

**THE PROPOSED MIXED-USE RESIDENTIAL
DEVELOPMENT ON PORTION 1 AND THE
REMAINDER OF FARM SIMS NO.462, KURUMAN
RD, KATHU, NORTHERN CAPE**

FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT
For comment

EXECUTIVE SUMMARY



D:E&NC reference number: NC/EIA/10/JTG/GAM/KAT2/2014

OCTOBER 2017

SISHEN IRON ORE COMPANY (PTY) LTD

MIXED-USE RESIDENTIAL DEVELOPMENT ON PORTION 1 AND THE REMAINDER OF FARM SIMS NO.462, KURUMAN RD

Kathu, Northern Cape

D:E&NC Ref No.: NC/EIA/10/JTG/GAM/KAT2/2014

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EXECUTIVE SUMMARY

Introduction

Consideration is being given to the construction of a mixed-use residential development, and associated infrastructure, on Portion 1 and the Remainder of the Farm Sims No. 462, Kuruman RD., Kathu, Northern Cape. It is estimated that up to 1439 properties will be developed, which includes 538 single residential properties, 851 group housing properties, 4 properties for the development of flats, 6 commercial properties, 29 open space properties, places of worship, education, municipal use, roads and associated infrastructure.

The applicant is Sishen Iron Ore Company (Pty) Ltd who will undertake the activity should it be approved. EnviroAfrica CC has been appointed as the independent environmental assessment practitioner (EAP) responsible for undertaking the relevant EIA and the Public Participation Process required in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA).

The Final Scoping Report and Plan of Study for EIA were submitted to the Department of Environment and Nature Conservation (DENC). The Scoping Report and Plan of Study for EIA were approved by DENC and EnviroAfrica were advised to proceed with the EIA process (**Appendix 1B**).

Environmental Requirements

The National Environmental Management Act (Act 107 of 1998) (NEMA), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the relevant authorities based on the findings of an environmental assessment. NEMA is a national act, which is enforced by the Department of Environmental Affairs (DEA). These powers are delegated in the Northern Cape to the Department of Environment and Nature Conservation (DE&NC).

On the 18 June 2010 the Minister of Water and Environmental Affairs promulgated regulations in terms of Chapter 5 of the NEMA, namely the EIA Regulations 2010 (GN No. R. 543, R. 544 (Listing Notice 1), R. 545 (Listing Notice 2), R. 546 (Listing Notice 3) and R. 547 in Government Gazette No. 33306 of 18 June 2010). These regulations came into effect on the 2 August 2010. Listing Notice 1 and 3 are for a Basic Assessment and Listing Notice 2 for a full Environmental Impact Assessment.

According to the regulations of Section 24(5) of NEMA, authorisation is required for the following listed activities for the proposed housing development on Farm Sims:

Government Notice R544 (Listing Notice 1) listed activities:

- 9** The **construction** of facilities or infrastructure exceeding 1000 meters in length for the bulk transportation of water, sewage or storm water –
 - (i) With internal diameter of 0.36 meters or more; or
 - (ii) With a peak throughput of 120 liters per second or more,
- 11** The construction of infrastructure or buildings covering 50 square meters 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.
- 18** The infilling or depositing of any material of more the 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from a watercourse
- 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 meters, or

- (iii) For which an environmental authorization was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.

Government Notice R545 (Listing notice 2) listed activities:

- 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:

Government Notice R546 (Listing notice 3) listed activities:

- 4** The **construction** of a road wider than 4 metres with a reserve less than 13.5 metres.
- 13** The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation
- 14** The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for:
- (1) purposes of agriculture or afforestation inside areas identified in spatial instruments adopted by the competent authority for agriculture or afforestation purposes;
 - (2) the undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the activity is regarded to be excluded from this list;
 - (3) the undertaking of a linear activity falling below the thresholds in Notice 544 of 2010.
- 16** The **construction** of:
- (i) jetties exceeding 10 square metres in size;
 - (ii) slipways exceeding 10 square metres in size;
 - (iii) **buildings** with a footprint exceeding 10 square metres in size; or
 - (iv) **infrastructure** covering 10 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.

In terms of the NEMA EIA Regulations 2014, and the Transitional Arrangements in Regulation 53 of GN No. R 326 of 07 April 2017, it must be noted that the following listed activities will be triggered:

Government Notice R327 (Listing Notice 1) listed activities:

- 12** The **development** of;
- (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres;
 - (ii) infrastructure or structures with a physical footprint of 100 square metres or more;**
- where such development occurs;
- (a) within a watercourse;
 - (b) in front of a development setback; or
 - (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;**
- 19:** The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;

- 24:** The development of;
- (i) a road 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 Government Notice 545 of 2010; or
 - (ii) a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;**
- but excluding;
- (a) which are identified and included in activity 27 in Listing Notice 2 of 2014; or
 - (b) where the entire road falls within an urban area.
 - (c) which is 1 kilometer or shorter
- 27:** The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for;
- (i) the undertaking of a linear activity; or
 - (ii) maintenance purposes undertaken in accordance with a maintenance management plan.

Government Notice R325 (Listing Notice 2) listed activities:

- 15:** The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for;
- (i) the undertaking of a linear activity; or
 - (ii) maintenance purposes undertaken in accordance with a maintenance management plan.

Government Notice R324 (Listing Notice 3) listed activities:

- 12:** The clearance of an area of 300 square metres or more of **indigenous vegetation** except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.
- 14** The **development** of;
- (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 10 square metres;
 - (ii) infrastructure or structures with a physical footprint of 10 square metres or more;**
- where such development occurs;
- (a) within a watercourse;
 - (b) in front of a development setback; or
 - (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;**

Need and Desirability

Currently, there is a significant housing need in Kathu, due to the population growth and mining activities in the town. The Applicant, as a major housing supplier in Kathu, has considered the development in-line with their need estimations in-line with the current expansion plans of the mine.

According to the Socio-economic Impact Assessment, the Gamagara Local Municipality Spatial Development Framework (SDF) notes that Kathu is the largest urban centre within Gamagara Municipality. The town is still expanding, and is expected to persist in its growth, as the mining operations continue to expand and intensify. Kathu can therefore be viewed as the Primary Urban Node within the Gamagara Municipality and should be considered the preferred growth point in the area.

The site is located in close proximity to major transport arteries, including the R380 (which links directly to the N14) and Hendrik van Eck Way, and has direct access from a number of major routes in the area. No

constraints with regards to accessibility have been identified, however, the Traffic Impact Assessment concluded development will have an impact on all of the analysed intersections and some improvements are required to the relevant intersections.

The site is also relatively near the mine, as well as other employment opportunities such as commercial developments and malls. A large business node is forming around the intersection of Hendrik van Eck Way and the R380. The recently developed Kathu Village Mall has played a significant role as catalyst for development in the area. The Kathu Village Mall and other commercial developments are thus in close proximity to the proposed development.

The development is located within the urban edge of Kathu, and can therefore also be considered to be infill development. Infill planning are contemporary principles to promote integration and to ensure optimum utilisation of available land. The desirability of the proposed development is further founded on the principle that it will ensure feasible residential development that could effectively be linked to the existing services infrastructure.

The area is deemed to be ideally situated within the local context for the envisaged housing project. The criteria that determined the desirability of the applicable location are based on the principles of integration by means of infill planning and the optimum utilisation of available land and resources, availability of bulk services, accessibility and proximity of employment opportunities.

The proposed site is classified as “mixed-use development” and “lower density residential in the Kathu Spatial Development Framework and has been earmarked for the planned urban expansion.

The overall character of the area will be maintained and the use proposal of the Kathu Spatial Development Framework will be maintained.

However, according to the preliminary Bulk Services and Infrastructure Status Report, the proposed mixed-use development cannot come into operation before the proposed upgrades have been implemented. This is especially the case of bulk water and sewer infrastructures.

Site Description

The site of the proposed development is located on Portion 1 and the Remainder of the Farm Sims No. 462, Kuruman RD, Kathu.

The property is located to the west of the town of Kathu, adjacent to the Kathu Village Mall, and east of Mapoteng. The R380 runs through the development.

The site coordinates of the property boundary are as follows:

- Point 1 - S 27° 41' 49.83", E23° 01' 02.83".
- Point 2 - S 27° 41' 46.14", E23° 01' 30.59".
- Point 3 - S 27° 41' 38.38", E23° 01' 37.46".
- Point 4 - S 27° 41' 16.60", E23° 01' 32.73".
- Point 5 - S 27° 41' 44.96", E23° 02' 24.25".
- Point 6 - S 27° 41' 54.00", E23° 01' 41.61".
- Point 7 - S 27° 42' 07.03", E23° 01' 58.64".
- Point 8 - S 27° 42' 23.00", E23° 01' 22.66".

The proposed property does not fall within, or adjacent to, the declared Kathu Forest. The site is located at least 1.8km south-west of the Kathu Forest. Please also refer to Figure 6 below.

From the vegetation map (Figure 7 - SANBI BGIS), the site is located within the Kathu Bushveld, which is characterised by a medium-tall tree layer with *Acacia erioloba* in places, but mostly open and including *Boscia albitrunca* as the prominent trees. According to the National list of ecosystems that are threatened and in need of protection (GN. 1002 of 9 Dec. 2011), this vegetation type is classified as Least Threatened.

However, the Camelthorn (*Acacia erioloba*) is a protected tree in terms of the National Forest Act of 1998, and these trees are found on the property. According to the Botanical Impact Assessment, observations during the field investigation at the SIMS study site verified the classification of the vegetation as Kathu Bushveld and revealed that this area is more typically bushveld than the area in Kathu town where there are many old and well-established camel thorn trees (*Acacia erioloba*) and the vegetation is more forest-like. The vegetation is Least Threatened and does not harbour any endemic species. However, as noted above, *Acacia erioloba* (camel thorn) trees are scattered over the site and where possible these trees should be preserved.

A population of the widespread *Aloe grandidentata* was found at S 27° 41' 37.1" E 23° 01' 43.0". This aloe is not threatened but since all aloes in the Northern Cape Province are protected species, these plants should be rescued and transplanted at a safe location. A permit would be required for this purpose.

The site is generally covered in thick vegetation, but is also severely degraded in areas due to illegal public dumping, diggings, an abandoned limestone quarry, ruins of old buildings and a reservoir, footpaths and de-proclaimed tar road.

No above ground freshwater resources were found on the site, besides a small seasonal pan located in the northern corner of the site. This has also been identified in the National Freshwater Ecosystem Priority Areas (NFEPA) layer on the SANBI BGIS maps (see Figure 7 above and Figure 8 below) as a natural wetland (Eastern Kalahari Bushveld Group 1 Depression). According to the Botanical Impact Assessment (**Appendix 6A**), the pan is a seasonal pan or endorheic pan.

According to the Heritage Impact Assessment, a very small number of Middle Stone Age (MSA) and Later Stone Age (LSA) implements were encountered over the proposed development site, which is mostly devoid of archaeological heritage. A dispersed scatter of MSA tools was recorded in the north east of the proposed development site, alongside the old Kuruman Road, but these remains occur in a highly degraded context.

There are no visible graves on the proposed development site. A ruined concrete reservoir and the foundations of a modern structure/building were found among a stand of large Kameeldoring trees, and are probably the remains of an 'old' cattle station.

The proposed development of Remainder & Portion 1 of the Farm Sims 462 in Kathu will not impact on any significant archaeological heritage. The small number, isolated and disturbed context in which they were found means that the archaeological remains have been rated as having low (Grade 3C) significance.

The receiving environment is not a sensitive or vulnerable archaeological landscape.

According to the Palaeontological Impact Assessment, according to geological maps, satellite images and recent palaeontological assessments in the Kathu area the flat-lying Sims mixed-development study area is underlain by a considerable thickness of Plio-Pleistocene to Recent sediments of the Kalahari Group. In general the Kalahari Group calcretes and sands are of low palaeontological sensitivity, mainly featuring widely-occurring plant and animal trace fossils (e.g. invertebrate burrows, plant root casts). Recent palaeontological field assessments in the Sishen – Hotazel region have not recorded significant fossil material within these near-surface Kalahari sediments.

A very important fossil assemblage of Pleistocene to Holocene mammal remains - predominantly teeth with

scarce bone material associated with Earlier, Middle and Later Stone Age artefacts, well-preserved peats and pollens - is recorded from unconsolidated doline (solution hollow) sediments at the well-known Kathu Pan site, located some 5.5 km northwest of Kathu and close to the present study area. There are at present no obvious indications of comparable fossiliferous, tool-bearing solution hollow infills exposed at present within the study area, but such sediments might conceivably be present but hidden beneath cover sands and calcretes along hidden drainage lines.

Alternatives

Various layout alternatives were proposed and have been considered during the Scoping phase and these are described below.

Alternative 1

Alternative 1 (**Appendix 2A**) is the first concept layout proposed. This layout included 1275 properties, which included:

- 1227 residential properties
- Institutional Zone II properties (Worship)
- Institutional Zone I property (Education)
- Business sites (Commercial)
- 24 Public Open Spaces (Parks)
- Authority Zones (Municipal use)
- Public Streets (Transport Zone II)

This alternative is considered a viable option as it provides a sufficient number of housing opportunities, as well as sites for commercial, education, worship, public open space and municipal use.

However, this site is not preferred as it did not take the location of sensitive areas, such as the wetland to the north of the site, and botanical sensitive (Camelthorn Trees (*Acacia erioloba*)) into consideration.

Alternative 2

Alternative 2 (**Appendix 2B**) is the second concept layout proposed. This layout included 1751 properties, which included:

- 1692 residential properties
- 7 Institutional Zone II properties (Worship)
- Institutional Zone I property (Education)
- 13 Business sites (Commercial)
- 32 Public Open Spaces (Parks)
- Public Streets (Transport Zone II)

This alternative is also considered a viable option, and as with Alternative 2 above, it provides a sufficient number of housing opportunities. This layout, however, provides more Residential Zone II housing, and therefore more housing opportunities, than Alternative 1. It also provides more commercial properties than Alternative 1, but the properties are significantly smaller.

However, it is not preferred, as this layout (as well as Alternative 1) did not take any of the sensitive areas (wetlands and botanical features) into account.

Alternative 3

Alternative 3 (**Appendix 2C**) is the third concept layout proposed during the Scoping Phase. This layout included 1439 erven, which included:

- 1393 residential properties (538 single homes, 851 group housing, and 4 flats).

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- Institutional II (Worship) property
- Institutional I (Education) property
- Business properties (Commercial)
- 29 Open Space I (Park) properties
- Authority Zones (Municipal use)
- Public Streets (Transport Zone II)

This alternative is also considered as a viable option. Although it does not provide as many housing opportunities as Alternatives 2, it still provides sufficient housing opportunities, and conforms more to the mixed-use development envisaged.

It has importantly taken the sensitive natural features such as wetlands and the sensitive botanical areas into consideration when it has come to the placement of open spaces and roads.

Final placement of the buildings on the Residential I and II properties will be done taking any Camelthorn trees into account, to avoid damaging or having to remove them.

Alternative 4

Alternative 4 (**Appendix 2D**) is the final concept layout proposed during the Scoping Phase. This layout included 1274 erven, which included:

- 1224 residential properties (534 single homes, 686 group housing, and 4 flats).
- Institutional II (Worship) property
- Institutional I (Education) property
- Business properties (Commercial)
- 31 Open Space I (Park) properties
- Authority Zones (Municipal use)
- Public Streets (Transport Zone II)

This alternative is also considered as a viable option, and is the Applicants preferred layout. Although it does not provide as many housing opportunities as Alternatives 2 and 3, it still provides sufficient housing opportunities, and conforms more to the mixed-use development envisaged. It differs from Alternative 3 in that it includes an Eskom Servitude.

It has importantly taken the sensitive natural features such as wetlands and the sensitive botanical areas into consideration when it has come to the placement of open spaces and roads.

Final placement of the buildings on the Residential I and II properties will be done taking any Camelthorn trees into account, to avoid damaging or having to remove them.

No-Go Alternative:

This is the option of not developing the proposed mixed-use residential development.

Currently no Agricultural activities are taking place on this site although it is zoned as Agricultural Zone I. However, the site is located adjacent to established residential and commercial areas.

Although the no-go development might result in no potential negative environmental impacts, the direct and indirect socio-economic benefits of not constructing the residential development will not be realised. The need for additional housing opportunities in Kathu will not be realised.

According to the Socio-economic Impact Assessment, the no-development option would result in the lost opportunity for the local economy the Gamagara Local Municipality and residents who would benefit from the

development. The no-development alternative would result in a lost opportunity for Sishen Iron Ore to provide quality, affordable accommodation for its employees and to create a well-planned new development that includes the establishment of schools, places of worship, public open spaces and sports fields and shops. The no-development option would also result in a lost opportunity for Sishen Iron Ore employees to purchase houses at a significantly discounted price. The employment and business opportunities associated with the construction and operational phase would also be forgone, as would the rates and taxes generated for the Gamagara Local Municipality. The no-development option is therefore not supported.

According to the Botanical Impact Assessment, in the case of the 'No Go' option the residential development would not be pursued and the *status quo* would persist. The vegetation would remain much as it is. The No-Go alternative would result in a **Low negative** impact (it cannot be **Neutral** because there is a low level of negative use of the area by pedestrians and illegal informal residents that could continue if the area is not developed).

Tasks to be undertaken during the EIA Phase

The following tasks must still be undertaken during the EIA phase of the process:

- Compile Draft Environmental Impact Report (EIR) for public comment based on specialist information
- Distribute and/or make the Draft EIR available to registered Interested and Affected Parties for viewing and comment
- Receive comments on Draft EIR. All comments received and responses to the comments will be incorporated into the Final Environmental Impact Report (EIR).
- Preparation of a FINAL EIR for submission to DENC for consideration and decision-making.

Specialist Studies

The following specialist studies were undertaken as part of this Environmental Impact Assessment:

- Botanical Impact Assessment
- Heritage Impact Assessment
- Palaeontological Impact Assessment
- Socio-economic Impact Assessment
- Geo-technical Assessment
- Traffic Impact Assessment

Conclusion

The specialist studies and the information provided within the EIA Report, indicates that the proposed Sims Housing development does not pose any significant impacts and can be implemented with appropriate mitigation.

In terms of the need and desirability of the proposed residential development, there is currently a significant housing need in Kathu, due to the population growth and mining activities in the town. The Applicant, as a major housing supplier in Kathu, has considered the development in-line with their need estimations in-line with the current expansion plans of the mine.

According to the Socio-economic Impact Assessment, the SDF notes that the town is expected to experience significant growth over the next few years due to the expansion of the mining sector in the area. However, due to the decrease in the price of iron ore there is likely to be a delay in this future growth.

The proposed Sims Residential Development is located within the urban edge as identified in the Gamagara Local Municipality SDF. The site has therefore been identified as suitable for development. The proposed site is

classified as “mixed-use development” and “lower density residential in the Kathu Spatial Development Framework and has been earmarked for the planned urban expansion.

The site is located in close proximity to major transport arteries, including the R380 (which links directly to the N14) and Hendrik van Eck Way, and has direct access from a number of major routes in the area.

The site is also relatively near the mine, as well as other employment opportunities such as commercial developments and malls. According to the Socio-economic Impact Assessment (**Appendix 6D**), a large business node is forming around the intersection of Hendrik van Eck Way and the R380. The recently developed Kathu Village Mall has played a significant role as catalyst for development in the area. The Kathu Village Mall and other commercial developments are thus in close proximity to the proposed development.

The site is bound by commercial/business developments to the east, which fall between the proposed site and the lower density residential development further to the east. A high density residential area (Mapoteng) is located to the west of the site. The site is thus located between Mapoteng and the main town of Kathu, previously segregated communities. The development of the site will have an integrative objective in terms of correcting previous era segregation planning.

The area is thus deemed to be ideally situated within the local context for the envisaged housing project. The criteria that determined the desirability of the applicable location are based on the principles of integration by means of infill planning and the optimum utilisation of available land and resources, availability of bulk services, accessibility and proximity of employment opportunities.

In terms of alternatives, **Alternative 4** is the preferred alternative. This alternative is also considered as a viable option, and is the Applicants preferred layout. Although it does not provide as many housing opportunities as Alternatives 2 and 3, it still provides sufficient housing opportunities, and conforms more to the mixed-use development envisaged. It has importantly taken the sensitive natural features such as wetlands and the sensitive botanical areas into consideration when it has come to the placement of open spaces and roads.

The “no-go” option, which is the option of not developing the proposed housing development on the property. Although the no-go development might result in no potential negative environmental impacts, especially on the vegetation on the development site, the direct and indirect socio-economic benefits of not constructing the residential development will not be realised. The need for additional housing opportunities in Kathu will not be realised.

According to the Socio-economic Impact Assessment, the no-development option would result in the lost opportunity for the local economy the Gamagara Local Municipality and residents who would benefit from the development. The no-development alternative would result in a lost opportunity for Sishen Iron Ore to provide quality, affordable accommodation for its employees and to create a well-planned new development that includes the establishment of schools, places of worship, public open spaces and sports fields and shops. The no-development option would also result in a lost opportunity for Sishen Iron Ore employees to purchase houses at a significantly discounted price. The employment and business opportunities associated with the construction and operational phase would also be forgone, as would the rates and taxes generated for the Gamagara Local Municipality. The no-development option is therefore not supported.

According to the Botanical Impact Assessment, in the case of the ‘No Go’ option the residential development would not be pursued and the *status quo* would persist. The vegetation would remain much as it is. The No-Go alternative would result in a **Low negative** impact (it cannot be **Neutral** because there is a low level of negative use of the area by pedestrians and illegal informal residents that could continue if the area is not developed).

According to the Botanical Impact Assessment, the investigation of the proposed area for the SIMS housing development at Kathu revealed that viable, well-developed Kathu Bushveld vegetation occurs throughout the

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site. This vegetation is generally shrubland with scattered trees, some of which are the protected species *Acacia erioloba* (camelthorn). Development of the site would result in **High negative** impacts both in terms of loss of vegetation and habitat as well as ecological processes at a local scale. However, at a regional scale the impact would be limited and so cumulative impacts are rated as **Low negative**.

The Kathu Bushveld in the SIMS study area is Least Threatened and although there would be local loss of intact natural veld due to the proposed development, the housing development is supported without major constraints or need for cumbersome mitigation measures.

According to the Socio-economic Impact Assessment, the findings indicate that the Preferred Alternative complies with and is supported by the local land use planning proposals for the site. The findings of the SIA also indicate that the socio-economic benefits associated with the proposed development outweigh the negative impacts. All of the negative impacts can also be effectively mitigated.

It is therefore recommended that Preferred Alternative of the proposed SIMS Mixed Use Development be supported, subject to the implementation of the recommended enhancement and mitigation measures contained in the SIA report.

The Heritage Impact Assessment identified no significant impacts to pre-colonial archaeological material and showed that the receiving environment is not a sensitive or threatened archaeological landscape.

According to the Palaeontological Impact Assessment, the overall impact significance of the proposed Sims mixed-use development is rated as Low as far as palaeontological heritage is concerned. Likewise, cumulative impacts are likely to be of Low significance, given the scarcity of important fossils (especially vertebrate remains) within the sedimentary rock units concerned as well as the huge outcrop area of the Kalahari Group as a whole.

The Geo-technical Assessment found no limiting conditions of the site and is suitable to support the proposed structures with recommendations for foundations. The Sims site is underlain by very thick Kalahari Group material (calcrete, clay, pebble layers), overlying Gamagara Formation shale. No known/confirmed faults are indicated to transect the site. Most of the Sims site is located within the area significantly impacted by groundwater abstraction. The site is not judged to be on dolomite land.

The Traffic Impact Assessment the development will have an impact on traffic in the area and therefore some improvements are required to the relevant intersections. However, based on the conclusions it is recommended that the development be approved from a traffic point of view.

However, according to the preliminary Bulk Services and Infrastructure Status Report, the proposed mixed-use development cannot come into operation before the proposed upgrades have been implemented. This is especially the case of bulk water and sewer infrastructures.

Considering all the information, it is not envisaged that this proposed Sims residential development will have a significant negative impact on the environment, and the socio-economic benefits are expected to greatly outweigh any negative impacts.

It is therefore recommended that the proposed Sims Development (**Alternative 4**) be supported and be authorised with the necessary conditions of approval, subject to the implementation of the recommended enhancement and mitigation measures contained in Section 12.