

DRAFT ENVIRONMENTAL IMPACT REPORT: PROPOSED ESTABLISHMENT OF AN APPROXIMATELY 44HA FORMAL HOUSING DEVELOPMENT ON SITE 1 (PORTION OF NEW BRIGHTON IN THE NORTH-EAST OF THE TOWNSHIP OF PABALLELO), UPINGTON (NC/EIA/07/ZFM/DAW/UPI1/2023)



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INDEPENDENCE & CONDITIONS

EnviroAfrica is an independent consulting firm that has no interest in the proposed activity other than fair remuneration for services rendered. Remuneration for services is not linked to approval by decision-making authorities and EnviroAfrica has no interest in secondary or downstream development as a result of this project. There are no circumstances that compromise the objectivity of this Environmental Impact Report. The findings, results, observations and recommendations given here are based on the author's best scientific and professional knowledge and available information. EnviroAfrica reserves the right to modify aspects of this report, including the recommendations if new information becomes available which may have a significant impact on the findings of this report.

RELEVANT QUALIFICATIONS & EXPERIENCE OF THE EAP

This Environmental Impact Report was prepared by Bernard de Witt, who has more than 30 years of experience in environmental management and environmental impact assessments.

After qualifying with a B. Sc. in Forestry and a B. A. (Hons) in Public Administration at the University of Stellenbosch, Bernard joined the Department of Forestry as an Indigenous Forest Planner in 1983, going on to become Manager of the Table Mountain Reserve with the Cape Town Council.

He then joined Cape Nature Conservation (CNC) and headed its Conservation Planning Section before taking up the position of District Manager of the Boland area (inc. the Hottentots Holland and Kogelberg). As a Regional Ecologist, he co-ordinated managerial and scientific inputs into Provincial Nature Reserves in the Boland, Overberg and West Coast regions of the Western Cape Province.

For the last four years of his employment, he assessed and evaluated development applications, from an environmental perspective, on behalf of CNC (now Western Cape Department of Environmental Affairs and Development Planning ("DEA&DP")). Since he left the DEA&DP, he has been involved in environmental consulting in the private sector as a member of EnviroAfrica.

Please refer to **Appendix 2J** for the CV of the EAP.

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CONTENTS

1.	INTRODUCTION	7
2.	NEED AND DESIRABILITY	9
2.1	NEED	9
2.2	DESIRABILITY	9
3.	LEGAL REQUIREMENTS.....	10
3.1	THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA.....	10
3.2	NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)	10
3.3	NATIONAL HERITAGE RESOURCES ACT	12
3.4	EIA GUIDELINE AND INFORMATION DOCUMENT SERIES	13
3.6	NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT	14
4.	ALTERNATIVES	15
4.1	SITE ALTERNATIVES.....	15
4.2	ACTIVITY ALTERNATIVES	15
4.3	NO-GO ALTERNATIVE	15
4.4	CONCLUDING STATEMENT ON ALTERNATIVES	
5.	SITE DESCRIPTION	17
5.1	LOCATION	17
5.2	VEGETATION	17
5.3	FRESHWATER	18
5.4	CLIMATE	20
5.5	SOCIO-ECONOMIC CONTEXT	21
5.6	HERITAGE FEATURES	21
6.	SERVICES.....	22
6.1	WATER	22
6.2	WASTEWATER DISPOSAL	22
6.3	ROADS.....	22
6.4	STORMWATER	22
6.5	SOLID WASTE DISPOSAL.....	22
6.6	ELECTRICITY	22
7.	PROCESS TO DATE	23
8.	ENVIRONMENTAL ISSUES AND IMPACTS	32
9.	DETAILS OF THE PUBLIC PARTICIPATION PROCESS.....	32
10.	SPECIALIST STUDIES	383
11.	ENVIRONMENTAL IMPACT ASSESSMENT AND SIGNIFICANCE RATING METHODOLOGY	35
12.	ASSESSMENT OF ENVIRONMENTAL IMPACTS	38
13.	ENVIRONMENTAL IMPACT STATEMENT	44
14.	DETAILS AND EXPERTISE OF EAP	45

FIGURES

Figure 1: . Locality map depicting the proposed site (rectangle with red boundary line)	14
Figure 2: Aerial view of the proposed site as red rectangle and the surrounding areas.....	17
Figure 3: Map showing proposed site (polygon with red boundary) and type of vegetation expected	18
Figure 4: View of the more detectable on-site drainage lines)	18

APPENDICES

APPENDIX1:	PUBLIC PARTICIPATION PROCESS
APPENDIX 1A:	ADVERTISEMENT IN NEWSPAPER
APPENDIX 1B:	NOTICES AND LETTER DROPS
APPENDIX 1C:	COMMENTS REPONSES REPORT
APPENDIX 1D:	LIST OF POTENTIAL I&APS REQUESTED TO COMMENT
APPENDIX 2:	SUPPORTING INFORMATION
APPENDIX 2A:	LOCALITY MAP
APPENDIX 2B:	TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT
APPENDIX 2C:	AQUATIC BIODIVERSITY ASSESSMENT
APPENDIX 2D:	HERITAGE IMPACT ASSESSMENT
APPENDIX 2E:	SOCIO-ECONOMIC IMPACT ASSESSMENT
APPENDIX 2F	GEOTECHNICAL REPORT
APPENDIX 2G:	IMPACT SIGNIFICANCE RATING METHODOLOGY AND IMPACT SCORING MATRIX
APPENDIX 2H	SCREENING TOOL REPORT AND SITE SENSITIVITY VERIFICATION REPORT
APPENDIX 2I	EMPR
APPENDIX 2J	EXPERTISE OF THE EAP

ACRONYMS

CBA	Critical Biodiversity Area
DAERL	Department of Agriculture, Environmental Affairs, Rural Development and Land Reform

DWS	Department of Water and Sanitation
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, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act (Act No. 10 of 2004)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NID	Notice of Intent to Develop
NWA	National Water Act, 1998 (Act No. 36 of 1998)
OESA	Other Ecological Support Area
SANBI	South African National Biodiversity Institute
WULA	Water Use Licence Application

1. INTRODUCTION

1.1 BACKGROUND

The Dawid Kruiper Local Municipality proposes to establish a formal housing development on Paballelo Site 1, *i.e.*, (Portion of New Brighton in the north-east of the township of Paballelo, next to the R360 Regional Road), Upington. The process of establishing the formal housing development on Paballelo Site 1 includes *inter alia*, the establishment of formal housing, installing of water supply, wastewater disposal, stormwater management, formal road network, electricity supply and other relevant infrastructure as well as solid waste collection services.

An informal settlement exists on much of the proposed site and the proposed site can be accessed from the existing roads in the township of Paballelo.

The applicant, Dawid Kruiper Local Municipality has appointed EnviroAfrica CC to be the independent Environmental Assessment Practitioner (“EAP”) company to manage the process of applying for environmental authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (“NEMA”).

The Draft Scoping Report and the Plan of Study for the Environmental Impact Reporting (“EIR”) phase were made available to Interested and Affected Parties for a commenting period of 30 days, after which the Scoping Report and Plan of Study for EIR were submitted to the competent authority. The competent authority accepted the Scoping Report and Plan of Study for EIR in a letter dated 16 October 2023.

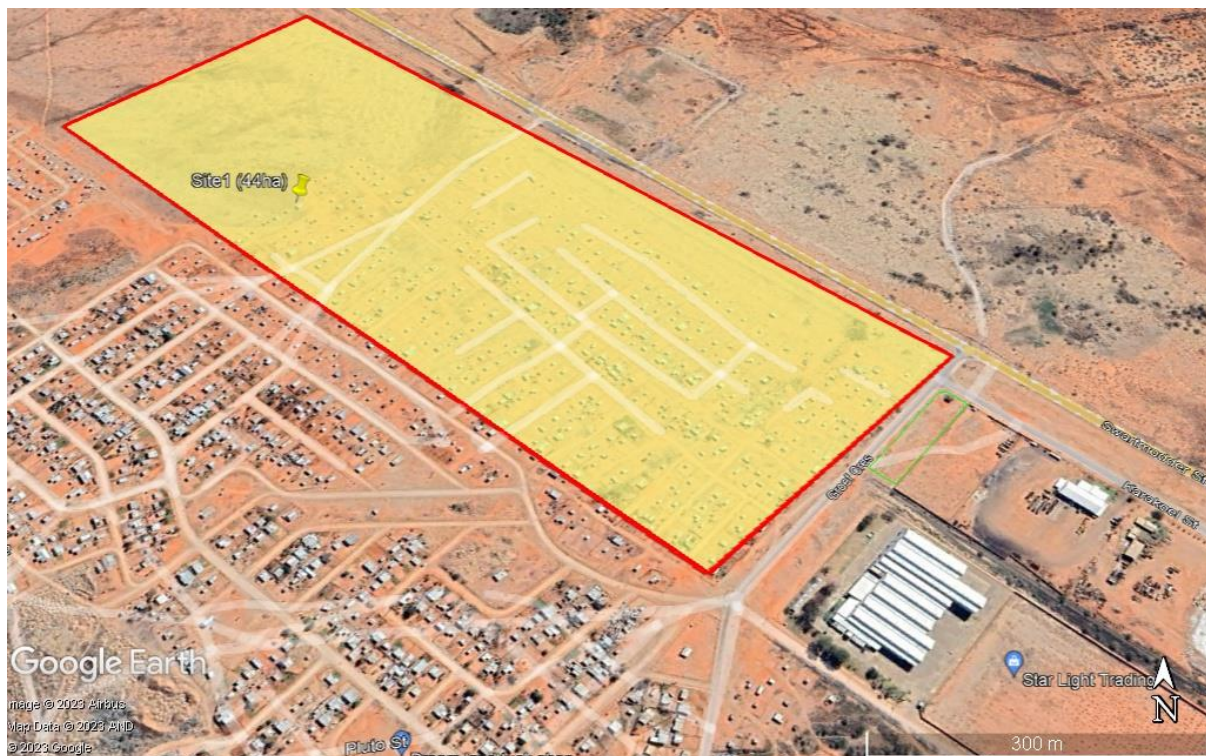


Figure 1. Locality map depicting the proposed site (rectangle with red boundary line)

The Draft EIR that is hereby submitted to the competent authority forms part of the EIA process. The purpose of this Draft EIR is to describe the proposed development, the process followed to date, the alternatives considered and to identify the potential impacts of the proposed development on the receiving environment, as well as provide recommendations and mitigation measures as suggested by the appointed specialist scientists, the EAP and other relevant parties where applicable.

1.2 DESCRIPTION OF THE PROPOSED ACTIVITY

The Dawid Kruiper Local Municipality proposes to establish a formal housing development on Paballelo Site 1, *i.e.*, (Portion of New Brighton in the north-east of the township of Paballelo, next to the R360 Regional Road), Upington. The process of establishing the formal housing development on Paballelo Site 1 includes *inter alia*, the establishment of formal housing, installing of water supply, wastewater disposal, stormwater management, formal road network, electricity supply and other relevant infrastructure as well as solid waste collection services. A large portion of the proposed site is currently occupied by an informal settlement that will have to make way for the proposed formal housing development.

The proposed site is accessible from the existing roads in the township of Paballelo.

2. NEED AND DESIRABILITY

In terms of the EIA Regulations of 2014 (as amended) the Draft EIR must describe in detail, 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* refers to *place* – *i.e.*, is this the right time and is this the right place for locating the type of land-use/ activity being proposed? Need and desirability can be equated to the *wise use of land* – *i.e.*, the question of what it is that is the most sustainable way of using the land.

2.1 NEED

The approximately 44ha proposed site is currently occupied to a large extent by an informal settlement and so most of the people on the proposed site do not have access to most of the basic municipal services that households are supposed to have access to. It is specified in the constitution of South Africa that everyone has the right to adequate housing and so a need exists for the informal settlers to be provided with adequate housing and basic municipal services by the Dawid Kruiper Local Municipality.

2.2 DESIRABILITY

The following factors affect the desirability of the area for the proposed development.

2.2.1 Location and Accessibility

The proposed formal housing development will be located on Paballelo Site 1, which is largely occupied at present by an informal settlement. Access to the proposed site is available via the existing roads in the township of Paballelo. The proposed site can therefore be accessed with relative ease.

2.2.2 Compatibility with the Surrounding Area

The proposed formal housing development will be located within the existing township of Paballelo. The location of the proposed formal housing development in the same place where an informal settlement stands within the existing township of Paballelo will make it easier for the municipality to link up the proposed development to the existing service infrastructure of the township. The proposed formal housing development will also enable the recipients of the proposed formal housing units to integrate more easily into the existing formal township of Paballelo.

3. LEGAL REQUIREMENTS

The current assessment is being undertaken with the requirements of the NEMA in mind, as well as the EIA Regulations, 2014 (as amended). However, the provisions of various other Acts must also be considered in this EIA application.

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, 1996 (Act No. 108 of 1996) states that everyone has a right to a non-threatening environment and that reasonable measures be 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 THE NEMA

The 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 competent authority based on the findings of an environmental assessment. The NEMA is a national Act and the power to enforce the Act in the Northern Cape Province has been delegated to the Department of Agriculture, Environmental Affairs and Rural and Land Reform (“DAERL”).

On 04 December 2014, the Minister of Water and Environmental Affairs promulgated regulations in terms of Chapter 5 of the NEMA, namely the EIA Regulations 2014. These Regulations were amended on 07 April 2017 (GN No. 326, No. 327 (Listing Notice 1), No. 325 (Listing Notice 2), No. 324 (Listing Notice 3) in Government Gazette No. 40772 of 07 April 2017). Listing Notice 1 and 3 are for Basic Assessment and Listing Notice 2 for a full Environmental Impact Assessment.

According to the EIA Regulations, 2014 (as amended), environmental authorisation is required for the following listed activities relating to the proposed formal housing development:

Government Notice R. 327 (Listing Notice 1):

Item 9, i.e., “*The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water—*

- (i) with an internal diameter of 0,36 metres or more; or*
- (ii) with a peak throughput of 120 litres per second or more;*

excluding where—

- (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or*
- (b) where such development will occur within an urban area”.*

Item 10, i.e., “*The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes –*

- (i) with an internal diameter of 0,36 metres or more; or*
- (ii) with a peak throughput of 120 litres per second or more;*

excluding where—

- (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or*

(b) where such development will occur within an urban area”.

Item 11, i.e., *“The development of facilities or infrastructure for the transmission and distribution of electricity—*

(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or

(ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more; excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is —

(a) temporarily required to allow for maintenance of existing infrastructure;

(b) 2 kilometres or shorter in length;

(c) within an existing transmission line servitude; and

(d) will be removed within 18 months of the commencement of development”.

Item 12, i.e., *The development of—*

(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or

(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; —

excluding—

(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;

(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;

(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;

(dd) where such development occurs within an urban area; [or]

(ee) where such development occurs within existing roads, [or] road reserves or railway line reserves; or

(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the

commencement of development and where indigenous vegetation will not be cleared”.

Item 28, i.e., *“Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:*

(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or

(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes”.

Government Notice R. 325 (Listing Notice 2)

Item 15, i.e., *“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”.

A background information document was made available to Interested and Affected Parties (“I&APs”) during a pre-application Public Participation Process (“PPP”). The pre-application PPP process was undertaken to identify potential issues to be dealt with during the application for environmental authorisation. However, no comment was received.

The principles of environmental management as set out in section 2 of the NEMA have been considered. The said principles regarding this development proposal include *inter alia*, the following:

- “People and their needs must 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 as providing additional employment and economic development opportunities*”.
- “*The 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. Mitigation measures will be included in the EM*”.
- “*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 people’s environmental rights will be anticipated, investigated and prevented, and where they cannot be prevented, will be minimised and remedied*”.
- “*The interests, needs and values of all interested and affected parties will be taken into account in any decisions through the Public Participation Process*”.
- “*The social, economic and environmental impacts of the activity will be considered, assessed and evaluated, including the disadvantages and benefits*”.
- “*The effects of decisions on all aspects of the environment and all people in the environment will be taken into account, by pursuing what is considered the best practicable environmental option*”.

3.3 NATIONAL HERITAGE RESOURCES ACT

The protection and management of South Africa’s heritage resources is achieved by means of enforcing the National Heritage Resources Act, 1999 (Act No. 25 of 1999). The South African National Heritage Resources Agency (“SAHRA”) is the enforcing authority.

In terms of Section 38 of the National Heritage Resources Act, the South African Heritage Resources Agency (“SAHRA”) requires a specialist assessment to be conducted where certain categories of development are proposed.

The National Heritage Resources Act requires relevant authorities to be notified regarding the proposed formal housing development, as the following is relevant to the proposed housing development:

- any development or other activity which will change the character of a site exceeding 5000m² in extent;

A Heritage impact specialist was appointed to conduct a Heritage Specialist Assessment of the proposed site and the specialist report is attached hereto as Appendix 2D.

3.4 EIA GUIDELINE AND INFORMATION DOCUMENT SERIES

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

- 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*

Moreover, the following guidelines were considered and incorporated (where applicable):

- National Environmental Management Act (107 of 1998) (NEMA) and Environmental Impact Assessment (EIA) Regulations, 2010: Principles of environmental management, procedures to be followed and adhered to;
- Impact significance, Integrated Environmental Management, Information Series 5 (2002) and Environmental Impact Reporting, Integrated Environmental Management, Information Series 15 (2004): These guidelines were consulted and adhered to with regards to the assessment of the significance of impacts associated with the proposed formal housing development.

The Protocols include the general requirements for conducting initial verification of site sensitivity. The DEA Screening Tool, as well as the nature of the proposed project (*i.e.*, development of formal housing) were used in identifying the need for certain specialist studies. The sensitivity indicated in the DEA Screening Tool, was agreed with for some Themes and disputed for other Themes and this was based on the site visit and desktop studies. Please refer to **Appendix 2H2** for the Site Sensitivity Verification Report (“SSVR”).

The impact mitigation hierarchy has been implemented to arrive at the best practicable environmental option. The impact mitigation hierarchy comprises four actions which are to be implemented sequentially¹, namely (1) avoidance, (2) minimization, (3) rehabilitation, and (4) offset (not applicable to this project). The following actions are relevant and have been implemented in this application in the quest to attain the best practicable environmental option:

(1) Avoidance: entailed avoiding potential environmental risks and impacts identified for the proposed development on the proposed site and surrounding area and alternatives² to achieve this were investigated. Avoidance was carried out in the context of this application, as environmental

¹Arlidge, W.N., Bull, J.W., Addison, P.F., Burgass, M.J., Gianuca, D., Gorham, T.M., Jacob, C., Shumway, N., Sinclair, S.P., Watson, J.E. and Wilcox, C., 2018. A global mitigation hierarchy for nature conservation. *BioScience*, 68(5), pp.336-347.

²Phalan, B., Hayes, G., Brooks, S., Marsh, D., Howard, P., Costelloe, B., Vira, B., Kowalska, A. and Whitaker, S., 2018. Avoiding impacts on biodiversity through strengthening the first stage of the mitigation hierarchy. *Oryx*, 52(2), pp.316-324.

components that include *inter alia*, potential biodiversity and freshwater impacts) were identified and rated by specialists. Moreover, design alternatives were also investigated.

(2) Minimize potential impacts: mitigation measures³ and recommendations have been proposed by the terrestrial biodiversity, aquatic biodiversity, and heritage specialists to mitigate and reduce identified potential impacts. These mitigation measures and recommendations have been incorporated in the EMPr and are to be implemented during the construction and operational (where applicable) phases.

(3) Rehabilitation: as per Action 2 above, mitigation measures that include the need to rehabilitate areas outside the construction footprint have been incorporated in the EMPr.

3.5 NATIONAL WATER ACT

In addition to the provisions of the NEMA for the EIA process, the proposed development may also require approval in terms of the National Water Act, 1998 (Act No. 36 of 1998), as some drainage lines exist on the proposed site that are likely to be affected by the proposed development. The National Department of Water and Sanitation which administers the Act, is a major role-player in the EIA process for the proposed housing development and will therefore continue to be consulted throughout the process.

A freshwater specialist was appointed to conduct an Aquatic Biodiversity Assessment for the proposed development on the proposed site and the specialist report is appended hereto as **Appendix 2C**.

3.6 NATIONAL ENVIRONMENTAL MANAGEMENT ACT: BIODIVERSITY ACT OF 2004

The National Environmental Management Act: Biodiversity Act, 2004 (Act No. 10 of 2004) ("NEMBA") is part of the suite of legislation falling under the NEMA, which includes the Protected Areas Act, the Air Quality Act, the Integrated Coastal Management Act and the Waste Act. Chapter 4 of the 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*).

³Mitigation measures and erosion control methods include, but are not limited to, silt fences, retention basins, detention ponds, interceptor ditches, seeding and sodding, riprap of exposed embankments, erosion mats, mulching, etc. Exposed areas, susceptible to erosion, must be rehabilitated. Mitigation measures are not limited to measures mentioned here as such measures may need to be adapted for site-specific maintenance. This includes planting vegetation, characteristic of the pertinent vegetation type, to stabilize the soil.

4. ALTERNATIVES

The following alternatives have been considered for the proposed development:

4.1 SITE ALTERNATIVES

The proposed site is approximately 44ha in size and an informal settlement currently occupies the majority of the property. It will be easier for the Dawid Kruiper Local Municipality to establish the proposed formal housing development on the same property where the informal settlement currently stands than to arrange for the informal settlers to be relocated to an alternative site that the informal settlers may not want to relocate to. In addition, the proposed site is owned by the municipality and will therefore not have to be purchased by the municipality. The public funds made available for the proposed development will therefore be used more for the establishment of the proposed formal housing development and to provide service infrastructure to the proposed development and less for anything else. In view of this, Paballelo 1 is the only site alternative considered.

4.2 ACTIVITY ALTERNATIVES

The preferred and only activity alternative that the applicant has considered is the establishment of a formal housing development on the proposed site.

The applicant has not considered any other activity alternative for the proposed site. The proposed site is in a significantly disturbed state as a result of the existing on-site informal settlement, thus minimising the likelihood that any significant negative environmental impacts will arise from establishing the proposed formal housing development on the proposed site. In addition, the likelihood exists that relocating the informal settlers in order to implement an alternative development proposal on the proposed site will require that the on-site informal settlers be relocated and this will cause unnecessary social upheaval or even violence that can be avoided by establishing the formal housing development in the same place where the informal settlement currently stands.

The proposed formal housing development on Paballelo 1 is therefore deemed to be the most desirable activity alternative on the proposed site.

4.3 NO-GO ALTERNATIVE

The applicant has also considered the option of not proceeding with the proposed development.

The implementation of the “no-go” alternative will not directly cause any new negative environmental impacts. However, implementing the “no-go” alternative means that the Dawid Kruiper Local Municipality would do nothing about the people living inside informal structures on the proposed site without receiving most of the basic services that municipalities are required to provide to everyone.

This would amount to a failure of the municipality to perform the duties that municipalities are legally required to perform and this would be a highly undesirable state of affairs.

In light of the above, the no-go- alternative is undesirable and should be discarded and the preferred activity alternative authorised by the competent authority.

4.4 CONCLUDING STATEMENT ON ALTERNATIVES

The applicant wishes to establish a formal housing development on Paballelo Site 1 so that the informal settlers on the proposed site can enjoy the benefit of adequate housing and municipal services in their homes such as electricity supply, piped water supply, flush toilets, and also enjoy the safety of having street lights outside and the convenience of regular refuse collection etc. Paballelo 1 is the only site alternative considered and is deemed the most suitable, as the much of the logistical difficulties of of relocating the informal settlers to an alternative site will be avoided. In addition, the informal settlers on Paballelo 1 are accustomed to living on Paballelo 1 and are likely to resist any proposal that involves them being relocated to an alternative site elsewhere.

In light of the above, the competent authority should view Paballelo 1 as the most desirable site alternative.

5. SITE DESCRIPTION

5.1 LOCATION

The proposed site is located on Paballelo Site 1, *i.e.*, a (Portion of New Brighton in the north-east of the township of Paballelo, next to the R360 Regional Road), Upington (See Figure 2). The total area to be occupied by the proposed housing development is approximately 44ha. The geographic coordinates of the proposed site are: **28° 25' 43.89"S, 21° 12' 54.17"E**.



Figure 2: Aerial view of the proposed site as a red rectangle and the surrounding area

5.2 VEGETATION

The vegetation of the proposed site is identified as Kalahari Karroid Shrubland this vegetation type is categorised as **“Least Threatened”** in terms of the *“Revised List of ecosystems that are threatened and in need of protection”* (GN 47526 of 18 November 2022).

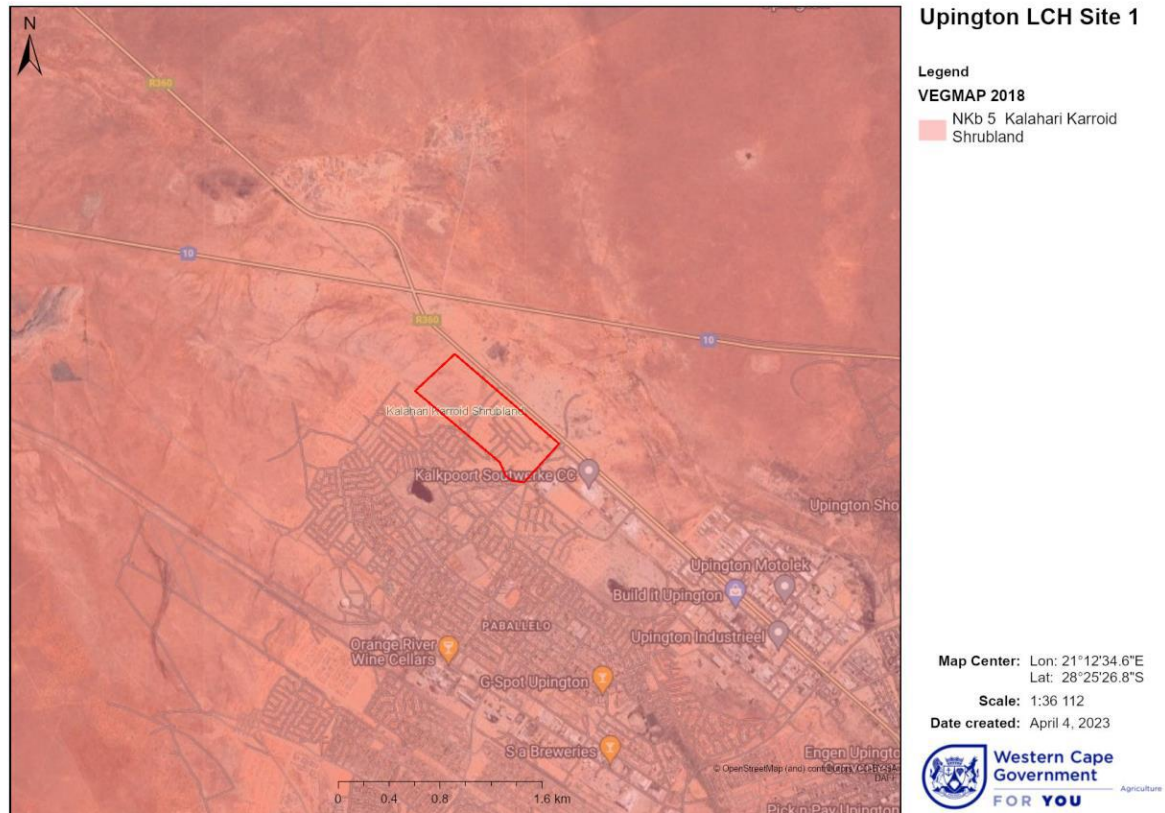


Figure 3: Map showing proposed site (polygon with red boundary) and type of vegetation expected

About two-thirds of the proposed 44ha footprint area is already transformed by the existing on-site informal settlement. The remaining third, to the north of the site, is still covered by natural vegetation. The remaining natural veld can be described as a low sparse (or open) shrubland on shallow gravel soils. Calcrete patches are often visible through the low soil cover, and scatterings of quartz rocks were also occasionally observed.

At the time of the site visit the vegetation included a relatively good stand of grassy species (and low weedy herbs, such as *Tribulus* species) because of recent rains. Unfortunately, most of the grasses observed are indicative of overgrazed veld, which also explains the rather dense stands of weedy herbs. A Terrestrial Biodiversity Compliance Statement containing further detail on the vegetation of the proposed site is attached to this Draft EIR as **Appendix 2B**. The findings and recommendations contained in the specialist report are dealt with in Section 12 of this Draft EIR.

5.3 FRESHWATER

The proposed site is traversed by some drainage lines. The drainage lines are very faint and almost unrecognisable, because of human impacts such as informal urban development, grazing of livestock, trampling and littering. All that is left of the drainage lines is shallow depressions with sparse higher vegetation than the vegetation of the surrounding area.

The proposed site is traversed by three drainage lines that are a bit more detectable and these include a small drainage line located in the north of the site, another small drainage line located in the south of the proposed site and a larger drainage line located in the middle of the proposed site. The two smaller drainage lines are endoreic, whereas the larger drainage line is exoreic.

The on-site location of the drainage lines is depicted in Figure 4 below.

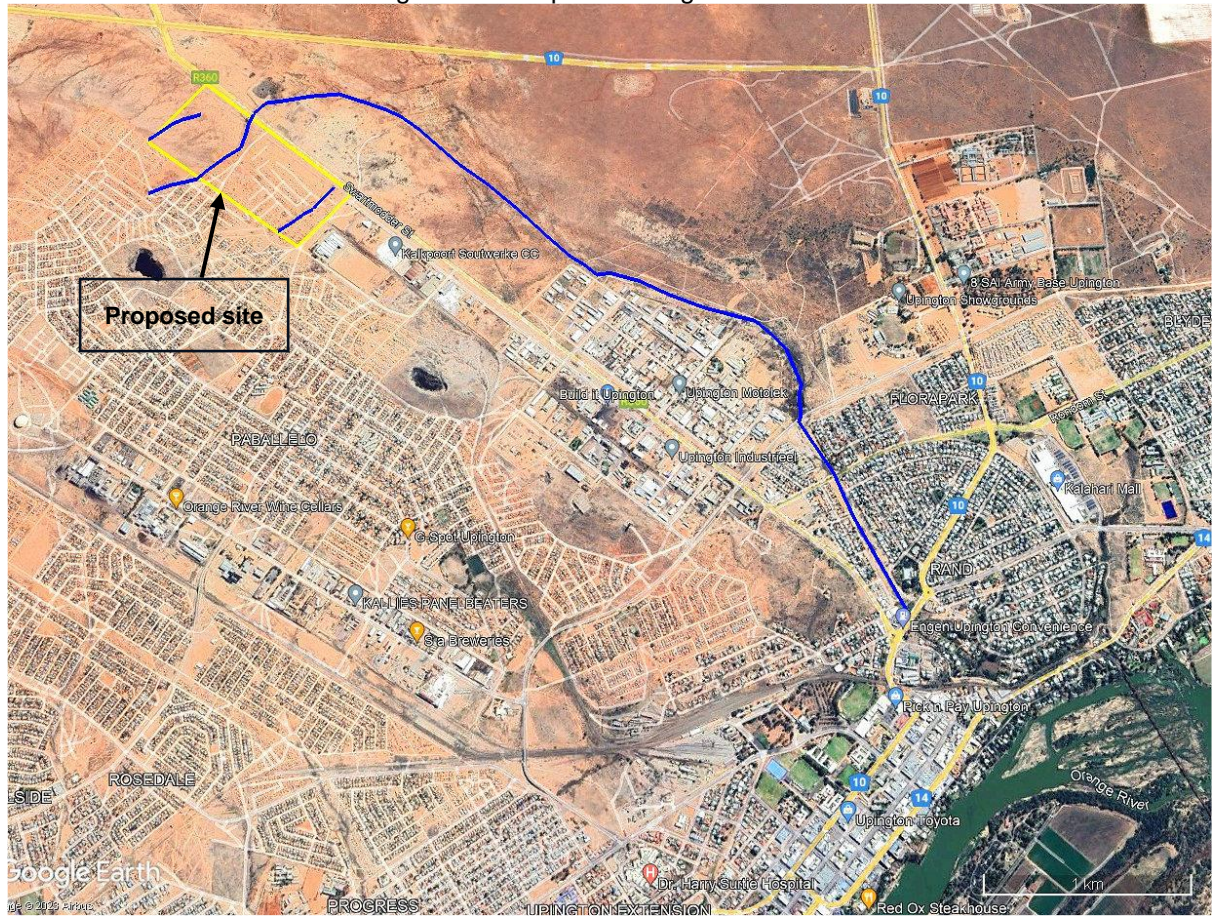


Figure 4: View of the more detectable on-site drainage lines (dark blue lines)

The larger drainage line extends beyond the proposed site to connect to a larger drainage line that stretches in a south-easterly direction around the built-up area and then stops against Dakota Street in town, from where it carries on as part of the city's stormwater drainage system in a straight line to the N10 National Road, where it is no longer easy to follow and ends up in the Orange River through stormwater infrastructure. An Aquatic Biodiversity Assessment for the proposed development is attached hereto as **Appendix 2C** and the findings and recommendations contained in the report are dealt with in Section 12 of this Draft EIR.

5.4 CLIMATE

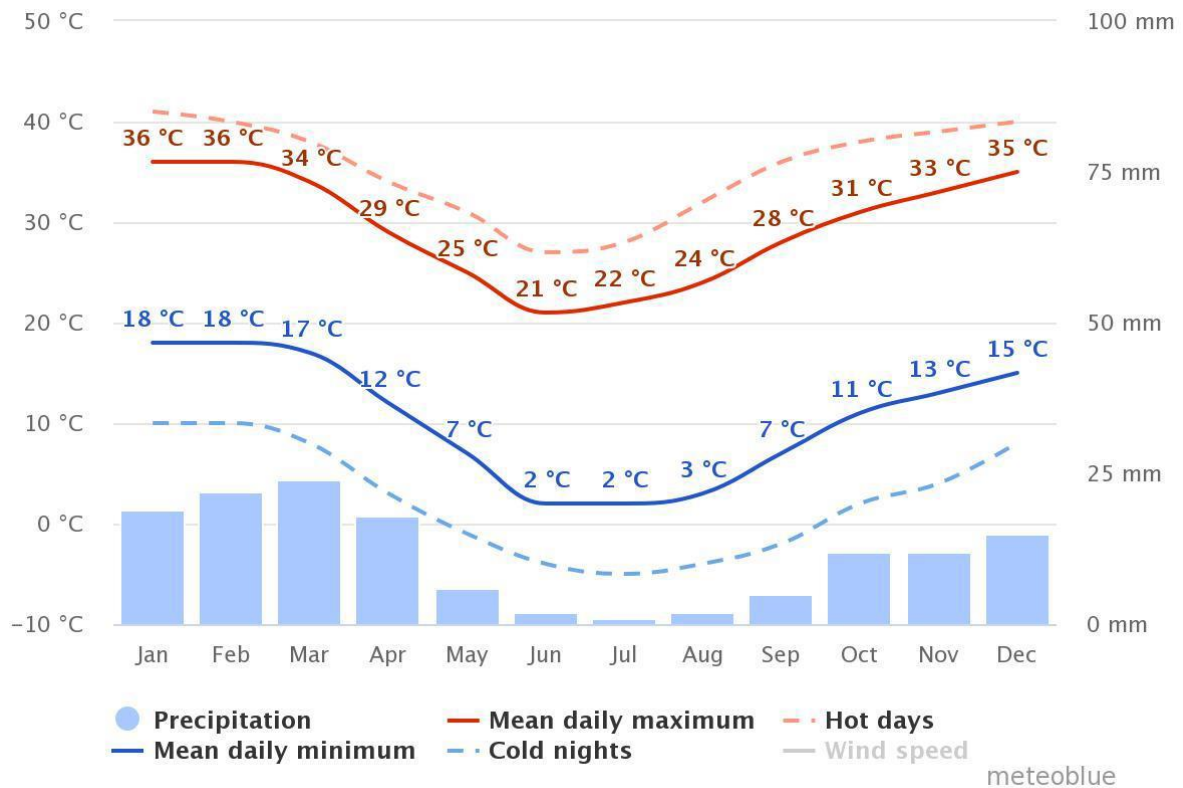


Figure 3: Climate of Upington

Summers in Upington are extremely hot, with temperatures often higher than 40°C. The winters are moderate.

The average annual rainfall only reaching 164mm, with rainfall during summer and little or no rain during winter. The dry season with no rain can last for seven months or longer. (<http://www.upington.climatemps.com> > precipitation).

Sudden electric thunderstorms happen, with fierce downpours, sometimes with hail. Rainfall is erratic, with very long periods of drought that can last for years

The Orange River came down in flood twice over these last two years. The bulk of this water was from the upper catchment and despite the rain in Upington, the lower catchment does not contribute much to the flow.

Upington and surrounds are heavily dependent on the Orange River for their water needs and not on rainfall.

5.5 SOCIO-ECONOMIC CONTEXT

The establishment of the proposed formal housing development will create employment opportunities and skills acquisition for local people during the construction phase and during the operational phase, the proposed development will enable the recipients of the formal housing units to enjoy a higher quality of life when residing in adequate housing that is provided with municipal services such as piped water supply, electricity, flush toilets, refuse collection and increased safety as a result of the provision of street lights.

5.6 HERITAGE FEATURES

Although the proposed site has been transformed by the existing on-site informal settlement, the proposed formal housing development will alter more than 5000m² of land and therefore it is necessary in terms of the National Heritage Resources Act of 1998 that approval from the South African Heritage Resources Agency be obtained for the proposed development. A heritage impact specialist has been appointed to compile a Heritage Impact Assessment for the proposed development on the proposed site and the specialist report is attached hereto as **Appendix 2D**. The findings and recommendations contained in the Heritage Impact Assessment are dealt with further in Section 12.

6. SERVICES

The Dawid Kruiper Local Municipality has been requested to provide written confirmation of how the municipal service needs of the proposed formal housing development will be met. The confirmation will be provided in the EIR.

6.1 WATER

The Dawid Kruiper Local Municipality has been requested to provide written confirmation of how the water supply and other municipal service needs of the proposed formal housing development will be met. The confirmation will be provided in the EIR. A water use licence application will be lodged for construction work that will take place within 32m of the on-site drainage lines.

6.2 WASTEWATER DISPOSAL

The Dawid Kruiper Local Municipality has been requested to provide written confirmation of how waste water disposal and the municipal service needs of the proposed formal housing development will be met. The confirmation will be provided in the EIR.

6.3 ROADS

The existing gravel roads in the township of Paballelo will continue to be used to access the proposed site.

6.4 STORMWATER

The Dawid Kruiper Local Municipality has been requested to provide written confirmation of how stormwater control and the other municipal service needs of the proposed formal housing development will be met. The confirmation will be provided in the EIR.

6.5 SOLID WASTE DISPOSAL

The Dawid Kruiper Local Municipality has been requested to provide written confirmation of how solid waste disposal and the other municipal service needs of the proposed formal housing development will be met. The confirmation will be provided in the EIR.

6.6 ELECTRICITY

The Dawid Kruiper Local Municipality has been requested to provide written confirmation of how electricity supply and the other municipal service needs of the proposed formal housing development will be met. The confirmation will be provided in the EIR.

7. PROCESS TO DATE

The section below outlines the various tasks undertaken to date, the members of the team involved in the project, as well as the Public Participation Process.

7.1 TASKS UNDERTAKEN TO DATE

Table 4: Tasks undertaken in the EIA to date.

DATE	TASK
<u>SCOPING PHASE</u>	
04 July 2023	Draft Scoping Report made available to I&APs and competent authority for comment for at least 30 days and application form submitted to competent authority
04 August 2023	Scoping Report and Plan of Study for EIR submitted to competent authority
16 October 2023	Letter received from competent authority confirming acceptance of Scoping Report and Plan of Study for EIR
<u>ENVIRONMENTAL IMPACT ASSESSMENT REPORT PHASE (THIS PHASE)</u>	
11 December 2023	Draft EIR submitted to competent authority and made available to I&APs for comment

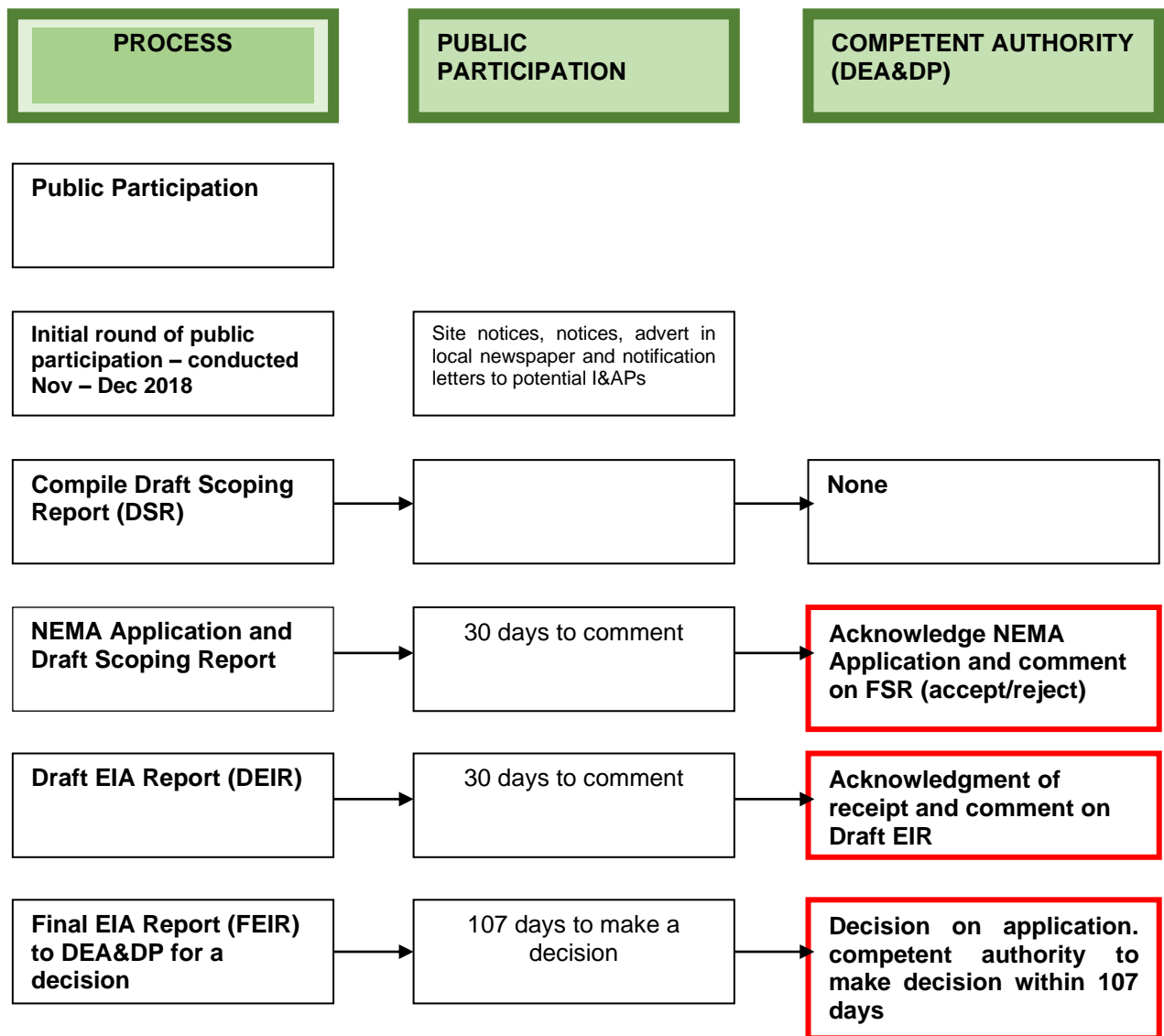


Figure 6. Summary of the EIA process and public participation process. The red indicates the stages where the competent authority will be consulted during the process.

7.2 TASKS UNDERTAKEN DURING THE EIA PHASE

The following tasks were undertaken during the EIA phase of the process:

- Respond to comments on Draft EIR. All comments received (including comments received on the scoping phase) and responses to the comments are incorporated in the EIR; and
- Prepare EIR for submission to competent authority for decision-making.

Please refer to Figure 6 to see where the public participation process takes place in the environmental impact assessment. The I&APs will be given the opportunity to comment on the Draft EIR before the EIR can be compiled and submitted to the competent authority. The figure also indicates the timeframes applicable to each stage in the process.

At the end of the commenting period, the Draft EIR will be revised in response to comments received from I&APs. All comments received and responses given to the comments will be incorporated in the EIR. The EIR will then be submitted to the competent authority for consideration and decision-making.

Correspondence with I&APs will continue to be via post, telephone, electronic mail, pamphlets, posters and newspaper advertisements.

7.3 PROFESSIONAL TEAM

The following professionals are part of the project team.

Table 5: Members of the professional team

Role	SPECIFIC PERSON	ORGANISATION
Environmental Consultancy	Bernard de Witt	EnviroAfrica
Water Use Licensing Authority	Mpho Mangwegape	National Department of Water and Sanitation
Terrestrial Biodiversity Specialist	Peet Botes	PB Consult
Heritage Impact Specialist	Jonathan Kaplan	Agency for Cultural Resource Management
Freshwater specialist	Dr Dirk van Driel	WATSAN AFRICA

7.4 PUBLIC PARTICIPATION

A Public Participation Process was undertaken in accordance with the requirements of the EIA Regulations of 2014 (as amended): Guideline and Information Document Series. *Guidelines on Public Participation 2013*. The issues and concerns raised during the Scoping phase have been dealt with in this report and will continue to be dealt with in the EIA process.

I&APs were identified throughout the process. Landowners and occupiers adjacent to the proposed site, relevant State Departments, Organs of State, the relevant ward councillor, and the District Municipality were added to the database. The list of relevant organisations and individuals contacted is shown in **Appendix 1D**.

Public Participation was conducted for the proposed housing development in accordance with the requirements outlined in Regulation 41, 42, 43 and 44 of the EIA Regulations 2014 (as amended). The issues and concerns raised during the scoping phase of this application continue to be dealt with in the application process.

As such, each subsection of Regulation 54 contained in Chapter 6 of the EIA Regulations will be addressed separately to demonstrate that all potential I&APs were notified of the proposed development.

Table 6: Summary of the public participation process

R41	Posters, Advertisement & Notification letters
(2) (a) (i)	Posters of size 60cm X 42cm were placed on the proposed site, at tuckshops and various other places immediately surrounding the proposed site, at the reception and on the notice board at the offices of the Dawid Kruiper Local Municipality in Upington

(ii)	N/A No feasible alternative sites.
(2) (b) (iii)	Written notification was given to the relevant ward councilor of the Dawid Kruiper Local Municipality.
(iv)	Written notification was given to the Dawid Kruiper Local Municipality and the ZF Mgcawu District Municipality.
(v)	Written notification was given to the following organs of state: <ul style="list-style-type: none"> • Northern Cape Department of Cooperative Governance, Human Settlements and Traditional Affairs • SAHRA • Northern Cape Department of Roads and Public Works • National Department of Water and Sanitation
(vi)	Written notification was given to occupiers and owners of land parcels adjacent to the proposed site.
(2) (c) (i)	An advertisement was placed in the <i>NoordkaapBulletin</i> local newspaper of 06 April 2023
R42 & 34	Register of I&AP
(a), (b), (c), (d)	A register of interested and affected parties was opened and maintained and is available to any person requesting access to the register in writing.
R43	Registered I&AP entitled to comments
3	Potential I&APs were given at least 30 days to register and comment on the Draft reports.
R44	I&APs to be recorded
	A summary of the issues raised and the responses made thereto is given in the Comments-Responses Report

7.4.1 PUBLIC PARTICIPATION UNDERTAKEN DURING THE EIR PHASE:

A number of groups and individuals were identified as Interested and Affected Parties during the pre-application phase and during the scoping phase. A list of the relevant organisations and individuals identified to date, as well as individual I&APs is attached hereto as **Appendix 1D**.

The Draft EIR and associated appendices have been made available to all Registered I&APs for a commenting period of at least 30 days.

The Draft EIR will be revised in response to feedback received from I&APs. All comments received and responses to the comments will be incorporated in the EIR in the form of a Comments-Responses Table. The EIR will then be submitted to the competent authority for a decision to be made on the application.

7.4.2 INTERESTED AND AFFECTED PARTIES

I&APs were notified of the application in writing by means of advertising in a local newspaper, site notices and electronic mail correspondence.

A list of I&APs is included as **Appendix 1D**.

8. ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

Environmental issues were raised through informal discussions with the project team, specialists, I&APs and authorities.

The following potential issues have been identified:

8.1 TERRESTRIAL BIODIVERSITY

The vegetation of the proposed site is identified as Kalahari Karroid Shrubland this vegetation type is categorised as “**Least Threatened**” in terms of the “*Revised List of ecosystems that are threatened and in need of protection*” (GN 47526 of 18 November 2022).

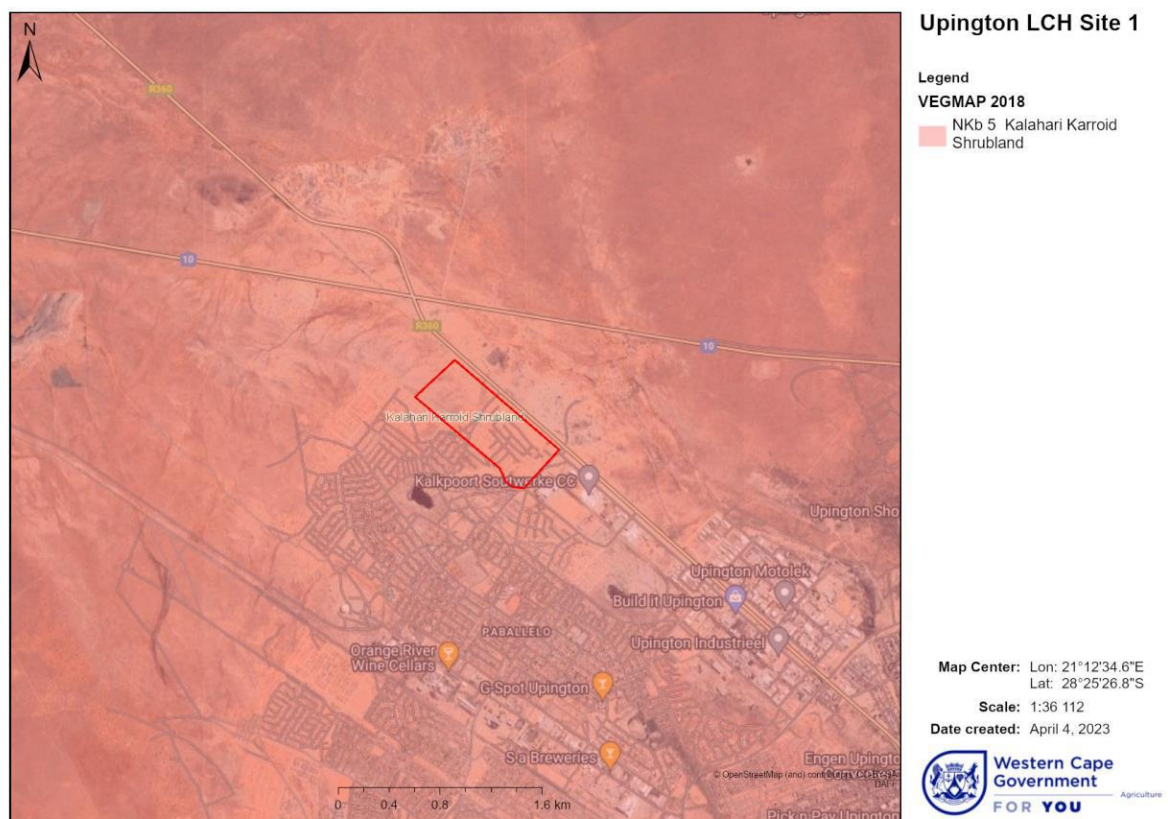


Figure 3: Map showing proposed site (polygon with red boundary) and type of vegetation expected

About two-thirds of the proposed 44ha footprint is already transformed by the existing on-site informal settlement. The remaining third, to the north of the site, is still covered by natural vegetation. The remaining natural veld can be described as a low sparse (or open) shrubland on shallow gravel soils. Calcrete patches are often visible through the low soil cover, and scatterings of quartz rocks were also occasionally observed.

At the time of the site visit the vegetation included a relatively good stand of grassy species (and low weedy herbs, such as *Tribulus* species) because of recent rains. Unfortunately, most of the grasses observed are indicative of overgrazed veld, which also explains the rather dense stands of weedy herbs.

According to the 2016, Northern Cape critical biodiversity areas maps, the north-eastern corner of the site overlaps an ecological support area (ESA) as shown in Figure 4 below.

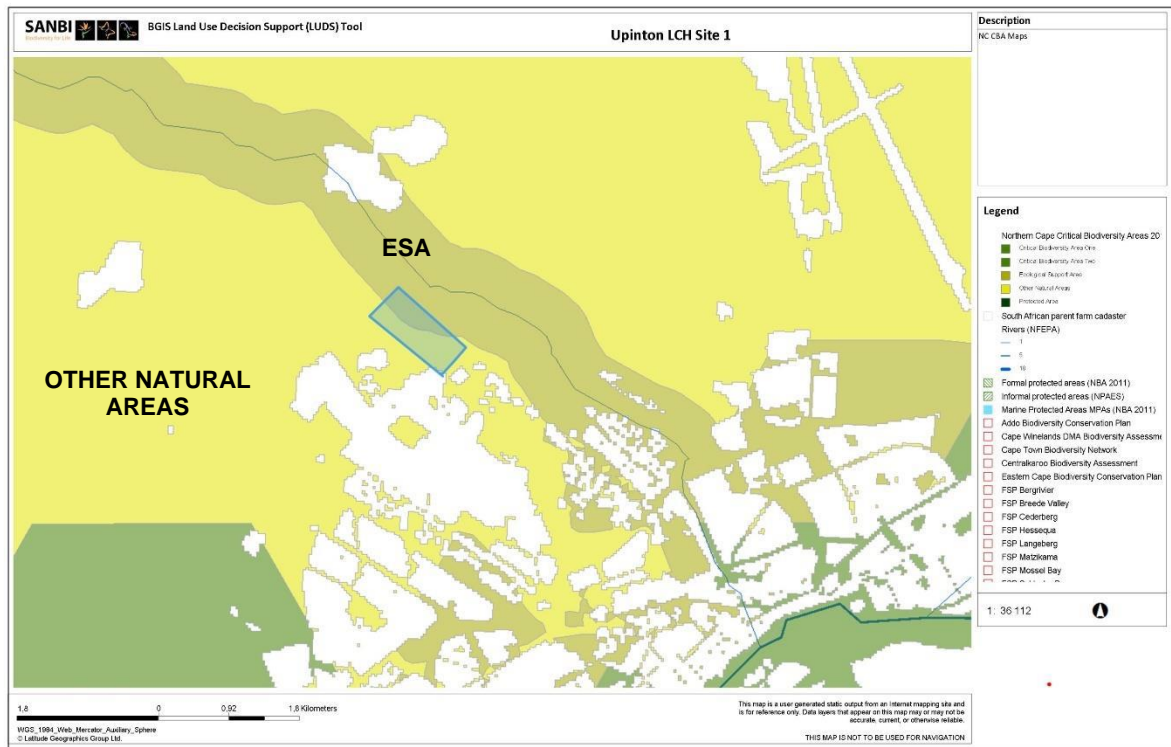


Figure 4: Map showing proposed site and nearby CBA and ESA areas

The ESA is associated with a small episodic stream (a tributary of the Orange River) running on the other side of the R360 (about 290 m further east of the R360) as it drains towards the Orange River. Even though small and non-perennial, the watercourse has been identified as a National Freshwater Ecosystems Priority Areas (“NFEPA”) River in the Northern Cape critical biodiversity areas maps (Holness & Oosthuysen, 2016).

The potential terrestrial biodiversity impacts of the proposed development must therefore be taken into account and with this in mind, a Terrestrial Biodiversity Compliance Statement for the proposed development has been compiled. The report is attached to this Draft EIR as **Appendix 2B** and the findings and recommendations contained therein are dealt with in detail in Section 12 of this Draft EIR.

8.2 AQUATIC BIODIVERSITY

The proposed site is traversed by a some drainage lines. The drainage lines are very faint and almost unrecognisable, because of human impacts such as informal urban development, grazing of livestock, trampling and littering. All that is left of the drainage lines is shallow depressions with sparse higher vegetation than the vegetation of the surrounding area.

The more detectable on-site drainage lines on the proposed site include a small drainage line located in the north of the site, another small drainage line located in the south and a larger drainage line located in the middle of the proposed site. The two smaller drainage lines are endoreic, whereas the larger drainage line is exoreic.

The on-site location of the drainage lines is depicted in Figure 4 below.

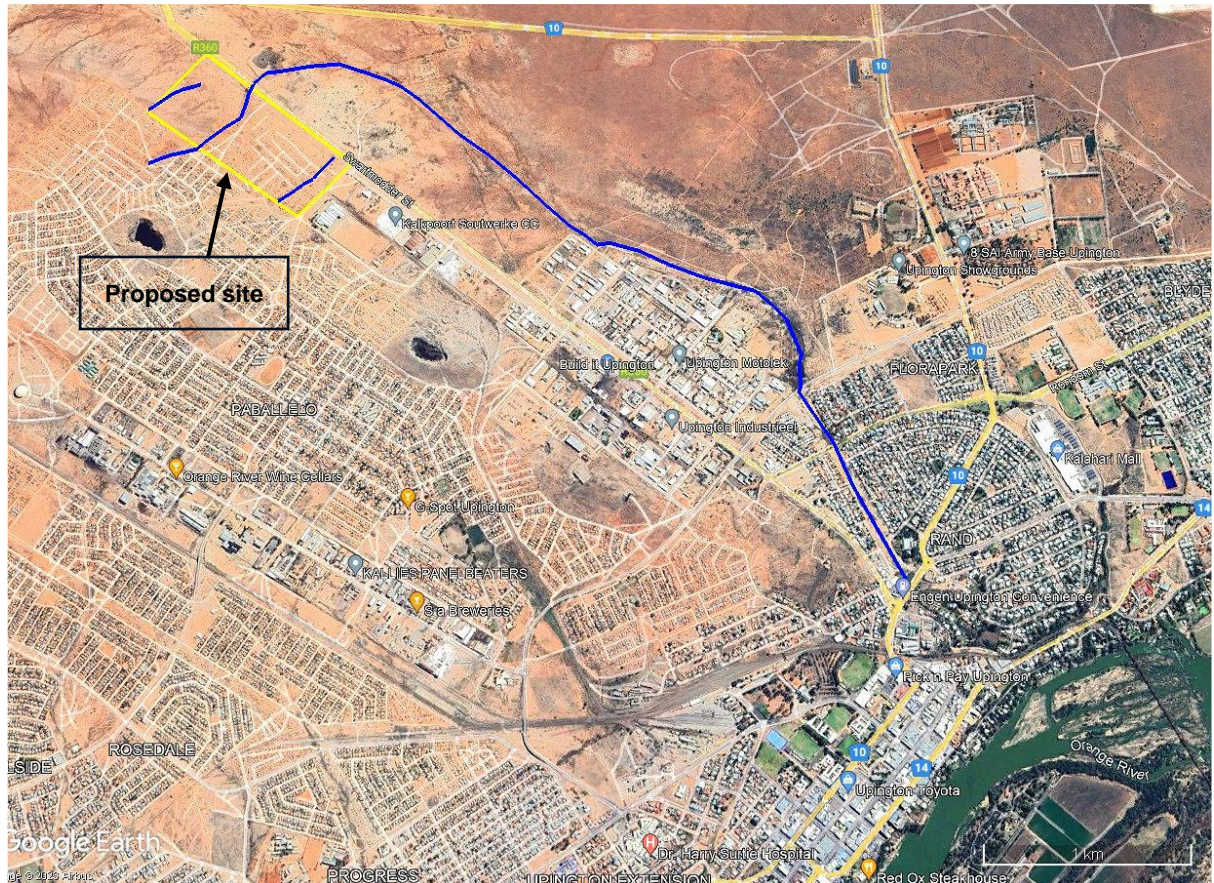


Figure 4: View of the more detectable on-site drainage lines (dark blue lines)

The larger drainage line extends beyond the proposed site to connect to a larger drainage line that stretches in a south-easterly direction around the built-up area and then stops against Dakota Street in town, from where it carries on as part of the city’s stormwater drainage system in a straight line to the N10 National Road, where it is no longer easy to follow and ends up in the Orange River through stormwater infrastructure.

The potential water-related impacts of the proposed development must therefore be taken into account and with this in mind, an Aquatic Biodiversity Assessment for the proposed development has been compiled and is attached hereto as **Appendix 2C**. The findings and recommendations contained in the report are dealt with in Section 12 of this Draft EIR.

8.3 HERITAGE

Although the proposed site has been significantly transformed by the on-site informal settlement, the proposed housing development will alter more than 5000m² of land and therefore it is necessary in terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) that approval from the South African Heritage Resources Agency be obtained for the proposed development. A Heritage Impact Assessment has therefore been compiled for the proposed development and is attached hereto as **Appendix 2D**. The findings and recommendations contained therein are dealt with in detail in Section 12 of this Draft EIR.

8.4 SOCIO-ECONOMIC

It has been considered that the proposed development on the proposed site may cause socio-economic impacts that will affect the lives of the residents of Paballelo. A specialist has been appointed to compile a Socio-economic Impact Assessment for the proposed development on the proposed site and the report is attached hereto as **Appendix 2E**. The findings and recommendations contained in the specialist report are dealt with in detail in Section 12 of this Draft EIR.

8.5 GEOTECHNICAL

A geotechnical study has been conducted for the proposed development as is required in the web-based Screening Tool Report generated for the application. The geotechnical report is attached hereto as **Appendix 2F** and the findings and recommendations contained therein are dealt with in detail in Section 12 of this Draft EIR.

8.6 CUMULATIVE IMPACTS

The proposed site is significantly transformed by the existing on-site informal settlement. It is therefore unlikely that the proposed formal housing development will add much to the impacts caused by the existing informal settlement on the proposed site. In fact it is envisaged that the proposed formal housing development will lower many of the existing impacts on the proposed site that have been caused by the existing informal settlement such as the land pollution caused by the lack of a sewer system for the disposal of wastewater.

The possible cumulative impacts of the proposed formal housing development are dealt with in detail in Section 12 of this Draft EIR.

9 DETAILS OF THE PUBLIC PARTICIPATION PROCESS

Potential I&APs have been identified and will continue to be identified throughout the application process. Landowners and occupiers of land adjacent to the proposed site, relevant organs of state, relevant organizations have been added to the database. A list of State Departments and other organs of state and individual groups identified to date is shown in **Appendix 1D**.

Public Participation will be continued with for the proposed development, in line with the requirements outlined in Regulation 41 of the EIA Regulations, 2014 (as amended). Each subsection of Regulation 41 of the EIA Regulations, 2014 (as amended) will be dealt with separately below to demonstrate that potential I&APs were notified of the proposed development.

R54 (2) (a):

R41 (2) (a) (i): Site notices (A2 and A3 sizes) were placed at different locations around the proposed site.

The posters contained all details as is prescribed in Regulation 41(3) (a) and (b) and the size of the on-site poster was at least 60cm by 42cm as is prescribed in Regulation 41 (4) (a).

R41 (2) (a) (ii): N/A. No alternative site was considered.

R41 (2) b):

R41 (2) (b) (i): N/A. The Applicant is the landowner

R41 (2) (b) (ii): Written notification was circulated to the landowners and occupiers of land adjacent to/ on and within close proximity to the proposed site.

R41 (2) (b) (ii): Written notification was given to the municipal councillor of the ward where the proposed site is located.

R54 (2) (b) (v): Notification in writing was given in which comment was requested from the following State Departments and organs of the state and other organisations that have jurisdiction in respect of an aspect of the proposed activity:

- National Department of Water and Sanitation
- Dawid Kruiper Local Municipality
- ZF Mgcawu District Municipality

R41 (2) (c) (i): An advertisement was placed in the “*Noordkaap bulletin*” local newspaper of 02 April 2023.

R41 (2) (d): N/A

R41 (6):

R41 (6) (a): All relevant facts regarding the development proposal were made available to potential I&APs and this will continue throughout the application process for environmental authorisation.

R41 (6) (b): I&APs were given at least 30 days to register and comment during the pre-application PPP.

R42 (a), (b), (c) and R43(2): A list of potential I&APs has been created and will be added to as the application process continues.

All of the PPP steps that were followed during the pre-application process were followed concerning the Draft Scoping Report, except for the placing of an advertisement again in a newspaper. No comments were received during the pre-application PPP nor on the Draft Scoping Report.

10. SPECIALIST STUDIES

In light of the potential environmental risks and issues relating to the proposed development, the Applicant appointed specialists to proceed with the following:

- Terrestrial Biodiversity Assessment;
- Aquatic Biodiversity Assessment; and
- Heritage Impact Assessment
- Socio-economic Impact Assessment

The specialists were provided with set criteria for undertaking their assessments to allow for comparative assessment of all issues. These criteria are detailed in the Terms of Reference to each specialist and summarised below.

10.1 CRITERIA FOR SPECIALIST ASSESSMENT OF IMPACTS

The impacts of the proposed activity on the various components of the receiving environment were evaluated in terms of duration (time scale), extent (spatial scale), magnitude and significance. 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 therefore is also a judgment value made by the individual assessor. Each specialist has their own particular methodology for determining significance.

10.2 BRIEF FOR SPECIALIST STUDIES

10.2.1 Terrestrial Biodiversity Compliance Statement

Peet Botes of PB Consult conducted the terrestrial biodiversity assessment and compiled a Biodiversity Compliance Statement. Please find the report attached hereto as **Appendix 2B**.

The terms of reference when PB Consult was appointed are the following:

- Give a short statement on the vegetation and its condition encountered on the proposed site and the immediate surroundings;
- Determine and record the position of any species of special significance (e.g. protected tree species, or rare and endangered species) that should be avoided or that may require “search & rescue” intervention; and
- Make recommendations on impact minimisation should it be required.

10.2.2 Freshwater Assessment

Dr Dirk van Driel conducted the Freshwater Assessment and compiled the Freshwater Report. Please find the report attached hereto as **Appendix 2C**.

The appointment of a freshwater specialist was done, as three drainage lines exist on the proposed site that stand to be affected by the proposed development.

The terms of reference for this appointment were the following:

- Literature review and assessment of existing information;
- Describe ecological characteristics of the on-site drainage lines and comment on the conservation value and importance of thereof;
- Evaluate the freshwater issues on the proposed site and propose mitigation measures and measures for the rehabilitation of the site as well as setback line (if applicable).

10.2.3 Archaeological and Cultural Heritage Impact Assessment

The proposed development will alter more than 5000m² of land and therefore it is necessary in terms of the National Heritage Resources Act of 1998 that approval from SAHRA be obtained for the proposed development.

A Heritage Impact Assessment has therefore been compiled for the proposed development.

10.2.4 Socio-economic

The proposed development requires the informal settlers on Paballelo Site to be relocated from their current homes to temporary accommodation elsewhere until the proposed formal housing development is ready for the informal settlers to return and occupy. In light of this, it was considered that the likely socio-economic impact warrants the socio-economic assessment required in the Screening Tool Report generated for the proposed development. The socio-economic assessment was compiled by Eco Thunder and is attached hereto as **Appendix 2E** and the socio-economic impacts of the proposed development are dealt with in detail in Section 12.

11. ENVIRONMENTAL IMPACT ASSESSMENT, SIGNIFICANCE AND MITIGATION METHODOLOGY

The following impact rating table used by EnviroAfrica CC is a basic exponential rating system to assess actual and potential negative environmental impacts of viable alternatives by the EAP.

Environmental activities or aspects are identified, based on:

- the phases of the project,
- the nature (or description) of the actual and potential impacts of the activities.

For every project activity or aspect, various environmental impacts are listed. Every negative impact is allocated a value – as per each of the following criteria:

- Probability (Likelihood)
- Extent
- Duration (Frequency)
- Consequence (Receiving Environment)
- Magnitude (Intensity/severity)

Every negative impact is allocated a (-)value as per each of the following criteria:

- Probability (Likelihood)
- Extent
- Duration (Frequency)
- Magnitude (Intensity/severity)

Once a value is allocated for each of the criterion, the scores are averaged to determine the final impact rating (see Table 6 below).

EnviroAfrica then further assesses environmental significance, based on the nature of the impact, as per the score and colour key which forms part of the table below. This results in impacts having either a low (indicated in green), medium (indicated in yellow) or high (indicated in orange and red) negative significance.

Note: As a baseline, impact rating values/scores are allocated taking the **worst-case** scenario into account *i.e.*, with no mitigation. The baseline rating is compared with those after mitigation has been taken into account *i.e.* the post-mitigation rating. Post mitigation rating is used for the actual impact assessment.

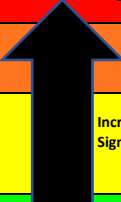
Table 6: Impact Assessment Methodology

SIGNIFICANCE CRITERIA	Very High	High	Medium	Low	Negligible (very-low)	Score
Value	16	8	4	2	1	
Probability (likelihood) (P)	Definite. Impact will definitely occur.	Highly probable. Very likely for impact to occur.	Probable. Impact may likely occur.	Improbable. Impact may occur. Distinct Possibility	Improbable. Low likelihood/unlikely for impact to occur.	
Extent (E)	Impact potentially reaches beyond national boundaries	Impact has definite provincial/potential national consequences	Impact confined to regional area/ town	Impact confined to local region and impact on neighbouring properties	Impact confined to project property / site	
Duration (D)	Permanent The impact is expected to have a permanent impact, with very little to no rehabilitation possible	Long-Term The impact is expected to last for a long time after construction with rehabilitation expected to be 15-50 years. Impact is reversible but only with long-term mitigation	Medium-term The impact is expected to last for some time after construction with rehabilitation expected to be 5 - 15 years. Impact is reversible but only with on-going mitigation	Short-term The impact is expected to last for a relatively short time with rehabilitation expected to be 2-5 years. The impact is reversible through natural process and/or some mitigation.	Very short/ temporary The impact is expected to be temporary and last for a very short time with rehabilitation expected to be less than 2 years. The impact is easily reversible through natural process and/or some mitigation.	
Magnitude (Intensity/ Severity) (M)	It is expected that the activity will have a very severe to permanent impact on the surrounding environment. Functioning irreversibly impaired. Rehabilitation often impossible or unfeasible	It is expected that the activity will have a severe impact on the surrounding environment. Functioning may be severely impaired and may be temporarily cease. Rehabilitation will be needed to restore system integrity	It is expected that the activity will have an impact on the surrounding environment, but it will maintain its function, even if moderately modified (overall integrity not compromised). Rehabilitation easily achieved	It is expected that the activity will have a perceptible impact on the surrounding environment, but it will maintain its function, even if slightly modified (overall integrity not compromised). Rehabilitation easily achieved	It is expected that the impact will have little or no effect on the integrity of the surrounding environment	
Receiving environment (Consequence): (RE)	Very sensitive, pristine area – protected site or species permanently or seasonally present	Unused area containing only indigenous fauna / flora species	Unused area containing indigenous and alien fauna / flora species	Semi-disturbed area already rehabilitated / recovered from prior impact, or with moderate alien vegetation	Disturbed area/ transformed/ heavy alien vegetation	
FINAL RATING (average score)						

IMPACT SIGNIFICANCE RATING KEY:


Negative Impacts

SIGNIFICANCE	RATING	Final rating score / value range
Very Significant	Very High	-11 to -16
Significant	High	-7 to <-11
Increasing Significance	Medium	-4 to <-7
Insignificant	Low	-2 to <-4
	Very Low	-1 to <-2



Positive Impacts

SIGNIFICANCE	RATING	Final rating score / value range
Significant	High	10 to 16
Increasing Significance	Medium	4 to <10
Insignificant	Low	1 to <4



Environmental Significance Rating Methodology (rating criteria and significance key)

Please refer to Appendices 2G1 and 2G2 for more detail on the impact significance rating methodology used.

12. ASSESSMENT OF ENVIRONMENTAL IMPACTS

The specialist studies detailed in **Section 8** were undertaken to determine the significance of the impacts that may arise from the proposed development. The findings of the specialist studies are summarised here. Full copies of the studies are included in **Appendix 2**.

The following studies were undertaken:

12.1 Terrestrial Biodiversity Compliance Statement

The Terrestrial Biodiversity Compliance Statement was compiled by Mr. Peet Botes of PB Consult. Please refer to **Appendix 2B** for the complete document.

12.1.1 Key findings

The vegetation of the proposed site is identified as Kalahari Karroid Shrubland this vegetation type is categorised as “**Least Threatened**” in terms of the “*Revised List of ecosystems that are threatened and in need of protection*” (GN 47526 of 18 November 2022).

About two-thirds of the proposed 44ha footprint area is already transformed by the existing on-site informal settlement. The remaining third, to the north of the site, is still covered by natural vegetation. The remaining natural veld can be described as a low sparse (or open) shrubland on shallow gravel soils. Calcrete patches are often visible through the low soil cover, and scatterings of quartz rocks were also occasionally observed.

At the time of the site visit the vegetation included a relatively good stand of grassy species (and low weedy herbs, such as *Tribulus* species) because of recent rains. Unfortunately, most of the grasses observed are indicative of overgrazed veld, which also explains the rather dense stands of weedy herbs.

12.1.2 Impact Assessment

In light of the proposed site having been largely transformed as well as the remaining natural vegetation showing signs of degradation and the conservation status of the vegetation being Least Threatened, it has been concluded in the Terrestrial Biodiversity Compliance Statement that the impact of the proposed development on terrestrial biodiversity is Low and that even the cumulative impact is Low.

12.1.3 Mitigation Measures

The recommendations given in the Terrestrial Biodiversity Compliance Statement are the following:

- All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan (EMP), which must be developed by a suitably experienced Environmental Assessment Practitioner.
- A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and any other conditions pertaining to specialist studies.
- Before any work is done the footprint must be clearly demarcated. The demarcation must aim at minimum footprint and minimisation of disturbance.
- A Northern Cape Nature Conservation Act permit must be **obtained for impact on the protected species listed** species on site.

- Search & rescue of as many of the *Adenium oleifolium* plants as possible is recommended. Although not a threatened plant species they are of significant medicinal value. Rescued plants should be replanted in similar vegetation to the northwest of the site (away from the urban edge and its associated impact area).
- All alien invasive species within the footprint and its immediate surroundings must be removed responsibly.
- Care must be taken with the eradication method to ensure that the removal does not impact or lead to additional impacts (e.g., spreading of the AIP due to incorrect eradication methods);
 - Care must be taken to dispose of alien plant material responsibly.
 - Indiscriminate clearing of any area outside of these footprints may not be allowed.
 - An integrated waste management approach must be implemented during construction.
 - Construction related general and hazardous waste may only be disposed of at approved waste disposal sites.
 - All rubble and rubbish should be collected and removed from the site to a Municipal approved waste disposal site.

12.2 Aquatic Biodiversity Assessment

The Aquatic Biodiversity Assessment was compiled by Dr Dirk van Driel of Watsan Africa. Please refer to **Appendix 2C** for the complete document

12.2.1 Key findings

The proposed site is traversed by some drainage lines. The drainage lines are very faint and almost unrecognisable, because of human impacts such as informal urban development, grazing of livestock, trampling and littering. All that is left of the drainage lines is shallow depressions with sparse higher vegetation than the vegetation of the surrounding area.

The more detectable on-site drainage lines on the proposed site include a small drainage line located in the north of the site, another small drainage line located in the south and a larger drainage line located in the middle of the proposed site. The two smaller drainage lines are endoreic, whereas the larger drainage line is exoreic.

The larger drainage line extends beyond the proposed site to connect to a larger drainage line that stretches in a south-easterly direction around the built-up area and then stops against Dakota Street in town, from where it carries on as part of the city's stormwater drainage system in a straight line to the N10 National Road, where it is no longer easy to follow and ends up in the Orange River through stormwater infrastructure.

According to WATSAN Africa, given the state of the environment in general in this part of the city and the state of the larger drainage line all the way to the Orange River, the aquatic environment that would be altered is negligible.

12.2.2 Impact Assessment

The likely impacts of the proposed development on aquatic biodiversity include the washing of sediments, sand and mud into the on-site drainage lines and eventual deposition thereof in the urban stormwater management system and the resultant degradation of aquatic habitat.

It is indicated in the Aquatic Biodiversity Assessment that in view of the poor state of the environment in this part of the city and the state of the larger drainage line all the way to the Orange River, the aquatic environment that would be altered is negligible.

12.2.3 Mitigation Measures

The following impact mitigation measures have been recommended:

- A flow path must be kept open and so houses must not be built in the drainage lines. The distance between houses and the drainage lines must remain adequate for houses to remain safe during the occasional events of high-water flow.
- Swales must be properly landscaped
- Litter must regularly be collected in the green zones where the swales are and removed to the municipal landfill site
- Keep construction activities out of the drainage lines.
- Limit the footprint of construction activities.
- Construct during the dry period
- Keep construction period as short as possible and start and finish before next rainy season.

Please refer to the Aquatic Biodiversity Assessment Report attached hereto as **Appendix 2C** for more information.

12.3 Heritage Assessment

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 5000 m² in extent;*

A Heritage Impact Assessment has been compiled by the Agency for Cultural Resource Management. The report is attached to this Draft EIR as **Appendix 2D** and SAHRA will be requested to provide comment on the Draft EIR.

12.3.1 Key findings

It is stated in the Heritage Impact Assessment compiled for the proposed development that *“The study has shown that no important archaeological or palaeontological heritage resources will be impacted by the proposed Upington 1 low-cost housing development”*.

12.3.2 Impact Assessment

In light of the findings mentioned in 12.3.1, the potential impact of the proposed development on heritage is considered low. The Heritage Impact Assessment (**Appendix 2D**, refers) includes some recommended impact mitigation measures and these are indicated in 12.3.2 below.

12.3.3 Mitigation measures

The impact mitigation measures recommended in the heritage impact assessment include the following:

- No archaeological mitigation is required prior to construction excavations commencing.
- If any human burials, or ostrich eggshell caches, for example, are uncovered during construction activities, work in the immediate area should be halted. The finds would need to be reported to the heritage authorities (Att: Ms Natasha Higgitt 021 462 4502) and will require inspection by a professional archaeologist.
- An alert for the occurrence of bones and unrecorded burials, to be communicated to construction personnel, with the Fossil Finds Procedure to be followed in case of finds.
- The above recommendations must be included in the Environmental Management Plan (EMP) for the proposed development.

12.4 Socio-economic

The proposed development requires the informal settlers on Paballelo Site 1 to be relocated from their current homes to temporary accommodation elsewhere until the proposed formal housing development is ready for the informal settlers to return and occupy. In light of this, it was considered that the likely socio-economic impact warrants the socio-economic assessment required in the Screening Tool Report generated for the proposed development. The socio-economic assessment was compiled by Eco Thunder and is attached hereto as **Appendix 2E**.

12.4.1 Key findings

It is indicated in the socio-economic impact assessment that Ward 8 within the Dawid Kruiper Local municipality where Paballelo Site 1 is located, *“is home to a population of 4,887 individuals who face significant challenges in accessing essential services and that the demographics reveal that while the majority of residents have access to water, toilets, and refuse disposal services, improvements are necessary to ensure consistent and reliable service delivery”*.

12.4.2 Impact Assessment

It is indicated in the socio-economic impact assessment that the positive and negative social impacts identified and assessed for the construction phase include the following:

Potential positive impacts

- Job creation
- Stimulated local economic activity through procurement of construction materials and services
- Enhanced skills development and training for local labour force
- Improved access to basic services and amenities
- Enhanced infrastructure development in informal settlements

Potential negative impacts

- Temporary inconvenience and disruption for local residents during construction
- Disruption of local businesses and informal economy during construction
- Potential displacement of residents and temporary loss of livelihoods
- Potential short-term social and economic challenges for affected resident

It is concluded in the socio-economic assessment that with implementation of the recommended impact mitigation measures, the potential negative impacts of the proposed development will be medium to low and the envisaged benefits will be of medium to high significance.

12.4.3 Mitigation measures

The impact mitigation measures included in the socio-economic impact assessment include the following:

- **Enhance Affordability:**
 - a) Ensure that the formalized services remain accessible and affordable for low-income households. Consider the socio-economic status and income levels of the target population when determining service fees and charges.
 - b) Explore subsidy programs, innovative financing models, and partnerships with financial institutions to support affordability and assist low-income households in accessing the formalized services.
- **Job Creation and Skills Development:**
 - a) Maximize local employment opportunities during the construction phase by prioritizing the hiring of local residents and businesses. Collaborate with local job placement agencies, training institutions, and community organizations to facilitate skills development and training programs that align with the needs of the project and local labour market.
 - b) Establish long-term job creation initiatives in the operation and maintenance of the formalized services, providing sustainable employment opportunities for community members. Offer training and capacity-building programs to enhance the skills and employability of local residents in service provision and maintenance roles.
- **Community Engagement and Social Development:**
 - a) Establish an ongoing community engagement platform to foster open communication, address concerns, and gather feedback throughout the project's lifecycle. Regularly update the community on project progress, timelines, and anticipated impacts.
 - b) Develop and implement social development programs that address the identified social issues, such as unemployment and drug-related concerns. Collaborate with local organizations, social workers, and healthcare professionals to provide counselling services, rehabilitation programs, and community support initiatives.
- **Environmental Management and Resource Efficiency:**
 - a) Implement comprehensive environmental management practices to minimize the project's environmental footprint and mitigate potential negative impacts. This includes proper waste management, pollution control measures, and adherence to environmental regulations.
 - b) Adopt resource-efficient technologies and practices to minimize the project's demand on water, energy, and land resources. Emphasize the use of renewable energy sources, water-saving measures, and sustainable land use practices in the design and operation of the formalized services.
- **Collaboration and Partnerships:**
 - a) Foster collaboration and partnerships with relevant stakeholders, including non-governmental organizations, private sector entities, and community-based organizations. Leverage their expertise, resources, and networks to enhance the project's implementation and ensure long-term sustainability.
 - b) Sustain the stakeholder engagement process throughout the project's lifecycle. Regularly communicate with stakeholders, provide updates, and address any concerns or issues that may arise.

12.5 General

Impact management, mitigation, and monitoring measures are captured in the impact assessment and significance rating in **Appendices 2G1** and **2G2**, as well as in the EMPr attached hereto as **Appendix 2I**. The EMPr forms part of the contractual obligations to which all persons including, but not limited to, contractors / sub-contractors or employees involved in construction, operation, maintenance, or decommissioning work, must be committed. It also serves as a baseline information document for the applicant and any entity working on behalf of the applicant, during the various phases of the proposed activity.

The EMPr aims to comply with Section 24N of the NEMA (as amended), as well as any additional specific information requested by any state department, including the competent authority. The overall objective of the EMPr is to direct and guide all responsible parties, binding all contractors, sub-contractors, and all other persons working on the site to adhere to the terms and conditions of the EMPr during the construction, operation, maintenance, and decommissioning (if applicable) phases of the project. The overall outcome of the EMPr is to prevent avoidable environmental damage and/or minimize or mitigate unavoidable environmental damage associated with the construction, operation, maintenance, and possible decommissioning phases of the proposed project.

The specific outcomes of the EMPr will be achieved by ensuring that the mitigation and management measures detailed in the EMPr are implemented and adhered to throughout the duration of the project. Compliance monitoring and independent auditing facilitate verification of the achievement of the EMPr outcomes and ultimately, fulfilment of the EMPr objectives. The EMPr is partly prescriptive (identifying specific people or organizations to undertake specific tasks, to ensure that impacts on the environment are minimized) but it is also a dynamic, evolving document, in that information gained during the various activities and/or monitoring of procedures on-site, could lead to changes in the EMPr.

The EMPr:

- identifies project activities that could cause actual environmental damage (or potential environmental risks) and provides a summary of actions required;
- identifies persons responsible for ensuring compliance with the EMPr;
- provides standard procedures to avoid and/or minimize the identified negative environmental impacts and to enhance the positive impact of the project on the environment;
- provides the site and project-specific rules and actions required, including a site plan/s showing:
 - areas where construction, maintenance, or demolition work may be carried out;
 - areas where any material or waste may be stored;
 - allowed access routes, parking, and turning areas for construction or construction-related vehicles;
- forms a written record of procedures, responsibilities, requirements, and rules for contractor/s, their staff, and any other person who must comply with the EMPr;
- provides a monitoring and auditing program to track and record compliance and identify and respond to any potential or actual negative environmental impacts; and
- provides a monitoring program to record any mitigation measures that are implemented

13.ENVIRONMENTAL IMPACT STATEMENT

13.1 Summary of the key findings of the impact assessment

It is evident from the key findings discussed in detail in Section 12 that the proposed development is likely to cause medium to low negative environmental impacts when the recommended impact mitigation measures are implemented and medium to high positive environmental impacts. The impact mitigation measures are contained in the EMPr and so the proposed development can be authorised with strict adherence to the EMPr included as a condition of the environmental authorisation to be strictly enforced.

14 DETAILS AND EXPERTISE OF THE EAP

This Scoping Report was prepared by Bernard de Witt, who has more than 30 years of experience in environmental management and environmental impact assessments.

After qualifying with a B. Sc. in Forestry and a B. A. (Hons) in Public Administration at the University of Stellenbosch, Bernard joined the Department of Forestry as an Indigenous Forest Planner in 1983, going on to become Manager of the Table Mountain Reserve with the Cape Town Council.

He then joined Cape Nature Conservation (CNC) and headed its Conservation Planning Section before taking up the position of District Manager of the Boland area (inc. the Hottentots Holland and Kogelberg). As a Regional Ecologist, he co-ordinated managerial and scientific inputs into Provincial Nature Reserves in the Boland, Overberg and West Coast regions of the Western Cape Province.

For the last four years of his employment, he assessed and evaluated development applications, from an environmental perspective, on behalf of CNC (now Western Cape Department of /environmental Affairs and Development Planning ("DEA&DP")). Since he left DEA&DP, he has been involved in environmental consulting in the private sector as a member of EnviroAfrica.

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