activity The stream running through the center of the property may require this activity to be triggered. Municipal services such as storm water management and sewer reticulation will require entering the 32 m buffer of the wetland.
GN Reg 544 Item 20 18 June 2012	The construction of a road, outside urban areas, (i) with a reserve wider than 13,5 meters or,	There is no alternative for this listed activity The improvement of adjacent roads will be required by the City and provincial Roads

INDICATE THE NUMBER AND DATE OF THE RELEVANT NOTICE:	ACTIVITY NO (S) (IN TERMS OF THE RELEVANT OR NOTICE) :	DESCRIPTION AND COMMENTS ON ALTERNATIVES
	(ii) where no reserve exists where the road is wider than 8 metres, or (iii) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice June of 2010.	Agencies.
GN Reg 544 Item 37 18 June 2010	The expansion of facilities or infrastructure for the bulk transportation of water, sewage or storm water where: (c) the facility or infrastructure is expanded by more than 1000 metres in length; or (d) where the throughput capacity of the facility or infrastructure will be increased by 10% or more– excluding where such expansion: (iii) relates to transportation of water, sewage or storm water within a road reserve; or (ii) where such expansion will occur within urban areas but further than 32 metres from a watercourse, measured from the edge of the watercourse.	No alternative for this activity exists. The sewer reticulation system will be designed to take the capacity of sewer generated by the development and adequately transfer it to the existing on site sewer treatment plant. The pipe sizes will be selected to ensure adequate capacity to effectively transport all effluent. Applicable alternative: Selection of materials to be utilised and the location of the pipes. Where stream crossings are required, they will be implemented according to the DWAF requirements.
GN Reg 544 Item 39 18 June 2010	The expansion of (i) canals; (ii) channels; (iii) bridges; (iv) weirs; (v) bulk storm water outlet structures; (vi) marinas; within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, where such	There is no alternative for this listed activity The stream through the center of the property may require this activity to be triggered. Municipal services such as storm water management and/or sewer reticulation will require working in or near the wetland.

INDICATE THE NUMBER AND DATE OF THE RELEVANT NOTICE:	ACTIVITY NO (S) (IN TERMS OF THE RELEVANT OR NOTICE) :	DESCRIPTION AND COMMENTS ON ALTERNATIVES
	expansion will result in an increased development footprint but excluding where such expansion will occur behind the development setback line.	
GN Reg 545 Item 47 18 June 2010	The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre - (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres – excluding widening or lengthening occurring inside urban areas.	There is no alternative for this listed activity The improvement of adjacent roads will be required by the City and provincial Roads Agencies.
GN Reg 545 Item 15 18 June 2010	Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more;	The total area of the proposed development site is approximately 199.62 hectares. Please refer to item 13.5 of this report for varying land use and layout options, as well as Table 10

15.0 COMPARISON OF ALTERNATIVE LAND USES

Please refer to the Table 10: Comparison of alternatives below, a comparison of the four alternative activities for the proposed development site with regards to layout and densities, engineering and design alternatives, road access, storm water management, waste collection, sewer disposal, impact on the surrounding environment and visual impact. Within this comparison it may be assumed that mitigation measures have been adequately implemented. The impact rating is as follows:

High - 5
Medium - 3
Low - 1
Lowest score - 8
Highest score - 40

Table 10: Comparison of alternatives

	Alternative 1: No-go	**Consequence or Impact Rating**	**Alternative 2: Low Density Residential**	**Consequence or Impact Rating**	**Alternative 3: Light Industrial**	**Consequence or Impact Rating**	**Preferred Alternative: Mix use / Residential Development**	**Consequence or Impact Rating**
Layout and densities	The site will remain as it currently exists. The potential for the site to fall into disrepair is high, along with inappropriate management / control and the potential for informal settlement invasion. The No-go option is not considered desirable.	Medium – 3 No improvements will be implemented.	A low density layout is monotonous and unresponsive to the SDF and will not create a balance between social, economic and environmental requirements for the growing urban environment.	High – 5 Due to lack of diversity and vibrancy and responsive-ness to city requirements	Monotonous and mono-functional. Unresponsive to the RSDF and will not create a balance between social, economic and environmental requirements for the growing urban environment.	High – 5 Due to lack of diversity and vibrancy and responsive-ness to city requirements	A mix use/Residential development with a layout that is responsive to the city requirements creating a balance between environmental, social and economic requirements. Optimal utilisation of land to promote an accessible development.	Low – 1 Urban design framework that responds to city requirements
Engineering and design	This alternative will not currently require upgrading of engineering services; however no upgrades will be implemented to the benefit of the surrounding area.	Med-low – 2 No improvements will be implemented	Structural and design aspects can be accommodated within this proposal. Positioning of services will be strategically planned according to the proposed layout to prevent further impacts	Med-low – 2 The systems will be designed to function optimally and measures can be implemented to ensure effective monitoring and maintenance	Structural and design aspects can be accommodated within this proposal. Positioning of services will be strategically planned according to the proposed layout to prevent further impacts	Med-low – 2 The systems will be designed to function optimally and measures can be implemented to ensure effective monitoring and maintenance	Structural and design aspects can be accommodated within this proposal. Positioning of services will be strategically planned according to the proposed layout to prevent further impacts	Med-low – 2 The systems will be designed to function optimally and measures can be implemented to ensure effective monitoring and maintenance

	Alternative 1: No-go	Consequence or Impact Rating	Alternative 2: Low Density Residential	Consequence or Impact Rating	Alternative 3: Light Industrial	Consequence or Impact Rating	Preferred Alternative: Mix use / Residential Development	Consequence or Impact Rating
			on the environment.		on the environment.		on the environment.	
Road access	To remain as existing. No upgrades will be required and implemented.	High – 5 No improvements will be implemented in an area that desperately requires road upgrades	Minimum upgrades to entrances and accesses according to the traffic engineering report. Limited public transport improvement and accessibility due to gated community.	High – 5 Due to gated community structure in an area that should be accessible	Entrances and accesses as well as road upgrades according to the traffic engineering report.	Med-low – 2 Increase in traffic to be accommo-dated due to surrounding road upgrades	Upgrades of 5 intersections. Entrances and accesses as well as road upgrades according to the traffic engineering report.	Med-low – 2 Increase in traffic to be accommo-dated due to surrounding road upgrades
Stormwater management	The storm water is currently managed as sheet flow. The site drains naturally towards the streams which which borders the flow. Better management options could be implemented to prevent erosion.	Medium – 3 No storm water management	Storm water management via a storm water drainage system composed of storm water inlets and pipes along internal roads which connecting to attenuation structures. No water will be released into natural systems without retention and slowing down of the water. Accumulated storm water can be utilised for irrigation of open spaces.	Medium – 3 Effective storm water manage-ment can be implemented	Storm water management via a storm water drainage system composed of stormwater inlets and pipes along internal roads which connecting to attenuation structures. No water will be released into natural systems without retention and slowing down of the water. Accumulated storm water can be utilised for irrigation of open spaces.	Med Low – 2 Effective storm water manage-ment can be implemented	Storm water management via a storm water drainage system composed of stormwater inlets and pipes along internal roads which connecting to attenuation structures. However, storm water will be drained in a north-south direction and no provision has been made for stormwater retention.	Med Low – 2 Effective storm water manage-ment can be implemented
Waste collection	No waste management strategies are currently being implemented.	High – 5 No improvements will be implemented. Illegal dumping will continue	Refuse removal to be provided by the Johannesburg Municipality, however waste is to be minimised by the provision of waste transfer stations	Med-low – 2 Effective waste management due to structure and management by Body Corporate.	Refuse removal to be provided by the Johannesburg Municipality, however waste is to be minimised by the provision of waste transfer stations	Med-high – 4 Due to hazardous waste risk	Refuse removal to be provided by the Johannesburg Municipality, however waste is to be minimised by the provision of waste transfer stations	Med-low – 2 Effective waste management due to structure and management by individual land parcels
Sewer disposal	No additional requirement.	Medium – 3 No improvement to	Improvement of municipal sewage reticulation system.	Medium – 3 Less time for	Improvement of municipal sewage reticulation system. Increase on	Medium – 3 Phased nature of	Improvement of municipal sewage reticulation system.	Medium – 3 Phased nature of

	Alternative 1: No-go	Consequence or Impact Rating	Alternative 2: Low Density Residential	Consequence or Impact Rating	Alternative 3: Light Industrial	Consequence or Impact Rating	Preferred Alternative: Mix use / Residential Development	Consequence or Impact Rating
		system in the area	Increase on load.	expansion due to probably once-off roll out	load.	development will ensure the correct and timeous planning associated with the potential requirements for upgrading of sewer system	Increase on load	development will ensure the correct and timeous planning associated with the potential requirements for upgrading of sewer system
Impact on surrounding environment	No change expected other than the potential degradation that could be resultant of poor site management and illegal informal occupation.	Med – 3 No change, however possibility of illegal squatters and illegal dumping	Impact on the ecological environment is mitigated due to the provision of adequate open space for ecological connectivity and preservation. No surrounding community benefit as the development will most likely be gated and inaccessible with no economic and social facilities that are available for surrounding neighbourhoods.	High – 5 A definite change in land use, although strict access control with no surrounding community access	Impact on the ecological environment is mitigated due to the provision of adequate open space for ecological connectivity and preservation. Great pollution hazard of surrounding environment.	Med-high – 4 A definite change in land use No accessible social or economic facilities for surrounding community	Impact on the ecological environment is mitigated due to the provision of adequate open space for ecological connectivity and preservation. The community will benefit due to the provision of various commercial enterprises, the improvement of bulk infrastructure as well as various job opportunities.	Med-low – 2 A definite change in land use, along with a mix of economic and social land uses that will benefit surrounding community
Visual impact	Visual impact will not change.	Low – 1	Unilateral and monotonous mass of development. Lack of diversity and vibrancy	Med – 3 Can potentially be mitigated with greening	Visual impact of monotonous industrial activities. Haphazard building forms, materials and colours. Due to the land use type not much aesthetic design detail is considered. High lighting pollution.	High – 5 Can be mitigated via strict design guidelines	Vibrancy and diversity associated with mixed-use character under an umbrella of guidelines (materials, lighting, greening, forms, etc)	Med-low – 2 Architectural guidelines and aesthetic require-ments
IMPACT SCORE		25		27		28		**17**

16.0 POTENTIAL IMPACTS

16.1 METHODS USED TO IDENTIFY POTENTIAL IMPACTS

A combination of the following methods was used to identify impacts during the Scoping and EIA Processes:

16.2 SPECIALIST STUDY FINDINGS

All the legally required specialist studies were conducted (as required by GDARD as per DEA guidelines). Often more than one study was conducted in the same discipline to verify or to supplement findings. The findings of such specialist studies highlighted potential impacts on protected or endangered species and/or environments. The following shows a list of the impacts according to specialist studies:

Table 11: Possible impacts according to specialist studies

SPECIALIST STUDY	IMPACT IDENTIFICATION
Flora	The site consists of mostly natural vegetation. There are some degraded areas on site and various pathways across the site, and the vegetation shows signs of over exposure to fire. The most prominent degradation on site is the dense alien infestation within the central drainage line. The vegetation types on the site can be divided into several different habitat types namely: rocky areas, rocky grassland, grassland, wetlands and riparian and degraded grassland. Species richness in the grassland vegetation of the study area is relatively high. A total of 105 species were recorded on the site during the brief survey, 6 of which are exotic and an additional 9 of which are declared weeds or invader plants. The proportion of naturalized exotic and invader species is low (14%) despite the high levels of disturbance of the habitat of some parts of the site. There are 21 Red or Orange List plant species that have been recorded from the quarter degree grids in which the site is situated. Of these 21 species, nine were considered to have a high chance of occurring in the type of habitats available on site and **one species was found** on site, namely *Khadia beswickii*. The riparian vegetation in the wetland area was heavily altered because of the presence of invader plant species along most areas of the watercourse. Due to the bare soils and low percentage of ground cover underneath these invaders and the storm-driven ephemeral nature of the watercourse in the southern regions of the site, the levels of erosion was very high along many areas of the watercourse.
Fauna	The site is considered to have habitat suitable for a number of species of conservation concern. Topographically the site holds a Class 3 ridge according to the Ridges v.6 shape files model, which stems from the southern border of the site and extends to the centre. The geology of the ridge gives rise to large rocks and boulder like structures, with many crevices, gaps and hollows between them. Such large rocks provide valuable and irreplaceable shelter to many plants and animals, either harsh environmental conditions or predators. The fact that fire usually doesn't enter between the crevices of rocky boulders and tends to move swiftly in

SPECIALIST STUDY	IMPACT IDENTIFICATION
	the grasslands, makes rocky ridges ideal habitat for more fire sensitive species of fauna and flora. Also, microclimates are created in between or behind large rocks where the amount of sunlight is limited and moisture tends to persist longer. The ridge and surrounding grassland is potential suitable habitat for the protected lepidopteran, *Aloeides dentatis dentatis*. These habitats may also be suitable for South African Hedgehog (*Atelerix frontalis*). **No RDL faunal species were observed** during the field survey of the proposed development area, but the following species of concern have a medium to high propability of occurring on the site, namely *Atelerix frontalis* (South African Hedgehog), *Mystromys albicaudatus (*White tailed mouse), *Eupodotis caerulescens* (Blue korhaan), *Falco naumanni* (Lesser Kestrel), *Circus ranivorus* (African Marsh Harrier), *Aloeides dentatis dentatis* (Roodepoort type), *Aloeides dentatis dentatis* (Suikerbosrand type) and *Metisella meninx.*
Geotechnical	No adverse conditions which prohibit the construction of structures associated with the development of a mix use/residential development were found.
Agricultural Potential	According to the Gauteng Agricultural Potential Atlas (GAPA Version 3), the proposed development site is not situated within a region delineated as an Agricultural Hub.
Cultural Heritage	Various sites of cultural significance were identified namely outcrops of the Mondeor conglomerates of the Witwatersrand Supergroup occurs on the site and as type-site it is used by geologists in the interpretation of the geology of the Witwatersrand goldfields, two sites used by adherents of the Apostolic faith were identified and at least one of these is still actively being used and two informal dump sites of unknown date were identified. The geological site is viewed to have a high significance on a regional level and should be avoided at all costs. The two sites used by adherents of the Apostolic faith are viewed to have a high significance on a local level. The two informal dump sites are viewed to have a medium significance on a regional level and test excavations should be done on them by a suitably qualified archaeologist.
Traffic Impact	The proposed public transport infrastructure for the proposed development is expected to facilitate a high level of public transport service provision. Public transport patronage is however dependent on many factors including frequency of services, connectivity to origins and destinations elsewhere, integration with other public transport nodes such as Gautrain and BRT, journey duration and quality of service.
Services provision	Bulk services are available, or will be available along with required upgrades. The appropriate links will be installed to these services. Communication with the applicable municipal departments will be maintained to ensure adequate supply plans without hindering the supply to the surrounding areas.

Site Inspection
The environmental consultant and specialists conduct several site visits and identified potential sensitive environments. These areas are then red-flagged to be investigated further and excluded from development.

Desktop Studies
Specialist reports such as the geotechnical and agricultural assessments are used to identify those areas and aspects that may be impacted on, but that will not be identified through the other specialists' studies.

Public Participation
Conducting public participation produces an issues list. Such a list needs to be screened for relevant impacts which then need to be addressed by specialist studies or identified for further investigation. A very comprehensive public participation process was followed, including a public meeting.

GDARD Policies, Review / Terms of Reference
GDARD C-Plan 3 as well as the policies provides the red flags that must be investigated by the specialists. Furthermore, the GDARD officials and the different sub-directorates within the department review the application and give comments to the relevant environmental officer. The issues identified are forwarded to the environmental consultant and these issues are addressed or translated as impacts.

16.3 IMPACT IDENTIFICATION

Environmental impacts can be classified according to physical impacts, bio-physical impacts and socio-economic impacts and can occur during the construction and / or operational phases.

16.3.1 Physical Impacts

- Geological impacts
- Topographical impacts
- Air quality
- Soil and land capability
- Water quality and availability – surface and ground water

16.3.2 Biophysical

- Impacts on flora and flora habitats
- Sensitive landscapes (wetlands and flood plains)

16.3.3 Socio-economic Impacts

- Noise pollution
- Visual impact
- Sites of cultural significance
- Safety and security
- Impact on ambience of the area
- Traffic increase on roads

- Services being inadequate and malfunctioning (including electricity, waste management, water, sewage management systems)
- Run away fires due to poor fire management and lack of capacity to fight fires.
- Improved tax base
- Bulk contributions which result in the improvement of infrastructure in the area

16.4 ASSESSMENT OF IMPACTS

16.4.1 Definition of terms

Construction Phase: All construction or related activities, from occupation by the contractor, until the contractor leaves the site.
Operational Phase: All activities related to and including the operation and maintenance of the proposed development.
Nature: The type of effect the specific activity will have on the environment
Probability: Degree of certainty of impacts
Duration: Lifetime of the impact
Scale: Spatial scale of the impact
Magnitude: Degree/severity of impact

16.4.2 Methodology

The significance of the identified impacts will be determined using the approach outlined below. This incorporates two aspects for assessing the potential significance of impacts (terminology from the Department of Environmental Affairs and Tourism Guideline document on EIA Regulations, April 1998), namely occurrence and severity, which are further sub-divided as follows:

Table 12: Methodology to Assess Impacts

Occurrence		Severity	
Probability of occurrence	Duration of occurrence	Magnitude (severity) of impact	Scale / extent of impact

To assess each of these factors for each impact, the following four ranking scales are used:

Probability	Duration
5 – Definite/don't know	5 – Permanent
4 – Highly probable	4 – Long-term
3 – Medium probability	3 –Medium-term (8-15 years)
2 – Low probability	2 – Short-term (0-7 years) (impact ceases after the operational life of the activity)
1 – Improbable	1 – Immediate
0 – None	

Scale	**Magnitude**
5 – International	10 – Very high/don't know
4 – National	8 – High
3 – Regional	6 – Moderate
2 – Local	4 – Low
1 – Site only	2 – Minor
0 – None	

Once these factors are ranked for each impact, the significance of the two aspects, occurrence and severity, is assessed using the following formula:
SP (significance points) = (probability + duration + scale) x magnitude
The maximum value is 150 significance points (SP). The impact significance will then be rated as follows:

SP >75	Indicates **high** environmental significance	An impact which could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
SP 30 – 75	Indicates **moderate** environmental significance	An impact or benefit which is sufficiently important to require management and which could have an influence on the decision unless it is mitigated.
SP <30	Indicates **low** environmental significance	Impacts with little real effect and which should not have an influence on or require modification of the project design.

16.5 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Please refer to **Table 13** which indicates the quantification of impacts related to construction activities and **Table 14** which indicates the quantification of impacts related to the operational activities, as per the methodology identified above.
Also please refer to Annexure K for the Draft Environmental Management Plan (EMP).

Legend:	M:	Magnitude of impact	High	>70	**SBM**: Significance Before Mitigation
	D:	Duration of impact	Mod.	30 -70	**SAM**: Significance After Mitigation
	S:	Scale of impact	Low	0 - 30	
	P:	Probability of unmitigated occurrence occurring			

16.5.1 Construction Phase

Table 13: Quantification of impacts related to construction activities

Environmental Component	Activity	Potential Impact	Environmental Significance Score							Mitigation Measures
			P	D	S	M	Total	Rating		
16.5.1.1	***Physical Impacts***									
Geology	There are no expected construction related impacts on the geology of the proposed development site and surrounding areas									• None, although geological monitoring should commence during the Construction Phase by the Geotechnical engineer
Topography	Construction activities including levelling of road and building surfaces	Erosion	4 3	2 2	2 1	6 4	48 24	SBM SAM	M L	• Demolition and construction activities should preferably take place during the dry months • All surface run-offs shall be managed in such a way so as to ensure erosion of soil does not occur • All surfaces that are susceptible to erosion shall be covered with a suitable vegetative cover as soon as construction is completed • Where erosion may potentially occur, dissipaters such as gravel beds or straw bales must be installed to prevent erosion. • For further information please refer to the Draft EMP (Annexure K)
Air quality	Construction activities and vehicles on site.	Dust pollution that affects adjacent developments.	3 2	2 2	2 1	6 4	42 20	SBM SAM	M L	• Dust to be minimised by spraying down (water truck) of construction site daily
Soils and land capability	Site clearance for road construction and construction of units and other structures	Compaction of topsoil	4 2	2 2	1 1	6 4	42 20	SBM SAM	M L	• The top (200-300mm) layer (as applicable) of all areas to be excavated for the purposes of construction shall be stripped and stockpiled in areas where this material will not be damaged, removed or compacted. • This stockpiled material shall be used for the rehabilitation of the site. • Weeds appearing on the stockpiled topsoil shall be removed by hand before seeding. • For further information please refer to the Draft EMP (Annexure K)

Environmental Component	Activity	Potential Impact	Environmental Significance Score							Mitigation Measures
			P	D	S	M	Total	Rating		
	Site vehicles and storage of fuel on site	Contamination by fuel and lubricant spillages from vehicles	3 2	2 2	1 1	5 4	30 20	SBM SAM	M L	• Provision of proper re-fuelling and maintenance facilities and procedures will reduce the likelihood of soil contamination • For further information please refer to the Draft EMP (Annexure K)
Water quality and availability	Storage of fuel and re-fuelling of construction vehicles	Fuel or chemical spillage and pollution of surface and/or ground water	3 1	2 2	2 2	6 4	42 20	SBM SAM	M L	• Good housekeeping by contractor • Store new and used oils in bunded areas • No co-handling of reactive liquids or solids should be allowed • Create and monitor an inventory of chemicals held on site • For further information please refer to the Draft EMP (Annexure K)
	There will be no construction related impact on the quantity of groundwater available to surrounding borehole users									• None, although groundwater monitoring should commence during the Construction Phase
16.5.1.2	***Biophysical Impacts***									
Flora	Site clearing for construction activities	Loss of species diversity and habitat characteristics	5 4	2 2	1 1	10 8	80 56	SBM SAM	H M	• Most of the site will be transformed due to the requirement to develop this site as a regional node • The Environmental Control Officer (ECO) is to be trained to be able to identify any possible red data species • Set up a planting list together with the ecologist from which all rehabilitation in the development must be done – only indigenous and non-invasive species • For further information please refer to the Draft EMP (Annexure K)
Fauna	Site clearing for construction activities	Loss of species diversity and habitat characteristics	5 4	2 2	1 1	10 8	80 56	SBM SAM	H M	• Most of the site will be transformed due to the requirement to develop this site as a regional node • The riparian zones with associated floodlines to be retained • The Environmental Control Officer (ECO) is to be trained to be able to identify any possible red data species • For further information please refer to the Draft EMP (Annexure K)

Environmental Component	Activity	Potential Impact	Environmental Significance Score							Mitigation Measures
			P	D	S	M	Total	Rating		
Sensitive landscapes	Construction activities – wetland and associated buffer areas	Loss of valuable landscape and habitat	4 2	3 3	1 1	8 4	64 24	SBM SAM	M L	• The sensitive drainage line areas adjacent and off the proposed development site are to be fenced off from all construction activities • For further information please refer to the Draft EMP (Annexure K)
Conservation	Delineation of conservation area – wetland areas and associated buffers	Conservation and maintenance of valuable landscape and habitat – benefit to local and regional biodiversity by minimising fragmentation of ecological systems	3 4	2 2	2 3	4 6	28 42	SBM SAM	L M	• Delineation of the conservation area prior to commencement of construction activities • Education of construction workers regarding the value of the conservation area
16.5.1.3	***Socio-economic Impacts***									
Noise pollution	All construction activities	Nuisance to surrounding land owners	4 3	3 3	2 1	6 4	54 28	SBM SAM	M L	• Locate noisy machines and equipment maintenance areas as far away from sensitive receptors as possible • Adherence to acceptable working hours • Adherence to Occupational Health and Safety Act • Ear protection for workers that may be affected by noise • For further information please refer to the Draft EMP (Annexure K)
Visual integrity	Construction activities	Visibility of dust and construction activities from surrounding	3 2	3 3	2 2	6 4	48 28	SBM SAM	M L	• Apply dust control measures diligently, especially on provincial roads • Apply recommendations of specialist regarding colour and construction of site structures during the Construction Phase

Environmental Component	Activity	Potential Impact	Environmental Significance Score							Mitigation Measures
			P	D	S	M	Total	Rating		
		roads, properties and tourist locations								
Sites of cultural significance	No areas of cultural significance were found on the proposed development site									• Should any potentially culturally significant artefacts or graves, etc be found during construction activities all activities should be stopped until an assessment by a Cultural Heritage practitioner has been completed • For further information please refer to the Draft EMP (Annexure K)
Safety and security	Construction workers in the area	Increase in crime in area and increase in squatters of vacant land	4 2	3 3	3 2	8 4	80 28	SBM SAM	H L	• Proper management and planning • No construction work will be allowed on Sundays • A limited number of workers along with security guards will be allowed to sleep on site, however within a cordoned-off secure area • All staff will carry identification, access control will be enforced and the site will be swept and a search will be done each night • The development will have 24-hour access control and security • A CLO (Community Liaison Officer) should be employed • For further information please refer to the Draft EMP (Annexure K)
	Construction works	Migration of job seekers into the area in search of employment	3 2	3 3	2 2	6 4	48 28	SBM SAM	M L	• No on-site recruitment is to take place • The CLO (Community Liaison Officer) to be consulted regarding employment of members of the surrounding communities.
		Increase in construction traffic	4 3	3 3	3 2	8 4	80 32	SBM SAM	H M	• The access of large trucks will be investigated to provide a suitable access route that does not become a nuisance to existing residents • Only a specified number of trucks at any one time will be allowed onto the property • Construction vehicles and activities must aim to avoid peak hour traffic times (weekdays 7-8am and 5-6pm) • Establish an all-weather site access and wheel wash or shake down to prevent soil and materials from being trekked onto the road

Environmental Component	Activity	Potential Impact	Environmental Significance Score							Mitigation Measures
			P	D	S	M	Total	Rating		
		Decrease in safety due to increased traffic	4 3	3 3	2 2	10 6	90 48	SBM SAM	H M	• Security fencing and barriers • Perimeter fence patrols
Local services	Construction activities that utilise local services	Inadequate service provision to adjacent properties and malfunctioning of services	2 1	3 3	2 2	4 2	28 12	SBM SAM	L L	• The service systems are to be designed according to the minimum requirements of, and submitted to the Local authority for approval. • No construction activities must commence on site prior to obtaining the necessary approval
Fire	Cooking fires by construction workers	Veld fires	3 1	3 3	3 2	6 4	54 24	SBM SAM	M L	• A designated area shall be assigned for fire making by the construction workers, so as to ensure that run-away veld fires do not occur • This will reduce air pollution by excessive smoke
Improved tax base for local municipality	Employment of construction workers	Decrease in unemployment and crimes related to unemployment	4 5	3 3	2 2	8 8	72 80	SBM SAM	M H	• Local labour to used as far as possible for the installation of services and the construction of the retirement village and associated infrastructure • Local training and capacity building programmes • Construction timeframe could be lengthy due to the extent and phased nature of the proposed development
		BEE development opportunities	2 3	3 3	2 2	4 6	28 48	SBM SAM	L M	• Contract requirements to involve and train BEE companies
	Local demand for goods and services	Decrease in unemployment and empowerment of local trade and industry	2 3	3 3	2 2	4 6	28 48	SBM SAM	L M	• Local products, goods and services to be utilised as far as possible during the construction phase • Local training and capacity building programmes

16.5.2 Operational Phase

Table 14: Quantification of impacts related to the operational phase

Environmental Component	Activity	Potential Impact	Environmental Significance Score							Mitigation Measures
			P	D	S	M	Total	Rating		
16.5.2.1	***Physical Impacts***									
Geology	There are no expected operational related impacts on the geology of the proposed development site and surrounding areas									• None, although geological monitoring should possibly commence during the Construction Phase by the Geotechnical engineer.
Topography	Construction activities including levelling of road and building surfaces continued during operational phase	Erosion	4 3	2 2	2 1	6 4	48 24	SBM SAM	M L	• Demolition and construction activities should preferably take place during the dry months. • All surface run-offs shall be managed in such a way so as to ensure erosion of soil does not occur. • All surfaces that are susceptible to erosion shall be covered with a suitable vegetative cover as soon as construction is completed. • Where erosion may potentially occur, dissipaters such as gravel beds or straw bales must be installed to prevent erosion. • For further information please refer to the Draft EMP (Annexure K)
Air quality	Construction activities and vehicles on site continued during operational phase	Dust pollution that affects adjacent developments								• Roads will be paved and dust will thus be eliminated
Soils and land capability	There are no expected operational related impacts on soils and land capability of the proposed development site and surrounding areas									• Weeds appearing on the area must be maintained and eradicated • For further information please refer to the Draft EMP (Annexure K)

Environmental Component	Activity	Potential Impact	Environmental Significance Score							Mitigation Measures
			P	D	S	M	Total	Rating		
Water quality and availability	General usage of water (household, business, irrigation, etc)	Water wastage	4 2	4 1	3 2	6 4	66 20	SBM SAM	M L	• Waste water to be recycled and re-used as far as possible to ensure that minimum amounts are required for aspects like irrigation. • Good monitoring and management measurements to be set in place by facilities managers
	Malfunctioning of sewage treatment plant or any other serious pollution event	Water pollution	3 2	3 2	3 1	8 6	72 30	SBM SAM	H M	• Adequate measures to be put in place to prevent surface and groundwater contamination of any kind – responsibility of civil engineers • No French drains allowed • All sewage infrastructure is to be maintained and checked at yearly intervals • A plan should be put in place that caters for the event of a large fuel spill in the water – to form part of the recommendations of the RoD by GDARD
	There will be no operational activities that should impact on the quantity of groundwater available to surrounding borehole users									
16.5.2.2	***Biophysical Impacts***									
Flora	General human interference and impact	Loss of species diversity and habitat characteristics	4 2	4 1	1 1	6 4	54 16	SBM SAM	M L	• Walkways throughout the open spaces and conservation zones will be strategically placed and users will be enforced to only use delineated walkway areas so as not to damage surrounding habitats • Landscaping guidelines which include an allowable indigenous vegetation list that attracts fauna is to be formulated and made a condition of sale • No exotic vegetation will be allowed

Environmental Component	Activity	Potential Impact	Environmental Significance Score							Mitigation Measures
			P	D	S	M	Total	Rating		
Fauna	General human interference and impact	Loss of species diversity and habitat characteristics	4 2	4 1	1 1	6 4	54 16	SBM SAM	M L	• Walkways throughout the open spaces (drainage line area) will be strategically placed and users will be enforced to only use delineated walkway areas so as not to damage surrounding habitats • Landscaping guidelines which include an allowable indigenous vegetation list that attracts fauna is to be formulated and made a condition of sale • Minimal to no exotic vegetation will be allowed
Sensitive landscapes	General human interference and impact	Loss of valuable landscape and habitat associated to drainage line to the west of the proposed development site	4 2	4 1	1 1	6 4	54 16	SBM SAM	M L	• Walkways through sensitive landscapes will be strategically placed and users will be enforced to only use delineated walkway areas so as not to damage surrounding habitats
Conservation	Delineation of conservation corridor associated to floodlines – western drainage corridor	Rehabilitation, conservation and maintenance of this landscape and habitat – benefit to local and regional biodiversity by minimising fragmentation of ecological systems	2 4	1 4	2 5	4 8	20 88	SBM SAM	L H	• Conservation management to be done in collaboration with the local municipality

Environmental Component	Activity	Potential Impact	Environmental Significance Score							Mitigation Measures
			P	D	S	M	Total	Rating		
16.5.2.3	***Socio-economic Impacts***									
Noise pollution	As the site will be established and due to the airport activities related to the operational phase no major impacts are expected, however, due to the phased nature of the project construction activities will continue for a lengthy period									• Please refer to the noise mitigation measures during construction phase (**Table 14**), as well as the Draft EMP (Annexure K)
Visual integrity	Higher density caused by development and change in land use	Change in sense of place of the specific site, however appropriate and good design will result in an improved urban character and will positively enhance the site and surrounding urban context potentially raising economic value of surrounding areas	4 3	4 4	2 2	8 4	80 36	SBM SAM	H M	• Architectural guidelines (including aspects of roof and wall finishes, colours, heights of buildings, and lighting), as well as Landscape Architectural guidelines (screening, buffering, functioning, aesthetics etc) for the development will be developed to promote the enhancement of this urban area and therefore creating new and valuable places with a modified and positive urban mixed-use sense of place that is vibrant and diverse
Sites of cultural significance	Some areas of cultural significance were assessed on the proposed development site and should be investigated further.									• Should any potentially culturally significant artefacts or graves, etc be found during the operational phase, the development management is to be informed and a Cultural Heritage practitioner is to be contacted to decide on a way forward

Environmental Component	Activity	Potential Impact	Environmental Significance Score							Mitigation Measures
			P	D	S	M	Total	Rating		
Safety and security	Active operational phase with variety of functions and activities ranging from residential, business and commercial	Decrease in crime due to the creation of a more secure environment and minimising of vacant land	2 4	2 4	1 2	4 8	20 80	SBM SAM	L H	• Security provided via passive surveilllance • Appropriate environmental design to address safety and security issues (CSIR publication) • Good accessibility for emergency and police services
Traffic increase	Increase of residents and users of the area	Additional vehicles on road	4 3	4 3	3 2	8 4	88 24	SBM SAM	H L	• All requirements of local municipality to be adhered to • All improvements to road infrastructure as recommended by traffic engineer to be adhered to
Local services	Operational activities not to influence the availability of services to surrounding land owners									• The engineers compiling the services report and designing services are to ensure that adequate measures are in place to ensure adequate service delivery that does not influence surrounding areas • All requirements by local municipality to be adhered to regarding service reticulation and delivery
Fire	There are no expected operational related occurrences other than normal urban activities that may result in site fires.									• Adequate positioning of fire hydrants according to CoJ standards.
Improved tax base for local municipality	Employment of workers during the operational phase – business sector, landscaping and maintenance, cleaning, medical staff, etc.	Decrease in unemployment and crimes related to unemployment	4 5	2 4	2 3	4 8	32 96	SBM SAM	M H	• Local labour and employees to be made use of as far as possible for all aspects of the operational phase • Local training and capacity building programmes

Environmental Component	Activity	Potential Impact	Environmental Significance Score							Mitigation Measures
			P	D	S	M	Total	Rating		
		BEE development opportunities	2 3	2 4	2 2	4 6	24 54	SBM SAM	L M	• BEE companies to be trained and involved in during the operational phase of the development – e.g. Management of retail facilities, maintenance, landscaping, etc.
	Local demand for goods and services	Decrease in unemployment and empowerment of local trade and industry	2 3	2 4	2 2	4 6	24 54	SBM SAM	L M	• Local products, goods and services to be utilised as far as possible during the operational phase – shops, frail care centre, craft centre, etc. • Local training and capacity building programmes
	Increase in service delivery and number of erven	Increase in taxes raised on property								• None required
Bulk Contributions	Improvement of infrastructure	Increased service provision, minimisation of traffic congestion								• Should we well planned and strategically implemented in coordination with the City of Johannesburg and GAUTRANS

17.0 CONCLUSIONS

The development proposal has no fatal flaws in terms of the institutional, bio-physical or socio-economic environments. In fact, it is believed that the proposed development compliments the required and desired balance to be achieved between socio-economic and ecological / environmental factors.

The key issue possible impact is the destruction of sensitive / significant environments. New urban parks are to be created with focus on the recreation of green spaces with high ecological value. One geologically significant area was found on the proposed development site.

The key issue related to land use has been addressed and the preferred alternative is recommended due to the balance that is retained between ecological and socio-economic factors, which align to the City of Johannesburg's Regional Spatial Development Framework which mentions the proposed development as a future regional node.

Risks and potential impacts related to the construction and operational phases have been addressed within the quantification of impacts process. The EMP should be strictly adhered to, therefore mitigating impacts as far as possible.

It is undeniable, that the proposed development has an optimal location within the urban realm adjacent to existing urban amenities, services and infrastructure and that it is a logical area for infill development, especially with regard to the environmental authorisations that have been obtained for all the areas surrounding the proposed development site. Should this site not be developed, it will remain as an isolated and unconnected land area that will be vulnerable to crime and potential illegal informal occupation.

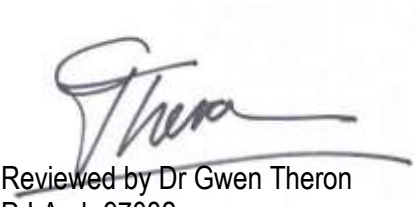
18.0 RECOMMENDATIONS

It is recommended that the 'Mix use/Residential Development' option which has been identified as the preferred alternative is used. It is further recommended that this application be approved with the following conditions:

- All requirements from the Joburg Municipality be adhered to including:
- Engineering services report addressing provision of services.
- Conditions and recommendations by the Engineering Geologists be adhered to
- All other state departments' comments and input be adhered to, including but not limited to:/
  - Department of Water Affairs and Forestry
  - South African Heritage Resource Agency
- All mitigation measures as described in this report and specialist reports are adhered to by the developer (these measures will be made part of the EMP).
- The conditions of the Record of Decision from GDARD be written into the EMP and be implemented as such.

- The EMP, as attached to this document, and as amended after the EA is received, should be made part of the contractual documents of contractors. The project manager must also account for the cost of this document's implementation before construction takes place.
- An Environmental Control Officer (ECO) should be appointed to audit the EMP on a bi-weekly basis during construction phase.
- A penalty system is set up for non-compliance to the EMP to be severe enough to practically control construction and operational activities on site.
- The EMP must be made issued to individual stand developers for implementation
- That the surrounding community be kept up date through the Town Planning Application process and during Construction Phase of the project.

Prepared by Jitske Botes



Reviewed by Dr Gwen Theron
PrLArch 97082
7 March 2012

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