

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

**FINAL ENVIRONMENTAL SCOPING REPORT
AND PLAN OF STUDY**



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

APRIL 2016

SISHEN IRON ORE COMPANY (PTY) LTD

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PORTION 1 AND THE REMAINDER OF FARM SIMS NO.462,
KURUMAN RD
Kathu, Northern Cape**

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ACRONYMS

BGIS	Biodiversity Geographic Information System
CBA	Critical Biodiversity Area
DEA	Department of Environmental Affairs
DENC	Department of Environment and Nature Conservation
DWA	Department of Water Affairs
EAP	Environmental Assessment Practitioner
ECA	Environment Conservation Act (Act No. 73 of 1989)
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMP	Environmental Management Programme
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act (Act No. 10 of 2004)
NFA	National Forest Act
NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
NID	Notice of Intent to Develop
OESA	Other Ecological Support Area
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resource Information System
SANBI	South African National Biodiversity Institute
SDF	Spatial Development Framework
SPLUMA	Spatial Planning and Land Use Planning Act
TIA	Traffic Impact Assessment

INTRODUCTION

1.1 BACKGROUND

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).

This Scoping Report, which will be submitted to the Department of Environment and Nature Conservation (DE&NC) for consideration, forms part of the EIA process.

The purpose of this Environmental Scoping Report is to describe the proposed project, the process followed to date, to present alternatives and to list issues identified for further study and comment by specialists, as well as the Plan of Study.

Should the EIA process be authorised by DE&NC, the Specialist Studies (noted in Section 8) will be undertaken and the significant issues (noted in Section 6) will be investigated and assessed during the next phase of this application.

1.2 DESCRIPTION OF THE PROPOSED ACTIVITY

Consideration is been given to the rezoning and subdivision of Portion 1 and the Remainder of the Farm Sims No. 462, Kuruman RD, Kathu from Agricultural Zone I for the development of a mixed use residential development.

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.

Approximately 1274 properties are proposed to be developed. This includes 534 single residential properties, 686 group housing properties, 4 properties for the development of flats, 6 commercial properties, 31 open space properties, 6 sites for places of worship, 2 sites for education and 4 properties for municipal use

The proposed activity will also include the construction of internal roads, and associated services infrastructure.

The total area of the site (both properties) is approximately 168.9ha.

The property is undeveloped, but is zoned as Agricultural Zone I in terms of the Gamagara Scheme, indicative of the past agricultural nature thereof. The site is however not being used for agricultures as it has been encroached upon by the urban development of Kathu.



Figure 1: Locality Plan. Google earth view of the proposed site (green polygon)



Figure 2: Locality Plan. Close-up Google Earth view of the proposed site.

2. NEED AND DESIRABILITY

In terms of the National Environmental Management Act, as amended, EIA 2010 regulations the Scoping/EIA report must provide a description of the need and desirability of the proposed activity. The consideration of “need and desirability” in EIA decision-making requires the consideration of the strategic context of the development proposal along with the broader societal needs and the public interest.

While the concept of need and desirability relates to the *type* of development being proposed, essentially, the concept of need and desirability can be explained in terms of the general meaning of its two components in which *need* refers to *time* and *desirability* to *place* – i.e. is this the right time and is it the right place for locating the type of land-use/activity being proposed? Need and desirability can be equated to *wise use of land* – i.e. the question of what is the most sustainable use of land. The impact of development on people’s health and well-being, as well as its impact on natural and cultural areas, and therefore its desirability, will also be assessed during the Environmental Impact Report phase.

Below is a brief description of the need and desirability of the proposed residential development. The need and desirability will be assessed and described in more detail in the Environmental Impact Report.

2.1 NEED

Kathu falls within the jurisdiction of the Gamagara Local Municipality and within the John Taolo Gaetsewe District Municipality in the Northern Cape Province.

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.

The intended land-use (mixed use development) will also need to be assessed as to whether it is considered within the Kathu Spatial Development Framework timeframes.

The availability of the necessary services with adequate capacity will also need to be assessed. According to the preliminary Bulk Services and Infrastructure Status Report (**Appendix 5**), the proposed development cannot come into operation before the proposed upgrades have been implemented. This is especially the case of bulk water and sewer infrastructures.

2.2 DESIRABILITY

The following factors determine the desirability of the area for the proposed Sims mixed-use residential development.

2.2.1 Location and Accessibility

The proposed housing development site is located on Portion 1 and the Remainder of the Farm Sims No. 462, Kuruman RD, Kathu, Northern Cape, which is located west of the town.

The site is located in close proximity to major transport arteries, including the R308 (which links directly to the N14), and has direct access from a number of major routes in the area. No constraints with regards to accessibility have therefore been identified. However, a Traffic Impact Assessment will be conducted to

assess the potential impact of the development on the current and projected traffic levels of the surrounding road network.

The site is also relatively near the mine, as well as other employment opportunities such as commercial developments and malls.

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 thus deemed to be ideally situated within the local context for the envisaged mixed use 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.

Layout also provides opportunity for establishment of social services and employment opportunity (Commercial land uses/Schools/Authority land uses)

The proposed higher density residential component is closer to transport nodes and commercial opportunity, which promotes independence from private vehicular ownership and opportunity of establishing the market threshold for public transport systems which in the long term may increase sustainable urban environments.

2.2.2 Compatibility with the Surrounding Area

The site is also bound by a low density residential development to the east, and a commercial development to the south-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 proposed site is classified as “mixed-use development” and “lower density residential in the Kathu Spatial Development Framework (**Appendix 4**) 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.

3. LEGAL REQUIREMENTS

The current assessment is being undertaken in terms of the National Environmental Management Act (Act 107 of 1998, NEMA), to be read with section 24 (5): NEMA EIA Regulations 2010. However, the provisions of various other Acts must also be considered within this EIA.

The legislation that is relevant to this study is briefly outlined below.

3.1 THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA

The Constitution of the Republic of South Africa (Act 108 of 1996) states that everyone has a right to a non-threatening environment and that reasonable measures are applied to protect the environment. This includes preventing pollution and promoting conservation and environmentally sustainable development, while promoting justifiable social and economic development.

3.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)

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 integrated residential development:

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 than 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 982 of 04 December 2014, it must be noted that the following listed activity will be triggered.

Government Notice R983 (Listing Notice 1) listed activities:

- 12:** The development of;
- (i) canals exceeding 100 square metres in size;
 - (ii) channels exceeding 100 square metres in size;
 - (iii) bridges exceeding 100 square metres in size;
 - (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size;
 - (v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size;
 - (vi) bulk storm water outlet structures exceeding 100 square metres in size;
 - (vii) marinas exceeding 100 square metres in size;
 - (viii) jetties exceeding 100 square metres in size;
 - (ix) slipways exceeding 100 square metres in size;
 - (x) buildings exceeding 100 square metres in size;
 - (xi) boardwalks exceeding 100 square metres in size; or
 - (xii) 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 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from;
- (i) a watercourse;
 - (ii) the seashore; or
 - (iii) 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;

But excluding:

- (a) will occur behind a development setback;
- (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or
- (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies.

- 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) roads which are identified and included in activity 27 in Listing Notice 2 of 2014; or
- (b) roads where the entire road falls within an urban area.

- 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 R984 (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 R985 (Listing Notice 3) listed activities:

- 4:** The development of a road wider than 4 metres with a reserve less than 13.5 metres.
- 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) canals exceeding 10 square metres in size;
 - (ii) channels exceeding 10 square metres in size;
 - (iii) bridges exceeding 10 square metres in size;
 - (iv) dams, where the dam, including infrastructure and water surface area exceeds 10 square metres in size;
 - (v) weirs, where the weir, including infrastructure and water surface area exceeds 10 square metres in size;
 - (vi) bulk storm water outlet structures exceeding 10 square metres in size;
 - (vii) marinas exceeding 10 square metres in size;
 - (viii) jetties exceeding 10 square metres in size;
 - (ix) slipways exceeding 10 square metres in size;
 - (x) buildings exceeding 10 square metres in size;
 - (xi) boardwalks exceeding 10 square metres in size; or
 - (xii) infrastructure or structures with a physical footprint of 10 square metres or more;

where such expansion or expansion and related operation 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;

An Application Form has been submitted to DE&NC. On acknowledgment from DE&NC (**Appendix 1**), this Scoping Process is being undertaken to identify potential issues.

The principles of environmental management as set out in section 2 of NEMA have been taken into account. The principles pertinent to this activity include:

- People and their needs will be placed at the forefront while serving their physical, psychological, developmental, cultural and social interests. The activity seeks to provide additional employment and economic development opportunities, which are a local and national need – *the proposed activity is expected to have a beneficial impact on people, especially developmental and social benefits, as well providing additional employment and economic development opportunities. Housing is a basic need*
- Development will be socially, environmentally and economically sustainable. Where disturbance of ecosystems, loss of biodiversity, pollution and degradation, and landscapes and sites that constitute the nation's cultural heritage cannot be avoided, are minimised and remedied. The impact that the activity will potentially have on these will be considered, and mitigation measures will be put in place - *potential impacts have been identified and considered, and any further potential impacts will be identified during the public participation process. An Assessment of the potential impacts and mitigation measures will be addressed by the various specialist reports (as indicated in Section 9) and these mitigation measures will be included in the EMP.*
- Where waste cannot be avoided, it will be minimised and remedied through the implementation and adherence of the Environmental Management Programme (EMP) – *this will be included in the EIR.*
- The use of non-renewable natural resources will be responsible and equitable.
- The negative impacts on the environment and on people's environmental rights will be anticipated, investigated and prevented, and where they cannot be prevented, will be minimised and remedied - *potential impacts have been identified and considered, and any further potential impacts will be identified during the public participation process. An Assessment of the potential impacts and mitigation measures will be addressed by the various specialist reports (as indicated in Section 9) and these mitigation measures will be included in the EMP.*
- The interests, needs and values of all interested and affected parties will be taken into account in any decisions through the Public Participation Process – *public participation is being undertaken in terms of the NEMA EIA Regulations 2010.*
- The social, economic and environmental impacts of the activity will be considered, assessed and evaluated, including the disadvantages and benefits – *these will be addressed in various specialist assessments as outlined in Section 9*

3.3 NATIONAL HERITAGE RESOURCES ACT

The protection and management of South Africa's heritage resources are controlled by the National Heritage Resources Act (Act No. 25 of 1999). South African National Heritage Resources Agency (SAHRA) is the enforcing authority.

In terms of Section 38 of the National Heritage Resources Act, SAHRA will require a Heritage Impact Assessment (HIA) where certain categories of development are proposed. Section 38(8) also makes provision for the assessment of heritage impacts as part of an EIA process and indicates that if such an assessment is found to be adequate, a separate HIA is not required.

The National Heritage Resources Act requires relevant authorities to be notified regarding this proposed development, as the following activities are relevant:

- *any development or other activity which will change the character of a site exceeding 5 000 m² in extent;*

- the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length

The project has been registered on SAHRIS.

Furthermore, in terms of Section 34(1), no person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the SAHRA, or the responsible resources authority. Nor may anyone destroy, damage, alter, exhume or remove from its original position, or otherwise disturb, any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority, without a permit issued by the SAHRA, or a provincial heritage authority, in terms of Section 36 (3). In terms of Section 35 (4), no person may destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object, without a permit issued by the SAHRA, or the responsible resources authority.

3.4 EIA GUIDELINE AND INFORMATION DOCUMENT SERIES

The following are the latest guidelines and information Documents that have been consulted:

- Department of Environmental Affairs and Development Planning's (DEA&DP) *Environmental Impact Assessment Guideline and Information Document Series (Dated: March 2013)*:
 - ✓ *Guideline on Transitional Arrangements*
 - ✓ *Generic Terms of Reference for EAPs and Project Schedules*
 - ✓ *Guideline on Alternatives*
 - ✓ *Guideline on Public Participation*
 - ✓ *Guideline on Exemption Applications*
 - ✓ *Guideline on Appeals*
 - ✓ *Guideline on Need and Desirability*
- Department of Environmental Affairs and tourism (DEAT) *Integrated Environmental Management Information Series*

3.5 THE SPATIAL PLANNING AND LAND USE MANAGEMENT ACT (ACT 16 OF 2013)

The subject area falls under the jurisdiction of the local municipality and the appropriate zoning and subdivision would need to be allocated in order to permit the development of the land for the intended purpose.

3.6 NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT

The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) is part of a suite of legislation falling under NEMA, which includes the Protected Areas Act, the Air Quality Act, the Integrated Coastal Management Act and the Waste Act. Chapter 4 of NEMBA deals with threatened and protected ecosystems and species and related threatened processes and restricted activities. The need to protect listed ecosystems is addressed (*Section 54*).

3.7 NATIONAL FOREST ACT

The proposed property has a number of mature Camelthorn Trees, *Acacia erioloba*, protected trees in terms of the National Forest Act. Although great care will be taken to incorporate as many Camelthorn Trees into the development layout, some trees may need to be removed.

In terms of section 15(1) of the National Forests Act, 1998, no person may -

- (a) cut, disturb, damage or destroy any protected tree; or
- (b) possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, or any forest product derived from a protected tree, except-
 - (i) under a license granted by the Minister; or
 - (ii) in terms of an exemption from the provisions of this subsection published by the Minister in the Gazette.

3.8 NORTHERN CAPE CONSERVATION ACT, ACT 09 OF 2009

On the 12th of December 2011, the new Northern Cape Nature Conservation Act 9 of 2009 (NCNCA) came into effect, which provides for the sustainable utilization of wild animals, aquatic biota and plants. Schedule 1 and 2 of the act give extensive lists of specially protected and protected fauna and flora species in accordance with this act. The NCNCA is a very important Act in that it put a whole new emphasis on a number of species not previously protected in terms of legislation.

It also put a new emphasis on the importance of species, even within vegetation classified as “Least Threatened” (in accordance with GN 1002 of 9 December 2001, promulgated in terms of the National Environmental Management Biodiversity Act 10 of 2004). Thus even though a project may be located within a vegetation type or habitat previously not considered under immediate threat, special care must still be taken to ensure that listed species (fauna & flora) are managed correctly.

4. ALTERNATIVES

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

4.1 ALTERNATIVE 1

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

- 1227 residential properties
- 6 Institutional Zone II properties (Worship)
- 3 Institutional Zone I property (Education)
- 7 Business sites (Commercial)
- 24 Public Open Spaces (Parks)
- 2 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.

4.2 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)
- 2 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.

4.3 ALTERNATIVE 3 – PREFERRED ALTERNATIVE

Alternative 3 (**Appendix 2C**) is the final 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).
- 6 Institutional II (Worship) property
- 2 Institutional I (Education) property
- 6 Business properties (Commercial)
- 29 Open Space I (Park) properties
- 2 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.

Table 1: A breakdown of the proposed land-uses on the development

Zoning	Description	Land Units	Total Area (m ²)	Avg.	%
RES I	Single Home	538	351362.0	653.1	20.8
RES II	Group Housing	851	389334.0	457.5	23.1
RES III	Flats	4	40376.6	10094.2	2.4
BUS I	Commercial	6	62141.0	10356.8	3.7
OPEN I	Park	29	258905.0	8927.8	15.3
INST II	Worship	6	25103.9	4184.0	1.5
INST I	Education	2	69843.8	34921.9	4.1
AUTH	Municipal Use	2	3940.2	1970.1	0.2
TRANS II	Public Street	1	488011.5	488011.5	28.9
Total			1689018.0		100

4.4 ALTERNATIVE 4 – PREFERRED ALTERNATIVE

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

- 1224 residential properties (534 single homes, 686 group housing, and 4 flats).
- 6 Institutional II (Worship) property
- 2 Institutional I (Education) property
- 6 Business properties (Commercial)
- 31 Open Space I (Park) properties
- 4 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.

Table 2: A breakdown of the proposed land-uses on the development

Zoning	Description	Land Units	Total Area (m ²)	Avg.	%
RES I	Single Home	534	351362,0	658,0	20,8
RES II	Group Housing	686	339390,0	494,7	20,1
RES III	Flats	4	39391,0	9847,8	2,3
BUS I	Commercial	6	62141,0	10356,8	3,7
OPEN I	Park	31	309867,0	9995,7	18,3
INST II	Worship	6	22623,0	3770,5	1,3
INST I	Education	2	68449,0	34224,5	4,1
AUTH	Municipal Use	4	9585,0	2396,3	0,6
TRANS I	Public Street	1	486212,0	486212,0	28,8
Total					100
			1689020,0		

The various zones mentioned above are described below.

Residential Zone I - a building consisting of only one residential unit – a self-contained interlinking group of rooms for the accommodation and housing of a single family, or a maximum of four persons who do not satisfy the definition of a “family”, together with such outbuildings as are ordinarily used therewith.

Residential Zone II - a group of separate and/or connected individual residential units which were planned, designed and built as a harmonious architectural entity with a medium density character and with units that may vary between single and double storeys and of which each unit has a ground floor, irrespective whether such units are cadastrally divided or not.

Residential Zone III - a building containing more than one residential unit; a building consisting of one or more residential units (excluding a group house, residential house or second residential unit) for human habitation, together with the outbuildings used therewith, and it includes boarding-houses, guest houses, flats, hotels (with no off-sales), residential clubs, old-age homes, children’s homes and hostels, but excludes buildings which are mentioned in the definition of “place of education” or “institution”.

Business Zone I - a site and/or building or part thereof used as, or intended to be used as shops and/or offices and it includes hotels, restaurants, dry-cleaners, undertakers, financial institutions, professional offices, places of assembly, doctors’ consulting rooms, stock or product exchanges, put-put course, flats above ground floor and buildings for similar uses, but it excludes places of entertainment, a casino, adult entertainment, institutional buildings, funeral parlours, public garages, service stations, repairing or related replacing functions, industrial buildings, offensive industry or any large wholesale business.

Open Space Zone I - any land which falls under, or is intended to come under the ownership of the local authority, which is not leased or intended to be leased on a long-term basis, and which is utilised by the public as an open space, park, garden, picnic site, square, playground or recreational site, whether it appears on an approved general plan or not. Restrictions - No structure shall be erected or use practised other than those included in the definition of a “public open space”.

Open Space Zone II - any land which has been set aside in this scheme for use as a private site for sport, playing, rest and recreation facilities or as an ornamental garden or pleasure-garden, provided that the land is under the long term management of a private person or authority, and also a cemetery or show grounds, whether public or private. Consent uses – racecourses.

Institutional Zone I – Place of Instruction - a school, college, technical institute, academy, university, lecture hall or other centre of instruction, and includes a hostel appertaining thereto, and a convent, public library, art gallery, museum, gymnasium and creche, but does not include a building used or intended to be used wholly or primarily as a certified reformatory or industrial school or as a school for the mentally handicapped.

Institutional Zone II – Place of Worship. A church, synagogue, mosque, temple, chapel or other place for practising religion. It also includes any building in connection therewith, for instance a hall, Sunday school classes, creche or parsonage, but does not include funeral parlours, including chapels forming part of such parlours.

Authority Zone I – a usage practised by a local government and of which the extent thereof is of such nature that it cannot be classified or defined under another usage in these regulations, for example fire-brigade services, vehicle test centre or any services installation, such as power stations, sewerage works, refuse dump sites, reservoirs, substations, etc.

Transport Zone II – Public street. Any land indicated on a plan or diagram or is specified within this zoning scheme, reserved for street purposes and where the ownership as such vests in a competent authority and includes facilities for public transport.

4.5 OTHER ALTERNATIVES

Site Alternatives

This is the only site alternative considered. Property within the urban edge of Kathu is becoming a scarce commodity, especially tracts of land large enough for township expansion. The Applicant is the owner of the land, and if alternative sites suitable in terms of the Spatial Development Framework were to be considered, this property would need to be purchased or acquired from other land owners.

The proposed site is situated within the urban edge of Kathu, and the choice of this site for development, whilst still maintaining the primary use of recreation as envisioned in the SDF, as well as motivating zonings which will discourage development within proclaimed woodland, is adequately reasonable and justified.

Activity Alternatives

No Activity Alternatives have been considered. The Applicant wants to develop the property to provide housing for its employees. Due to the need for housing in the Kathu area, the housing development and associated infrastructure on the property is therefore the only activity considered.

4.6 NO-GO ALTERNATIVE

This is the option of not developing the proposed 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. These potential negative and/or positive environmental impacts will be assessed in the Environmental Impact Report.

5. SITE DESCRIPTION

5.1 LOCATION

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 are as follows (refer to map below):

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".



Figure 3: Google Earth image of the site showing co-ordinate locations.



Figure 4: General view of the proposed site. Camel Thorn Trees (*Acacia erioloba*) are evident in this image.

5.2 VEGETATION

Kathu has become known as the “town under the trees” due to location within the Kathu Forest, an unique woodland of exceptionally large Camelthorn Trees (*Acacia erioloba*), north of the town. The Kathu woodland is approximately 4 000ha.

In 2009, the Kathu Forest was declared as the first Protected Woodland in the country in terms of Section 12 (1) (c) of the National Forests Act, Act 84 of 1998 as amended

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 5 below.

From the vegetation map (Figure 6 - 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.

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.

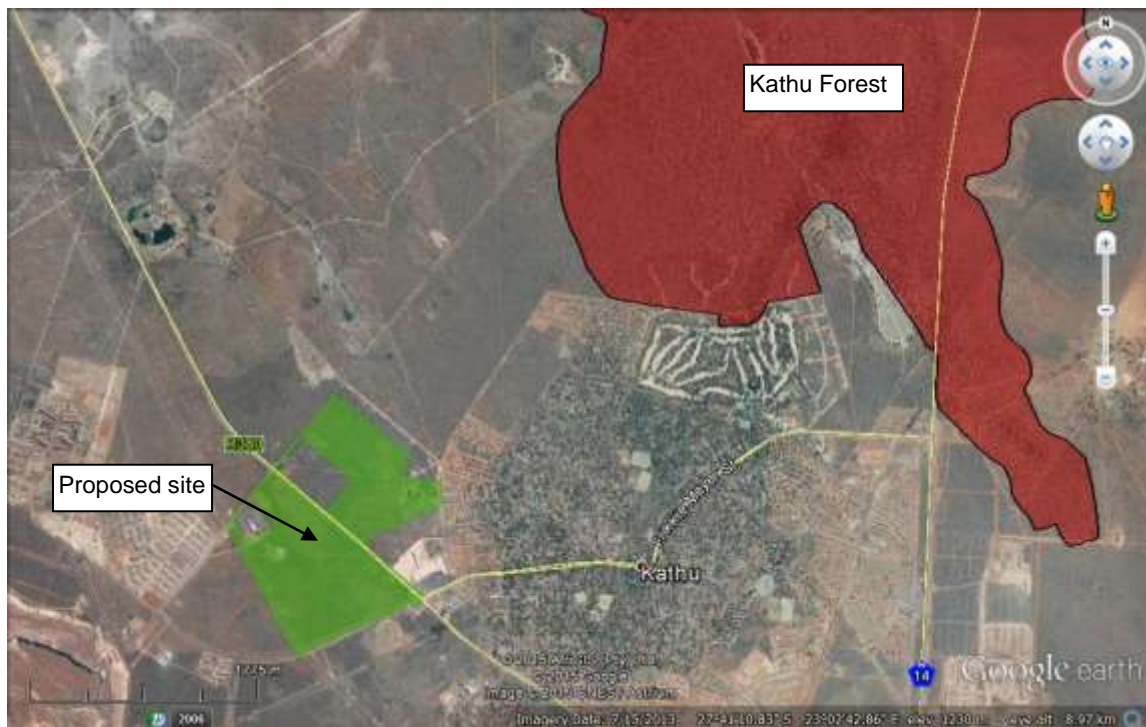


Figure 5: Google Earth image showing the site (green polygon) in relation to the Kathu Forest (red polygon)

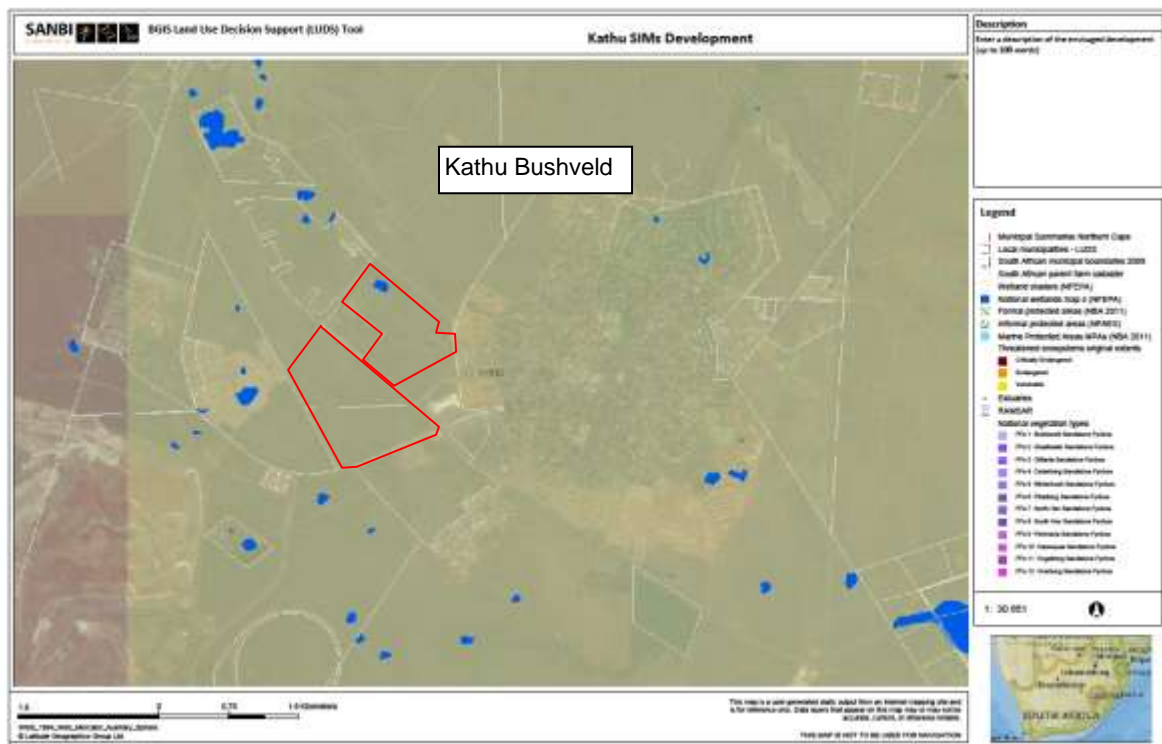


Figure 6: SANBI Vegetation map of the area. The proposed site is indicated by the red polygon.

5.3 FRESHWATER

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 6 above and Figure 7 below) as a natural wetland (Eastern Kalahari Bushveld Group 1 Depression).

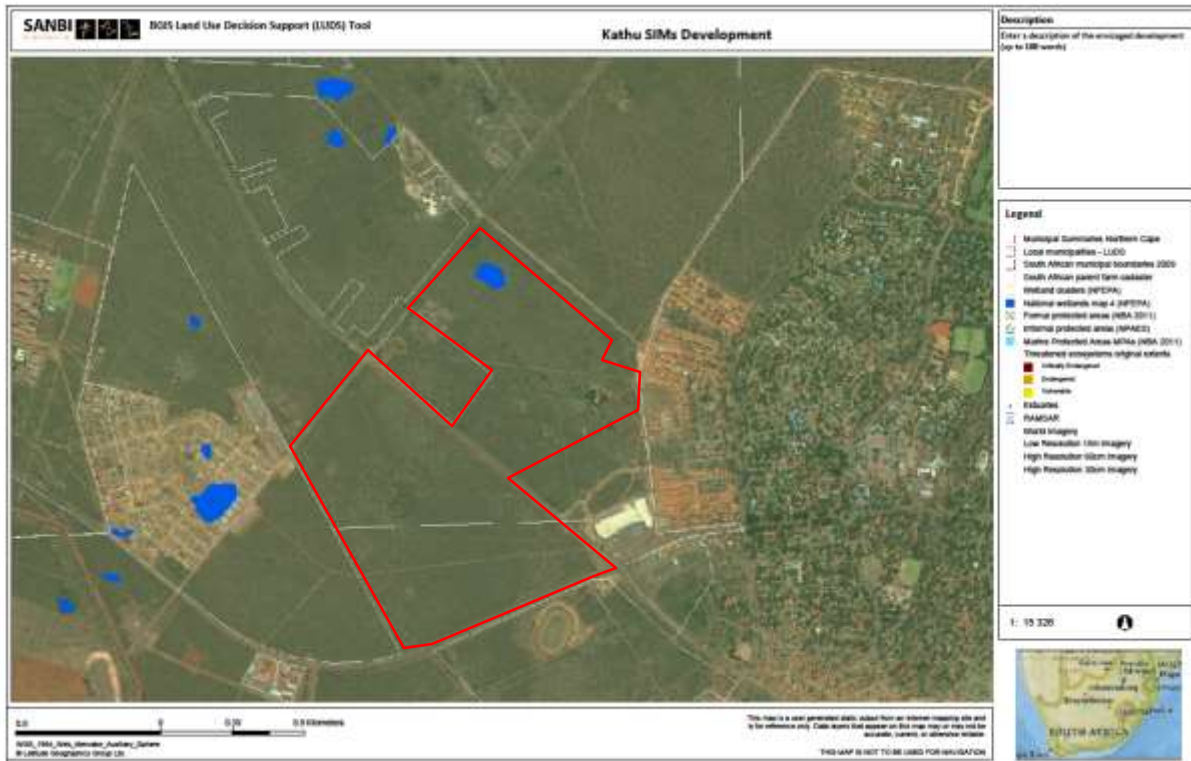


Figure 7: SANBI BGIS map of the area indicating the location of the seasonal pan on the proposed site

5.4 CLIMATE

Kathu normally receives about 240mm of rain per year, with most rainfall occurring mainly during summer. It receives the lowest rainfall (0mm) in June and the highest (55mm) in February.

The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Kathu range from 18°C in June to 33°C in January.

The region is the coldest during July when temperatures drop to 0.2°C on average during the night.

5.5 SOCIO-ECONOMIC CONTEXT

Kathu is the largest town within the Gamagara Local Municipality and is also the administrative centre of the Gamagara Municipality. The town was developed because of the iron ore mining activity in the area.

According to StatsSA, the single largest factor that has guided the development of the Gamagara area is the iron ore mine at Sishen. Not only does the mine provide jobs to thousands of people, but it was also the reason for the establishment of the town of Kathu.

The population of Kathu is 11 510 (2011 census), with a growth rate of 5.84% between 2001 and 2011.

The unemployment rate for Gamagara Municipality is 17.7%. 71.9% of the population of Gamagara Municipality is within the 'working age' group (15-64).

According to the Gamagara Local Municipality 4th Reviewed Integrated Development Plan (IDP) Review 2011/12 - 2013/14, Unskilled occupations account for the largest share of employment (54%) followed by skilled (26%) and semi-skilled (20%) in Gamagara.

5.6 HERITAGE FEATURES

A Heritage Scan has been conducted on the proposed site.

The following are the initial findings on the site:

- 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 Camelthorn trees, and are probably the mains of an 'old' cattle station.

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

6. SERVICES

Due to the level of development that is occurring within Kathu, the availability of bulk services for the development will need to be investigated. The Gamagara Municipality has confirmed that they will be the service provider for the bulk services (**Appendix 5B**)

MVD Kalahari Consulting Engineers prepared the preliminary Engineering Services Reports (attached as **Appendix 4**) on the external services for the proposed development.

According to the preliminary Bulk Services and Infrastructure Status Report (**Appendix 5**), 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.

A brief description of the bulk services is given below.

6.1 WATER

According to the Bulk Services and Infrastructure Status Report (**Appendix 5**), an additional storage capacity of 3.6MI per day is required. This will be jointly accommodated in the new proposed Kathu West and Sesheng South reservoirs.

The main water supply line required to the reservoir will be a 355mm uPVC Class 12 pipe (based on a maximum flow velocity of 1.2m/s).

6.2 SEWER

According to the Bulk Services and Infrastructure Status Report (**Appendix 5**), an additional 1.4MI per day of additional Waste Water Treatment Capacity will be required by the development, to be accommodated at

The minimum diameter outfall sewer required is 315mm Class 34 uPVC pipe with a design capacity of 1.130m/s.

Additional sewer pump station capacity of 55l/s will also be required. A new pump station is required

According to the Bulk Services and Infrastructure Status Report (**Appendix 5**), the Average Annual Dry Weather Flow (AADWF) of 1.MI/day cannot be accommodated within the existing WWTW, and will need to be accommodated in the Phase 2 upgrade of the WWTW.

6.3 ROADS

Access to the site will primarily be from the R380 from the Kathu Village mall intersection, from the road towards the Kathu mine from the same intersection, and the old road to the north of the site. According to the Bulk Services and Infrastructure Status Report (**Appendix 5**), all three roads need to be upgraded.

A Traffic Impact Assessment will also need to be done, which will also recommend slip lanes, turning radii of bell mouths, shape of intersections/ circles and form of traffic signalling and calming measures..

6.4 STORMWATER

According to the Bulk Services and Infrastructure Status Report (**Appendix 5**), traditionally all storm water in the greater Kathu area has been allowed to run off road surfaces and to drain into the highly permeable sands.

Little or no formal bulk storm water infrastructure is in place and all storm water run-off eventually finds its way towards the mining area via small localised channels, open shallow trenches and the odd box culvert.

Therefore there are no plans for any bulk storm water infrastructure. However, the Gamagara Municipality is busy with the procurement of consultants to do a complete Storm Water Master Plan for the greater Kathu.

6.5 SOLID WASTE (REFUSE) REMOVAL

Refuse removal will be via the Municipal waste stream and disposed of at the nearest municipal bulk solid waste disposal site.

6.6 ELECTRICITY

According to the Electrical Services Report (**Appendix 6**) proposed development falls within the new Kathu West Intake Substation feeding area. According to the latest available information, this Intake Substation will be completed by November 2016.

The development will have a total load of approximately 9 000kVa.

One new 11 kV ring from Kathu West Intake Substation to the proposed site, through the development and back, will need to be installed for each property (Farm 462/0 and 462/1).

Please refer to the Electrical Services Report (**Appendix 6**) for more details.

7. ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

Environmental issues were raised through informal discussions with the project team, specialists and authorities. All issues raised will be assessed in the specialist reports and will form part of the Environmental Impact Report. Additional issues raised during the public participation will be listed in the Final Scoping Report.

The following potential issues have been identified:

7.1 BIODIVERSITY

7.1.1 Botanical

Due to the size of the development and the expectant loss of vegetation during the construction phase of the project, and the presence of Camelthorn Trees (*Acacia erioloba*) on the property, a botanical impact assessment will be conducted. This will also determine if there is any sensitive or endangered vegetation on the proposed site, beside *Acacia erioloba*. This will also include an assessment of the potential impact of the development on the seasonal pan to the north of the site.

The botanical assessment will include the following:

- The significance of the potential impact of the proposed project, alternatives and related activities – with and without mitigation – on biodiversity pattern and process at the site, landscape and regional scales.
- Recommended actions that should be taken to prevent or, if prevention is not feasible, to mitigate impacts.

7.1.2 Fauna

Mammal and bird species was not regarded as the proposed activity is not expected to have any significant, permanent impact on these species. Most fauna and avi-fauna species of importance will be associated with the Camelthorns on the property, and as such, the impact of the proposed development on the Camelthorn trees will be assessed in the Botanical Impact Assessment.

7.2 HERITAGE

The possible impact on heritage resources has been identified as a possible environmental impact as a result of the construction of the residential development and associated infrastructure.

A Heritage Impact Assessment will be conducted on the site.

The terms of reference for the heritage and archaeological study are as follows:

- To determine whether there are likely to be any important archaeological sites or remains that might be impacted by the proposed development;
- To identify and map archaeological sites/remains that might be impacted by the proposed development;
- To assess the sensitivity and conservation significance of archaeological sites/remains in the inundation area;

- To assess the status and significance of any impacts resulting from the proposed development, and;
- To identify measures to protect any valuable archaeological sites/remains that may exist within the estimated area.

7.3 VISUAL IMPACT

The potential impact on the sense of place of the proposed residential development has also been considered. However, due to the nature of the activity, the surrounding land-uses and the proximity to other residential developments, and that the sense of place is not expected to be significantly altered by the proposed residential development, no further studies are suggested.

7.4 TRAFFIC IMPACT

The potential impact of the new development on the current and projected traffic levels of the surrounding road network will need to be assessed, and recommendations made on external road upgrades and suggested mitigation regarding the proposed access route.

A Traffic Impact Assessment will therefore be required.

7.5 GEO-TECHNICAL ASSESSMENT

A Geo-technical assessment will be required to provide information related to the soil types, soil potential, soil stability, subsoil structure, suitability of the area to support the proposed structures and recommendation for foundations

7.6 SOCIO-ECONOMIC IMPACT ASSESSMENT

Due to the scale and location of the proposed development, a socio-economic impact assessment (SIA) will need to be conducted. The terms of reference for the SIA are as follows:

- A description of the environment that may be affected by the activity and the manner in which the environment may be affected by the proposed facility.
- A description and assessment of the potential social issues associated with the proposed facility.
- Identification of enhancement and mitigation aimed at maximizing opportunities and avoiding and or reducing negative impacts.

7.7 OTHER ISSUES IDENTIFIED

Any further issues raised during the public participation process or by the Competent Authority not mentioned in this section, will be dealt with during the EIA phase.

8. DETAILS OF THE PUBLIC PARTICIPATION PROCESS

Interested and Affected Parties (I&APs) have been and will be identified throughout the process. Landowners/occupiers adjacent to the proposed site, relevant organs of state, organizations, ward councillors and the Local and District Municipality were added to this database. A complete list of organisations and individual groups identified to date is shown in **Appendix 3A**.

Public Participation will be conducted for this proposed residential development in accordance with the requirements outlined in Regulation 54 and 55 and 56 of the NEMA EIA Regulations. The issues and concerns raised during the scoping phase will be dealt with in the EIA phase of this application.

As such each subsection of Regulation 54 contained in Chapter 6 of the NEMA EIA Regulations will be addressed separately to thereby demonstrate that all potential Interested and Affected Parties (I&AP's) were notified of the proposed development.

R54 (2) (a):

R54 (2) (a) (i): A poster was displayed on the property fence at the main entrance of the proposed site. Posters were also placed at conspicuous sites, such as shopping centres, petrol stations and other such sites in and around Kathu (Proof of posters will be included as **Appendix 3D**)

The posters contained all details as prescribed by R56 (3) (a) & (b) and the size of the on-site poster was 60cm by 42cm as prescribed by section 56 (4) (a).

R54 (2) (a) (ii): N/A. There is no alternative site.

R54 (2) b):

R54 (2) (b) (i): N/A. The Applicant is the land-owner.

R54 (2) (b) (iii): Initial notification letters were hand-delivered to landowners and occupiers adjacent to the site where possible.

R54 (2) (b) (iv): An initial notification letter was sent to the municipal Ward councillor at the Gamagara Local Municipality, for the ward in which the site is situated (please refer to **Appendix 3C** for proof of notification letters sent).

R54 (2) (b) (v): An initial notification letter was sent to the Municipal Manager of John Taolo Gaetsewe District Municipality and Gamagara Local Municipality (please refer to **Appendix 3C** for proof of notification letters sent).

R54 (2) (b) (vi): Initial notification letter, as well as the Draft Scoping Report (please refer to **Appendix 3C**) was sent to the following organs of state having jurisdiction in respect of any aspect of the activity:

- Department of Water and Sanitation
- South African Heritage Resources Agency
- Department of Agriculture and Land Reform
- Department of Roads and Public Works
- Department of Cooperative Governance, Human Settlements and Traditional Affairs

- Department of Agriculture, Forestry and Fisheries
- SANRAL

R54 (2) (c) (i): An advertisement was placed in the local newspaper, Kathu Gazette, on 15 February 2014 (please refer to **Appendix 3B** of the Scoping Report for proof of advertisement).

R54 (2) (d): N/A

R54 (7):

R54 (7) (a): All relevant facts in respect of the application were made available to potential I&AP's.

R54 (7) (b): Registered I&AP's will be given a 40-day comment period on the proposed application during the first round of public participation for the Draft Scoping Report.

R55 (1) (a), (b), (c) and R56(2): A register of interested and affected parties was opened, maintained and is available to any person requesting access to the register in writing (please refer to **Appendix 3A** for the list of Interested and Affected Parties).

Please find attached in **Appendix 3:**

- Proof of Notice boards, advertisements and notices that were sent out
- List of potential interested and affected parties
- Summary of issues raised by interested and affected parties

9. PLAN OF STUDY FOR THE EIA

9.1 TASKS TO BE UNDERTAKEN

Due to the nature of the proposed Sims residential development there are a number of activities that will still need to be undertaken during the next phase of the project. The proposed process is as described as follows (This follows from a Scoping process to be accepted by the DE&NC):

The Draft Scoping Report was made available for viewing and comment for a 40-day comment period starting from the 18th March 2015 to 04th May 2015. Comments received during the Public Participation Process have been incorporated into the Final Scoping Report. The Final Scoping Report will be made available for comment for a further 21 days to all registered I&APs. All registered I&APs will be notified of the availability of the Final Scoping Report.

The following is a list of tasks to be performed as part of the EIA Process. Should the process be modified significantly, changes will be copied to DEA&DP.

EIA PROCESS	
TASK	TIMEFRAMES
Submit Final Scoping Report (FSR) and Plan of Study for EIA.	June 2016
Receive approval for the FSR and the Plan of Study for EIA.	July 2016
Undertake specialist studies.	July 2016
Compile the Draft Environmental Impact Report (EIR) for public comment based on specialist information.	August 2016
Advertise Draft EIR, for public comment.	August 2016
Receive responses to the Draft EIR.	September 2016
Preparation of a FINAL EIR for submission to DE&NC.	October 2016

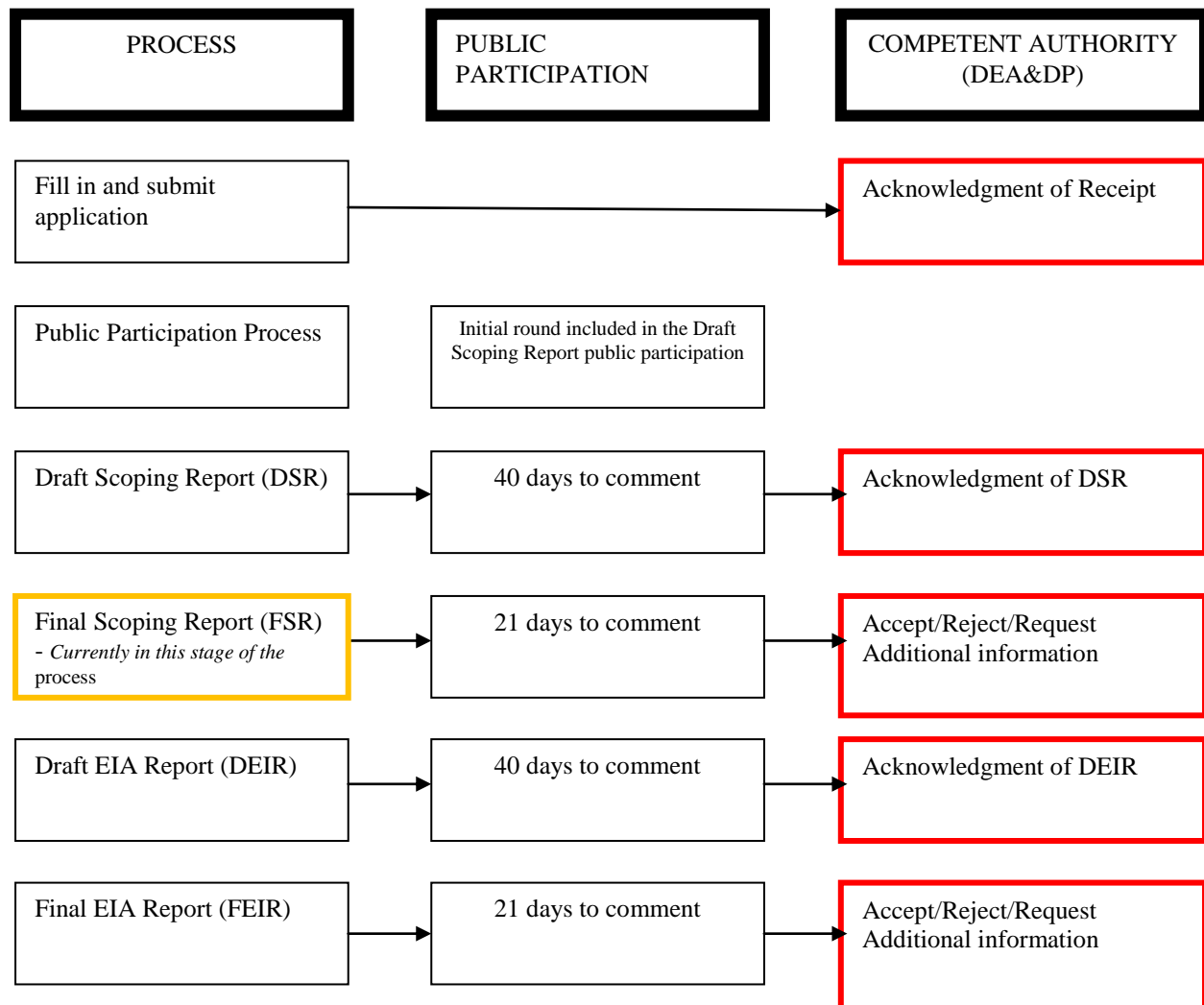


Figure 8. Summary of the EIA process and public participation process. The red indicates the stages where the competent authority will be consulted during the process.

9.2 PUBLIC PARTICIPATION AND INTERESTED AND AFFECTED PARTIES

Please refer to Figure 8 to see where the public participation process is present in the environmental impact assessment. The Interested and Affected Parties will have a chance to view and comment on all the reports that are submitted. The figures also indicated what timeframes are applicable to what stage in the process. If required, meetings with key stakeholders will be held.

At the end of the comment period, the EIR will be revised in response to feedback received from I&APs. All comments received and responses to the comments will be incorporated into the Final Environmental

Impact Report (EIR). The Final EIR will then be submitted to DE&NC for consideration and decision-making.

Correspondence with I&APs will be via post, fax, telephone, email and newspaper advertisements.

Should it be required, this process may be adapted depending on input received during the on-going process and as a result of public input. DE&NC will be informed of any changes in the process.

9.3 CRITERIA FOR SPECIALIST ASSESSMENT OF IMPACTS

As a result of the environmental issues and potential impacts identified in *Section 6*, the need for the following specialist studies has been identified:

- Botanical Impact Assessment
- Traffic Impact Assessment
- Archaeological/Heritage Impact Assessment
- Palaeontological Impact Assessment

The impacts of the proposed activity on the various components of the receiving environment will be evaluated in terms of duration (time scale), extent (spatial scale), magnitude and significance as outlined in Table 2. These impacts could either be positive or negative.

The magnitude of an impact is a judgment value that rests with the individual assessor while the determination of significance rests on a combination of the criteria for duration, extent and magnitude. Significance thus is also a judgment value made by the individual assessor.

Table 3: Criteria used for evaluating impacts

Criteria	Category
Nature of impact	This is an evaluation of the effect that the construction, operation and maintenance of a proposed dam would have on the affected environment. This description should include what is to be affected and how.
Duration (Predict whether the lifetime of the Impact will be temporary (less than 1 year) short term (0 to 5 years); medium term (5 to 15 years); long term (more than 15 years, with the Impact ceasing after full implementation of all development components with mitigations); or permanent.	Temporary: < 1 year (not including construction) Short-term: 1 – 5 years Medium term: 5 – 15 years Long-term: >15 years (Impact will stop after the operational or running life of the activity, either due to natural course or by human interference) Permanent: Impact will be where mitigation or moderation by natural course or by human interference will not occur in a particular means or in a particular time period that the impact can be considered temporary
Extent (Describe whether the impact occurs on a scale limited to the site area; limited to broader area; or on a wider scale)	Site Specific: Expanding only as far as the activity itself (<i>onsite</i>) Small: restricted to the site's immediate environment within 1 km of the site (<i>limited</i>) Medium: Within 5 km of the site (<i>local</i>) Large: Beyond 5 km of the site (<i>regional</i>)
Intensity (Describe whether the magnitude (scale/size) of the Impact is high;	Very low: Affects the environment in such a way that natural and/or social functions/processes are not affected Low: Natural and/or social functions/processes are slightly altered

medium; low; or negligible. The specialist study must attempt to quantify the magnitude of impacts, with the rationale used explained)	<p>Medium: Natural and/or social functions/processes are notably altered in a modified way</p> <p>High: Natural and/or social functions/processes are severely altered and may temporarily or permanently cease</p>
<p>Probability of occurrence Describe the probability of the Impact <u>actually</u> occurring as definite (Impact will occur regardless of mitigations)</p>	<p>Improbable: Not at all likely</p> <p>Probable: Distinctive possibility</p> <p>Highly probable: Most likely to happen</p> <p>Definite: Impact will occur regardless of any prevention measures</p>
<p>Status of the Impact Describe whether the Impact is positive, negative (or neutral).</p>	<p>Positive: The activity will have a social/ economical/ environmental benefit</p> <p>Neutral: The activity will have no affect</p> <p>Negative: The activity will be socially/ economically/ environmentally harmful</p>
<p>Degree of Confidence in predictions State the degree of confidence in predictions based on availability of information and specialist knowledge</p>	<p>Unsure/Low: Little confidence regarding information available (<40%)</p> <p>Probable/Med: Moderate confidence regarding information available (40-80%)</p> <p>Definite/High: Great confidence regarding information available (>80%)</p>
<p>Significance (The impact on each component is determined by a combination of the above criteria and defined as follows) The significance of impacts shall be assessed <u>with and without mitigations</u>. The significance of identified impacts on components of the affected biophysical or socio-economic environment (and, where relevant, with respect to potential legal requirement/s) shall be described as follows:</p>	<p>No change: A potential concern which was found to have no impact when evaluated</p> <p>Very low: Impacts will be site specific and temporary with no mitigation necessary.</p> <p>Low: The impacts will have a minor influence on the proposed development and/or environment. These impacts require some thought to adjustment of the project design where achievable, or alternative mitigation measures</p> <p>Moderate: Impacts will be experienced in the local and surrounding areas for the life span of the development and may result in long term changes. The impact can be lessened or improved by an amendment in the project design or implementation of effective mitigation measures.</p> <p>High: Impacts have a high magnitude and will be experienced regionally for at least the life span of the development, or will be irreversible. The impacts could have the no-go proposition on portions of the development in spite of any mitigation measures that could be implemented.</p>

In addition to determining the individual impacts against the various criteria, the element of mitigation, where relevant, will also be brought into the assessment. In such instances the impact will be assessed with a statement on the mitigation measure that could/should be applied. An indication of the certainty of a mitigation measure considered, achieving the end result to the extent indicated, is given on a scale of 1-5 (1 being totally uncertain and 5 being absolutely certain), taking into consideration uncertainties, assumptions and gaps in knowledge.

Table 4: The stated assessment and information will be determined for each individual issue or related groups of issues and presented in descriptive format in the following table example or a close replica thereof.

Impact Statement:		
Mitigation:		
Ratings	Duration	
	Extent	
	Intensity	
	Probability of impact	
	Status of Impact (Positive/negative)	
	Degree of confidence	
Significances	Significance without Mitigation	
	Significance <u>WITH</u> Mitigation	
Indication of the certainty of a mitigation measure considered, achieving the end result to the extent indicated, is given on a scale of 1-5 (1 being totally uncertain and 5 being absolutely certain), taking into consideration uncertainties, assumptions and gaps in knowledge		
Legal Requirements (Identify and list the specific legislation and permit requirements which are relevant to this development):		

10. CONCLUSION AND RECOMMENDATIONS

A scoping exercise is being undertaken to present the proposed activities to the I&APs and to identify environmental issues discussed in this report and concerns raised as a result of the proposed development alternatives to date. The issues and concerns were raised by I&APs, authorities, the project team as well as specialist input, based on baseline studies undertaken.

This Scoping Report, being undertaken in terms of NEMA, summarises the process undertaken, the alternatives presented and the issues and concerns raised.

As a result of the above, the need for the following specialist studies, have been identified:

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

Any further issues raised as a result of the Public Participation Process will be dealt with during the EIA phase.

The significance of the impacts associated with the alternatives proposed will be assessed in these specialist studies, as part of the EIA. Once the specialist studies have been completed, they will be summarised in an Environmental Impact Report (EIR), which integrates the findings of the assessment phase of the EIA.

Based on the significance of the issues raised during the ongoing Public Participation Process and Scoping Phase, it is evident that an Environmental Impact Assessment (EIA) is required. ***It is therefore recommended that authorisation for the commencement of an EIA for the proposed development is granted.*** Should the EIA process be authorised, the significant issues raised in the process to date will be addressed and the specialist studies noted in this report, will be undertaken.

11. DETAILS AND EXPERTISE OF THE EAP

This Final Scoping Report was prepared by Clinton Geysler who has a MSc. Degree in Environmental Management. He has been working as an Environmental Assessment Practitioner since 2009 on a wide range of projects in the Western, Eastern and Northern Cape and is currently employed at EnviroAfrica CC. The whole process and report was supervised by Bernard de Witt who has more than 20 years experience in environmental management and environmental impact assessments.

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