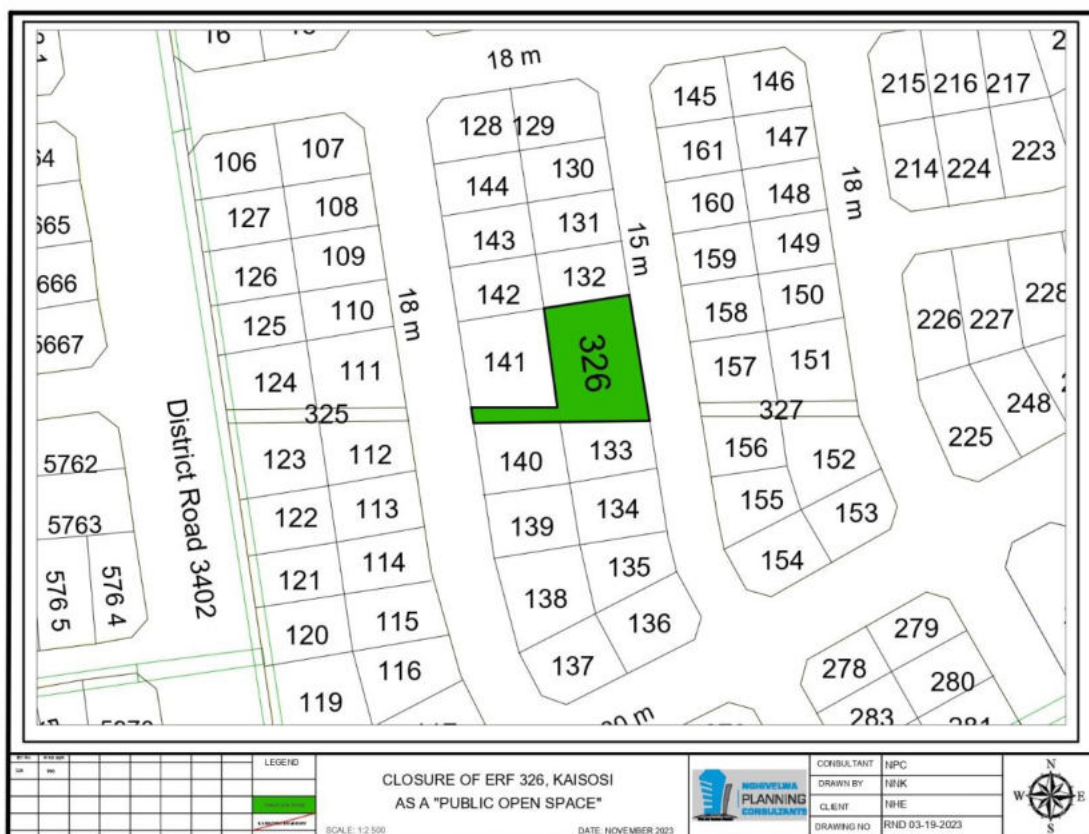


ENVIRONMENTAL IMPACT ASSESSMENT SCOPING REPORT

FOR THE
PERMANENT CLOSURE OF ERF 326, KAISOSI AS A “PUBLIC OPEN SPACE” AND
SUBSEQUENT REZONING TO “RESIDENTIAL” IN RUNDU TOWN, KAVANGO
EAST REGION.



DECEMBER 2023

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LIST OF ABBREVIATIONS

TERMS	DEFINITION
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
DEA	Department of Environmental Affairs
PPPPs	Projects, Plans, Programmes and Policies
NDC	Namibia Development Consultants
SANS	South African National Standards
I&APs	Interested and Affected Parties
PM	Particulate Matter
NPC	Nghivelwa Planning Consultants
NHE	National Housing Enterprise
GRN	Government of the Republic of Namibia
MEFT	Ministry of Environment, Forestry and Tourism

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1. INTRODUCTION AND BACKGROUND

The National Housing Enterprise has constructed a house on Erf 326, Kaisosi and subsequently allocated and sold the property to a private individual who is a beneficiary of low cost housing in Rundu Town, Okavango East Region. Erf 326, Kaisosi currently measure 980m² in extent and is zoned for “Public Open Space” purposes. In order for the transfer of Erf 326, Kaisosi to be finalized, the statutory town planning process of permanent closure of Erf 326 as a “Public Open Space” and subsequent rezoning to “Residential” should first be completed and any permanent closure of a public open space requires an Environmental Clearance Certificate.

Thus, the National Housing Enterprise has appointed Nghivelwa Planning Consultants to conduct an Environmental Impact Assessment and Environmental Management Plan (EMP) for the Permanent closure of Erf 326, Kaisosi as a “Public Open Space” to allow for the formalization of the house already constructed and finalize the registration of the property into the name of the beneficiary. The Environmental Impact Assessment has been conducted to meet the requirements of Namibia’s Environmental Management Act, 2007 (Act No. 7 of 2007).

An EIA may be defined as: a formal process to predict the environmental consequences of human development activities and to plan appropriate measures to eliminate or reduce adverse effects and to augment positive effects.

EIA thus has three main functions:

- To predict problems,
- To find ways to avoid them, and
- To enhance positive effects.

1.1. Terms of Reference

The proposed permanent closure of Erf 326, Kaisosi as a “Public Open Space” and subsequent rezoning to “Residential” is a listed activity that cannot be undertaken without an Environmental Clearance Certificate. Therefore, as part of the commissioning process an Environmental Impact Assessment (EIA) is required. Thus the National Housing Enterprise appointed Nghivelwa Planning Consultant to provide consultancy services to undertake an

environmental impact assessment to comply with the Environmental Management Act, 2007 (Act No. 7 of 2007).

The Terms of Reference (ToR) for the consultants are, but not limited to the following:

- The collection of all possible data on the environmental, social and natural resource components and parameters of necessity;
- A description of the location of the proposed project including the physical area that may be affected by the project activities;
- Description of the design of the proposed project;
- Description of the activities that will be undertaken during the project construction, operation and decommissioning phases;
- Listing of the materials to be used, products and by products, including waste to be generated by the project and the methods of disposal;
- Identification of the potential environmental impacts of the proposed project and
- The mitigation measures to be taken during and after implementation of the project;
- Accidents during the project cycle;
- Establishment of a plan to ensure the health and safety of the workers and neighbouring communities;
- Identification of the economic and socio-cultural impacts of the proposed project;
- Economic and social analysis of the project including project risk and measures to mitigate them.
- Establishment of an action plan for the prevention and management of possible impacts (EMP).
- The consultant will prepare recommendation on the project for its future use.

1.2. Acknowledgement

Nghivelwa Planning Consultant has prepared this EIA Scoping Report on behalf of the National Housing Enterprise as the proponents of this project. The Project proponent has provided the necessary information during the EIA process and preparation of the Scoping Report. The Consultant (Nghivelwa Planning Consultant) gratefully acknowledges the contribution provided by the proponent as well as the support and interest shown by all the identified stakeholders.

2. PROJECT DESCRIPTION

The project entails the proposed permanent closure of Erf 326, Kaisosi as a “Public Open Space” and subsequent rezoning to “Residential”, the property is located in Rundu Town, Kavango East Region in the north central part of Namibia. The purpose of the exercise is to formalize the house already constructed on Erf 326, Kaisosi and to finalize the transfer of the property to the beneficiary.

This Scoping report is for the permanent closure of a public open space to allow for the formalization of a house already constructed on Erf 326, Kaisosi and does not include the construction of infrastructure of the house.

The beneficiary and the Rundu Town Council are already responsible for the maintenance of the site as the house is already occupied, such as waste management from site, noise pollution control and safety as well as maintenance of the municipal services.

The layout of the site is shown in figure 1 below.



Figure 1: Permanent closure Plan

2.1. Location of the site

Erf 326, Kaisosi is located in Kaisosi Proper, Rundu Town, Kavango East Region in Namibia. The coordinates for the site are: 17° 54.377'S, 19° 47.974'E The locality plan for the site is shown below.

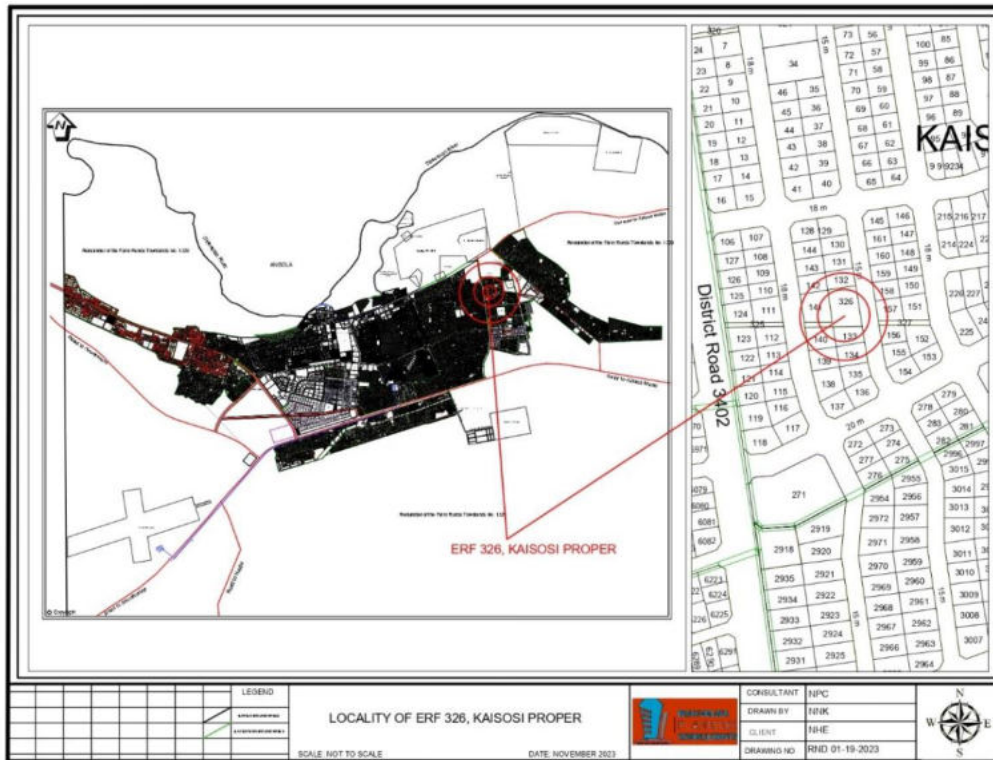


Figure 2: Locality Plan of Erf 326

The google image below shows the locality of Erf 326, Kaisosi



Figure 3: Locality Image of Erf 326

2.2. Land Zoning and Ownership

Erf 326, Kaisosi is currently owned by the Rundu Town Council. However, the Rundu Town Council has allocated the Erf to the National Housing Enterprise as part of a larger allocation of plots to the national housing entity to develop low cost housing in the town of Rundu. It was however discovered later that the Erf is zoned for “Public Open Space” purposes after the construction of the house was already completed.

2.3. Site Descriptions

Erf 326, Kaisosi currently measure 980m² in extent there is a house that is already constructed on the property. As per the locality plan in figure 2, Erf 326, Kaisosi is located on the eastern side of Rundu Town. The area around Erf 326, Kaisosi is mostly used for residential purposes, thus the proposed development will blend in with the surrounding environment. There will be no further construction of services or buildings on the property once the EIA and town planning process is completed.



Figure 4: NHE House on Erf 326, Kaisosi

2.4. Proposed Activities

The proposed activities entail the following:

- Permanent closure of proposed of Erf 326, Kaisosi and subsequent rezoning to “Residential”.

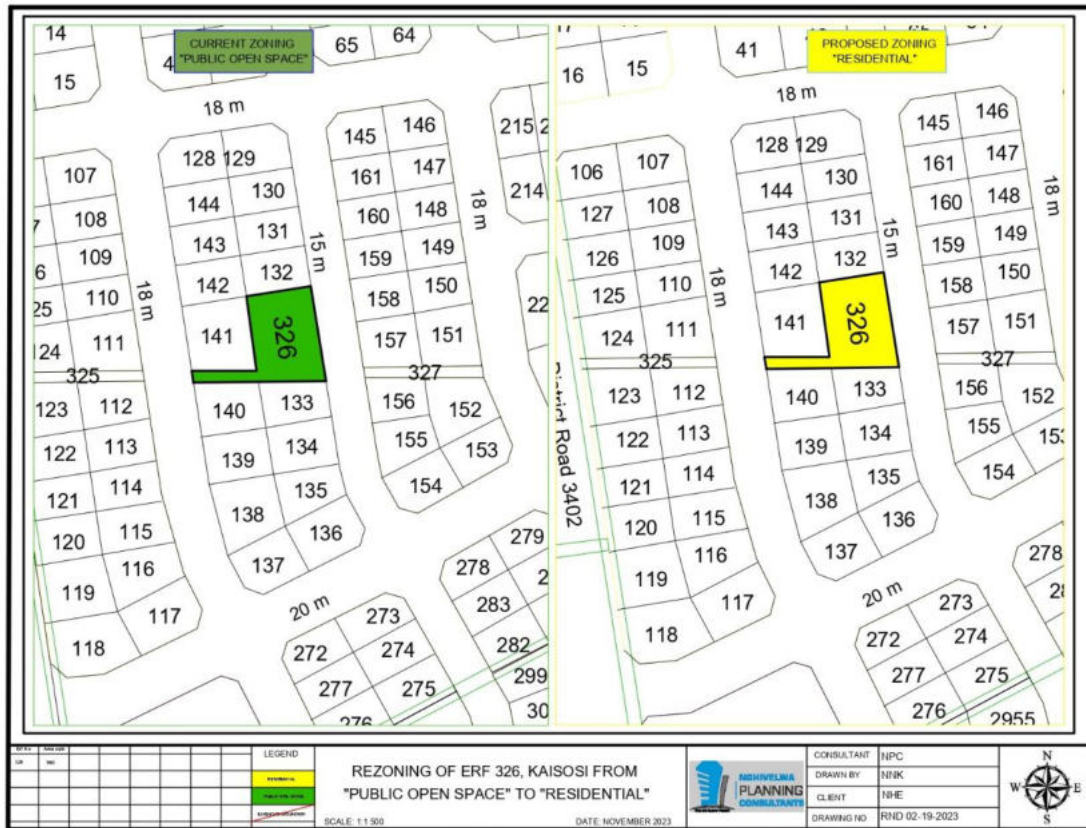


Figure 5: Rezoning plan of Erf 326, Kaisosi

After the successful implementation of the town planning procedure, the closed and rezoned erf will still be used for residential purposes and no further subdivision or consolidation will be carried out.

2.5. Need and Desirability of the Proposed Project

The National Housing Enterprise is mandated by the Government of the Republic of Namibia through the National Housing Enterprise Act 5 of 1993, amended to provide for the basic housing needs of Namibians. NHE mostly focuses on providing housing to the low and medium income people.

Thus, the proponent is desirous to close Erf 326, Kaisosi as a “Public Open Space” and subsequent rezoning to “Residential” to allow them to formalize the house already constructed on the property and the registration of the property in the name of the beneficiary. The Namibian Constitution guarantees the right to shelter for every Namibian and the Central Government has made access to housing as a priority over the years. However, due to the lack of resources and poor coordination between central, regional and local government there is a significant shortfall in the provision of housing in the country.

The formalization of one erf to accommodate a residential property will contribute to the provision of housing in Rundu Town and Namibia. This is mostly true as more and more Namibians find it hard to gain access to affordable and decent shelters that they can proudly call their own.

3. ANALYSIS OF ALTERNATIVES

In terms of environmental impact assessment best practice, assessment of potential impacts from a proposed activity must include the assessment of alternatives. Assessment of alternatives is undertaken to identify the option that will minimise harm to the environment and may include site, technology and other alternatives, but must always include the option of not implementing the activity, known as the “no-go” alternative.

3.1. Alternative Site

The proponent has the option of undertaking the proposed development in a different location other than the chosen site. This could also entail acquiring land elsewhere to carry out the development.

Due to land availability and the fact that a house is already constructed and allocated to the beneficiary, the proposed site, Alternative 1, is the only site that has been identified for the proposed development during the consultation process with the proponent and the Rundu Town Council. Therefore, no alternative site has been identified or considered during this study.

The following reasons justify the use of the proposed site for the development:

- The proponent owns the property and it will not make sense to purchase other land parcels for this project.
- The proposed site is easily accessible and already connected to existing municipal services such as roads, electricity, water and sewerage connection.
- The land is in a residential zone, therefore no red data recorded on the land which might hinder the development on the land.
- There is adequate space for the house on the land.
- There is a house already constructed on the property.
- The beneficiary has already been allocated the house and they are already residing there.

3.2. The “No Project” Alternative

The No-Go Option is the option not to proceed with the proposed activity, implying a continuation of the current situation/ status quo. Therefore, the No-go Alternative would mean that the Permanent closure of Erf 326, Kaisosi as a “Public Open Space” and subsequent rezoning to “Residential” does not take place and thus the house already constructed on the property will not be formalized. Should the proposed development not take place, negative consequences can be expected. From the environmental-socio-economic point of view, the no project option is the least preferred option due to the following factors:

- The beneficiary will not be able to transfer the property into their name, thus leaving them without security of land tenure.
- The existing house might have to be demolished, leading to a wastage of resources and promoting unsustainable construction activities.
- The Rundu Town Council will not make progress towards the provision of low cost housing to its residents.
- NHE’s contribution towards housing provision will be diminished in Rundu Town and the rest of the country.
- The current land use of the property will not conform to the Rundu Zoning Scheme.
- Loss of revenue to the Rundu Town Council and they will not be able to levy rates and taxes on the land.

This is therefore not a desirable alternative.

4. POLICY AND OTHER RELEVANT LEGISLATION

The following are the legal instruments that govern or advocate the permanent closure of public open spaces:

SUBJECT	INSTRUMENTS AND CONTENT	APPLICATION TO THE PROJECT
The Constitution of the Republic of Namibia	General human rights – eliminates discrimination of any kind The right to a safe and healthy environment Affords protection to biodiversity	Ensure these principles are enshrined in the documentation of the exploration project
Environmental Management Act EMA (No 7 of 2007)	Requires that projects with significant environmental impact are subject to an environmental assessment process (Section 27). Details principles which are to guide all EAs.	Ensure that the permanent closure is carried out within the parameters of the Act.
Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 487)	Details requirements for public consultation within a given environmental assessment process (GN 30 S21). Details the requirements for what should be included in a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).	Public participation was carried out in accordance with these regulations and the Urban and Regional Planning Act, 5 2018.
Forestry Act No 27 of 2004	Provision for the protection of various plant species	Some species that occur in the area are protected under the Forestry Act and a permit is therefore required to remove the species
Hazardous Substances	Control of substances which may cause injury	The waste generated on site should be suitably

Ordinance 14 of 1974:	or ill-health or death of human beings because their toxic, corrosive, irritant, strongly sensitizing or flammable nature	categorised/classified and disposed of properly and in accordance with the measures outlined in the Ordinance and Bill
The Nature Conservation Ordinance (No. 4 of 1975)	Prohibits disturbance or destruction of protected birds without a permit. Requires a permit for picking (the definition of “picking” includes damage or destroy) protected plants without a permit	Protected plants will have to be identified during the planning phase of the project. In case there is an intention to remove protected species, then permits will be required
Forestry Act 12 of 2001 Nature Conservation Ordinance 4 of 1975	Prohibits the removal of any vegetation within 100 m from a watercourse (Forestry Act S22(1)). Prohibits the removal of and transport of various protected plant species.	Even though the Directorate of Forestry has no jurisdiction within townlands, these provisions will be used as a guideline for conservation of vegetation.
Convention on Biological Diversity, 1992	Protection of biodiversity of Namibia	Conservation-worthy species not to be removed if not absolutely necessary.
Water Act 54 of 1956 Water Resources Management Act 24 of 2004	The Water Resources Management Act 24 is presently without regulations; therefore, the Water Act 54 is still in force The Act provides for the management and protection of surface and groundwater resources in terms of utilisation and pollution	Obligation not to pollute surface water bodies

National Heritage Act 27 of 2004	Section 48(1) states that “A person may apply to the [National Heritage] Council [NHC] for a permit to carry out works or activities in relation to a protected place or protected object	Any heritage resources (e.g. human remains etc.) discovered during construction requires a permit from the National Heritage Council for relocation
Labour Act 11 of 2007	Details requirements regarding minimum wage and working conditions (S39-47).	Employment and work relations
Health and Safety Regulations GN 156/1997 (GG 1617	Details various requirements regarding health and safety of labourers.	Protection of human health, avoid township establishment at areas that can impact on human health.
Public Health Act 36 of 1919	Section 119 states that “no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.”	The Rundu Town Council should ensure that all contractors involved during the construction, operation and maintenance of the proposed project, if any, should comply with the provisions of these legal instrument
Water Act 54 of 1956	The Water Resources Management Act 24 of 2004 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force: Prohibits the pollution of underground and surface water bodies (S23(1)). Liability of clean-up costs after permanent closure/ abandonment of an activity (S23(2)).	The protection of ground and surface water resources should be a priority. The main threats will most likely be concrete and hydrocarbon spills during construction and hydrocarbon spills during operation and maintenance.

Urban and Regional Planning Act no 5 of 2018	Details the functions of the Urban and Regional Planning Board including their consideration when assessing an application for Permanent closure of a public open space (S3)	The proposed layout and land uses should be informed by environmental factors such as water supply, soil etc. as laid out in Section 3.
Local Authorities Act no 23 of 1992	Details the procedures to be followed for the permanent closure of public open spaces in Local Authority Areas.	The public must be informed on the permanent closure of public open spaces.

Table 1: Legislation related to the permanent closure of public open spaces

5. BASELINE DATA

5.1. Climatic conditions

The climate of the Kavango East Region is semi-arid with an average annual rainfall of 400 – 600 mm (van der Merwe 1983). The 500 mm rainfall isohyet cuts diagonally through the middle of the region in a broad loop from south-west to north-east, with lower mean annual totals recorded for the south. The region receives summer rainfall from December to April, and decades of regional climatic data record no rainfall between May and October.

The mean annual temperature of the regional weather station at Rundu is 22.2°C. Mean summer and winter temperatures differ by more than 5°C with a mean summer temperature (December to February) of 24.8°C and a mean winter temperature (June to August) of 17.1°C (P. Hutchinson, May 1999). Diurnal temperature ranges are highest in winter when frosts can occur. The frequency of high winds increases significantly from August onwards, reaching a maximum in November just prior to the onset of the rainy season. During the same period wind speeds also increase.

5.2. Geology, Topography and drainage

Kavango region can be described as a large aggradational land surface characterised by an increasing differentiation of aeolian sands. True Kalahari sands deposited on the margins of the Kalahari Basin during the Tertiary desert-forming era (1.8 to 66 million years BP) underlie younger red sands deposited and later redistributed from the Late Holocene period to the present. During the latter period, wetter conditions prevailed from 49,000 to 34,000 years BP. From 34,000 to 27,000 years BP a period of aridity favoured the precipitation of calcrete deposits, after which a short return to wetter conditions prevailed (27,000 to 25,000 years BP). In the most recent geological time frame, from 25,000 BP to present, a distinct return to aridity has been documented (Heine & Geyh, 1984).

Topographically, Kavango East Region is flat to gently undulating with maximum altitude differences of approximately 200 m across this vast region. The steepest relief gradients are encountered towards the Kavango River and where dry rivers (omiramba) have incised the surface mantle of sand. Regional elevations gradually descend from 1200 m.a.s.l in the extreme south and south-west to 1150 m.a.s.l west of Rundu, and to 1000 m at Andara on the Caprivi West boundary.

The south-north regional gradient is thus of the order of 0.8 m/km (0.08%). Gentle slope factors combined with the deep, highly permeable soils of the sand plains encourage very little surface runoff, and with the exception of rare high intensity rainfall events, soil absorption capacities are rarely exceeded. However, where long slopes, unstable soils and intensive forms of land use are combined, aeolian and sheet-wash erosion surfaces are evident.

Deep horizontal drainage occurs after heavy rains in the catchment areas of well-defined omiramba, although surface flow is ephemeral and generally truncated by sand drift and alluvial deposits. Surface waters collecting at the confluences of deep omiramba with the eastward draining Okavango River are largely the result of lateral flooding by the Okavango River.

5.3. Soils

The Okavango East Region is dominated by the Aeolian sand and water-deposited gravel that are dominant in the soil body of the region. The relatively sterile sandy soils of the Kavango are enriched by silt, deposited by the Okavango River, in both the river terraces and on the flood plain.

5.4. Fauna

During the site inspection, no animals were observed on site because the site is situated in the residential zone of the built up area of Rundu Town.

5.5. Flora

The vegetation of the Kavango East Region comprises of dry medium to tall woodland and savannah associated with the featureless plains. Dominant vegetation types are *Baikiaea plurijuga*, *Terminalia* spp, *Combretum* spp, *Burkea africana*, *Pterocarpus angolensis*, *Lonchocarpus* spp and *Guibourtia coleosperma*. Based on the physical observations, the proposed site is generally covered with soil and no vegetation was observed. Therefore, no clearing of land is going to be undertaken as the site has already been cleared. No red data or endangered species were noted / recorded during the site visit on the 17th November 2023, therefore it was decided that it is not necessary to include an ecological specialist study in the report.

6. SOCIO-ECONOMIC ENVIRONMENT

According to Namibia Population and Housing Census of 2011, Rundu is experiencing a relatively high rural-urban migration rate compared to other big town in Namibia. The town had a population of 63 430 inhabitants in 2011. The following are demographic figures for Rundu.

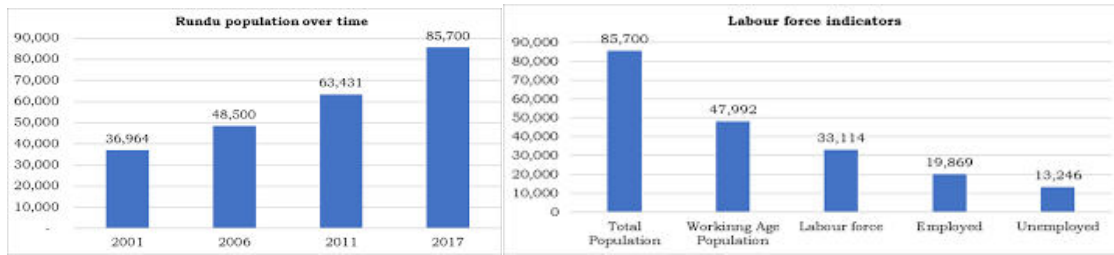


Figure 6: Demographic figures on Socio-Economic Environment

There are five tertiary Institutions in Rundu, namely: University of Namibia Rundu campus, Institute of Open Learning (IOL), Rundu Vocational Training Centre, Namibia College of Open Learning (NAMCOL) and Triumphant College. Additionally, Namibia University of Science and Technology has a center in Rundu that provide support for students who are studying on distance. There are 13 primary schools, 10 secondary schools and 3 combined schools.

Among the primary schools 12 are government school with no hotel, while 1 is private with hostel. However, there are 4 government secondary schools with no hostels and 2 government secondary schools with hostels. Private secondary schools are 4, all with hostels including the highly reputable St Boniface College, a Roman Catholic Church school 33km east of Rundu, which has been ranked the best-performing school in Namibia for the eighth consecutive year.

7. PUBLIC PARTICIPATION PROCESS (PPP)

This section of the report provides details of Public Participation Process (PPP) undertaken in the compilation of the EIA final report. Therefore, in terms of Section 26(1)(h) of the Namibian Environmental Assessment Regulations (2012), it is a requirement to provide details of the public participation process conducted in accordance with Section 32 of the Environmental Assessment Regulations. Furthermore, the Public Participation forms an important component of this EIA.

It has been defined by the Ministry of Environment, Forestry and Tourism that an Environmental Assessment Regulations (2012) of the Environmental Management Act (2007), as a process in which potential interested and affected parties such as neighbouring landowners, local authorities, environmental groups, village councils and communities, to comment on the potential environmental impacts associated with the proposed activity and are given an opportunity to comment on, or raise issues relevant to the proposed project and its benefits to the nation and to Namibia's economy. Apart from the legal requirements, public and stakeholder consultations ensure that their comments and views are considered during the decision-making process.

7.1. Aim for Public Participation Process (PPP)

The aims for the Public Participation Process is but not limited to; -

- Informing Interested and Affected Parties (I&APs) of the proposed project;
- Identifying issues, comments and concerns as raised by I&APs;
- Promoting transparency and an understanding of the project and its consequences;
- Serving as a structure for liaison and communication with I&APs; and
- Providing local knowledge and input in identifying potential environmental (biophysical and social) impacts and “hotspots” associated with the proposed development.

7.2. Compilation of stakeholder database

The first step in the Public Participation Process (PPP) is to identify key stakeholders. A stakeholder database was compiled and the target groups for this project were informed and requested to provide comments to this project:

- Rundu Town Council;
- National Housing Enterprise; and
- General public

7.3. Background Information Document

This document provides a short summary of the project and the EIA process. Therefore, a background information document (BID) was prepared and was ready to be distributed to Interested & Affected Parties. However, no Interested & Affected Party requested for it. See a copy of the BID attached.

7.4. Notification of I&APs

The requirements for the notification of potentially interested and affected parties of this application are set out in detail in section 32(2)(b) of the EA regulation. These requirements have been addressed and include; -

- Forwarding letters to government authorities and other identified relevant stakeholders;
- Fixing a notice board at a place conspicuous to the public
- Placing advertisements twice in at least two local newspapers.

7.5. Advertisement

The advertisement of the public participation and public meeting for the proposed project were placed in two local newspapers, the New Era and the Confidante (dated: 10th and 17th November 2023). Proof of advertisements are attached.

7.6. Notice Board

An A3 size notice board detailing information about the project and the EIA process was erected at a recognised public area at the Rundu Town Council Notice Board and on site on the 10th of November 2023.

7.7. Public Meeting

In compliance with the EIA Regulations (2012), public (I&AP) and all stakeholders were notified as a requirement for EIA process to incorporate the varying needs of stakeholders and I&APs, as well as to ensure the relevant interactions between stakeholders and the EIA specialist team. Due to lack of interest and small scale nature of the project, it was decided that a public meeting was not necessary for this project.

7.8. Issues raised by interested and affected parties

No comments were received on the project from interested and affected parties (stakeholders), although they were notified about the project.

8. ENVIRONMENTAL ASSESSMENT METHODOLOGY

An appraisal of the type of effect the proposed permanent closure of the public open space and subsequent rezoning to “Residential” would have on the affected environment; rate as either positive (beneficial on the environment), neutral (no impact on the environment), or negative (adverse impact on at a cost to the environment).

Severity

Rating	Description
1	Negligible / non-harmful / minimal deterioration (0 – 20%)
2	Minor / potentially harmful / measurable deterioration (20 – 40%)
3	Moderate / harmful / moderate deterioration (40 – 60%)
4	Significant / very harmful / substantial deterioration (60 – 80%)
5	Irreversible / permanent / death (80 – 100%)

Table 2: Assessment and Rating of Severity

Duration

Rating	Description
1	Less than 1 month / quickly reversible
2	Less than 1 year / quickly reversible
3	More than 1 year / reversible over time
4	More than 10 years/ reversible over time/ life of project or facility
5	Beyond life of project or facility/ permanent

Table 3: Assessment and Rating of Duration

Extent

Rating	Description
1	Within immediate area of the activity
2	Surrounding area within project boundary
3	Beyond project boundary
4	Regional/ Provincial
5	National/ International

Table 4: Assessment and rating of extent

Consequence is calculated as the average of the sum of the ratings of severity, duration and extent of the environmental impact.

Determination of Consequence (C)	(Severity + Duration + Extent) / 3
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Table 5: Determination of consequence

Frequency

Rating	Description
1	Less than once a year
2	Once in a year
3	Quarterly
4	Weekly
5	Daily

Table 6: Assessment and rating of frequency

Probability

Rating	Description
1	Almost impossible
2	Unlikely
3	Probable
4	Highly likely
5	Definite

Table 7: Assessment and rating of probability

Likelihood

Likelihood considers the frequency of the activity together with the probability of the environmental impact associated with that activity occurring.

Determination of Likelihood (L) =	(Frequency + Probability) / 2
--	--------------------------------------

Table 8: Determination of likelihood

Environmental Significance

Environmental significance is the product of the consequence and likelihood values.

Rating	Description
L (1 - 4.9)	Low environmental significance
LM (5 - 9.9)	Low to medium environmental significance
M (10 - 14.99)	Medium environmental significance
MH (15 - 19.9)	Medium to high environmental significance
H (20 - 25)	High environmental significance. Likely to be a fatal flaw

Table 9: Determination of environmental significance

8.1 Impacts Associated with Construction Phase

The permanent closure of Erf 326, Kaisosi as a “Public Open Space” and subsequent rezoning to “Residential” for the formalization of an already constructed house will not require additional construction of municipal services or buildings. Thus, the construction phase will not apply during this project. However, should any construction unexpectedly take place, the potential effects on the environment and their mitigation measures during construction are:

Air Quality Impacts: These impacts are expected on site and within the surrounding area. They will likely be short-term and will most probably pose a negligible nuisance and health threat to those residing nearby. Any additional construction of municipal services and buildings will have impact on the surrounding air quality caused by construction vehicles.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	2	2	2	2	5	5	5	Negative	7(LM)
Mitigation measures:									
<ul style="list-style-type: none"> - Dust may be generated during the construction/decommissioning phase and might be aggravated when strong winds occur therefore, dust suppression during the construction process is advised when dust becomes an issue. - Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 40 km/h should be set for all vehicles involved in the construction. - Sand loads should be covered to avoid loss of material in transit, especially if material is transported off site. 									
Mitigated	1	1	1	1	1	1	1	Negative	2 (L)

Noise caused by construction activities- Noise levels are expected to rise should the construction phase be relevant in this development. Construction activities that can cause noise include construction vehicles, electric generators, pressure hammers, earthmoving equipment that are normally utilized during the construction phase.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	3	4	3	3.33	5	3	4	Negative	8.33 (LM)
Mitigation measures: <ul style="list-style-type: none"> - Construction should be limited to normal working days and office hours from 08h00 to 17h00 and 07:30 – 13:00 on Saturdays. - Provide ear plugs and ear muffs to staff undertaking the noisy activity or working within close proximity thereof or alternatively, all construction workers should be equipped with ear protection equipment. - Noise pollution should be addressed and mitigated at an early stage of construction phase. 									
Mitigated	1	1	1	1	1	1	1	Negative	2 (L)

Employment Creation (Positive Impact) employment created and economic benefits to the local community because of the construction of municipal services and other infrastructure which will require labour from the local population.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	1	3	3	2.33	2	5	3.5	Positive	5.83 (LM)
Mitigation measures:									
<ul style="list-style-type: none"> - Various employment opportunities will be created during all phases of the development, ranging from highly skilled to unskilled. Preference should be given to Namibian Citizens residing in Rundu. - When recruiting, the responsible contractor should ensure gender equity is taken into consideration. - No employment applications may take place at the entrance to the site, formal employment channels must be used. - In terms of human resource development and capacity building, the contractor must enforce training programs that skilled workers should always train unskilled workers when necessary, in order for them to enhance their performances and to gain more knowledge that they might demonstrate at other levels in future. 									
Mitigated	1	2	5	2.66	3	5	4	Positive	6.66 (LM)

Health and Safety- Health and Safety Regulations pertaining to personal protective clothing, first aid kits being available on site, warning signs, etc. should be adhered to. There is a possibility for accidents to occur during the construction phase if proper care is not taken.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	5	5	2	4	5	3	4	Negative	8 (LM)
Mitigation measures:									
<ul style="list-style-type: none"> - A health and safety plan is to be developed. - Earthmoving equipment to be used on site may increase the possibility of injuries and the responsible contractor must ensure that all staff members are briefed about the potential risks of injuries on site. - Ensure the appointment of a Safety Officer to continuously monitor the safety conditions during construction. - The contractor is further advised to ensure that adequate emergency facilities are available on site. - The construction staff handling chemicals or hazardous materials must be trained in the use of the substances and the environmental, health and safety consequences of incidents. - All construction staff must have the appropriate PPE. 									
Mitigated	2	1	2	1.66	1	2	1.5	Negative	3.16 (L)

Traffic - Potential impact due to increase in traffic because the site is in the urban area that is already inhabited. Construction related activities are expected to have a minimal impact on the movement of traffic along the road. Accidents might occur if unqualified drivers are employed.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	4	3	4	3.66	5	4	4.5	Positive	8.16 (LM)
Mitigation measures:									
<ul style="list-style-type: none"> - No diversion of traffic or closure of the road is expected, the site will be cordoned off during construction. - The responsible contractor must ensure that all drivers employed have valid driver's licenses and adequate experience for the type of vehicles they are going to operate. - The contractor must ensure that there is always a supervisor on site to ensure that drivers do not operate vehicles while intoxicated. - Construction Vehicles speed limit should be 40 km/h and should consider other road users. 									
Mitigated	1	1	1	1	1	2	1.5	Positive	2.5 (L)

Waste Impacts- Should the construction phase be implemented in this development, it is likely to generate waste from rubble, general construction refuse and minor hazardous waste including paint tins, cleaning acids, asphalt's and oils. The development could therefore impact on the environment by generating solid waste pollution.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	3	3	3	3	5	4	4.5	Negative	7.5 (LM)
Mitigation measures:									
<ul style="list-style-type: none"> - Ensure that no excavated soil, refuse or building rubble generated on site are placed or dumped on surrounding properties or land. - Contaminated waste in the form of soil, litter, building rubble and other material must be disposed of at an appropriate disposal site. - The contractor and developer should ensure that all the waste generated by the development is appropriately disposed of at the recommended waste disposal sites close to the area. - Strictly, no burning of waste on the site or at the disposal site is allowed as it possess environmental and public health impacts; 									
Mitigated	1	1	1	1	4	2	3	Negative	4 (L)

Safety and Security- During the construction and decommissioning phase, earthmoving equipment will be used on site. This increases the possibility of injuries. Presence of equipment may encourage criminal activities (theft).

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	3	3	3	3	5	4	4.5	Negative	7.5 (LM)
Mitigation measures:									
<ul style="list-style-type: none"> - The site must be fenced off to prevent unauthorized access during construction. - All visitors must report to the site office. - Ensure that the contact details of the police or security company and ambulance services are available on site. - The contractor and developer should ensure that all the waste generated by the development is appropriately disposed of at the recommended waste disposal sites close to the area. - Strictly, no burning of waste on the site or at the disposal site is allowed as it possess environmental and public health impacts; 									
Mitigated	1	1	1	1	4	2	3	Negative	4 (L)

8.2 Impacts Associated with Operational Phase- The exercise for the formalization of a an existing residential property from “Public Open Space” is not expected to have majour impacts during the operational phase and the residential property is already inhabited and the Rundu Town Council is already providing services to the property. Therefore, some or most of the impacts discussed in this section are already ongoing.

Increased employment opportunities- positive impact related to the provision of employment through the provision and maintance of municipal services.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	2	3	5	3.33	3	3	3	Positive	6.33 (LM)
Mitigation measures:									
<ul style="list-style-type: none"> - It is recommended to consider local people when hiring or recruiting people to benefit unskilled and semi-skilled people from the local community that can gain valuable skills during the operational phase of this project. - Jobs for the maintenance of infrastructure and services has been created following the completion of the development. These jobs will increase the labour force of Rundu and thus stimulate its development. - Equity, transparency, should be taken into account when hiring and recruiting and that committees should also take part in the recruiting process. 									
Mitigated	1	4	4	3	2	5	4	Positive	6.5 (LM)

Improved aesthetic look of the area- The development is essential to maintain the visual and aesthetics of the area. This potential impact of the infrastructure on the economic structure is positive.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	3	4	1	2.66	5	4	4.5	Positive	7.16 (LM)
Mitigation measures:									
<ul style="list-style-type: none"> - No mitigation required as it's a positive impact. However, the proponent should create awareness among the administrative staff about energy conservation, waste management, water conservation and other resources. - Ensure proper and regular maintenance of the area. - No illegal dumping of waste should be allowed 									
Mitigated	1	4	2	2.33	5	5	5	Positive	7.33 (LM)

Water demand- formalization to a residential land use is not expected to increase the water demand in the area. However, water saving measures are to be implemented throughout the operational phase.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	5	5	5	5	5	5	5	Negative	10 (M)
Mitigation measures:									
<ul style="list-style-type: none"> - Awareness should be created to inform people on the importance of saving water to reduce water consumption. 									
Mitigated	1	2	1	1.33	1	2	1.5	Negative	2.83 (L)

Power usage- Power generation in Namibia is stable, however, in order to conserve natural resources, electricity should be used sparingly in residential households.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	2	5	5	4	5	3	4	Negative	8 (LM)
Mitigation measures:									
<ul style="list-style-type: none"> - Lights should be switched off if not in use. - Switch off unused electronics. - Use laptop computers instead of desktop computers - Encourage use of renewable energy i.e. solar power supply to save power and compliment the electrical grid. 									
Mitigated	1	1	1	1	3	2	2.5	Negative	3.5 (L)

Waste management- Generation of domestic and sewage waste generated from bathrooms.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	4	3	3	3.33	5	3	4	Negative	7.33 (LM)
Mitigation measures:									
<ul style="list-style-type: none"> - During the operations phase, the Rundu Town Council waste management team will manage the waste disposal from the site while the proponent will ensure that waste is stored correctly. 									

<ul style="list-style-type: none"> - Rundu Town Council to follow their existing formal waste collection strategy and that the waste is to be collected regularly and disposed of at an authorized dumping site or disposal site. - Ensure maintenance of sewage system - Illegal dumping should be prohibited. 									
Mitigated	1	1	1	1	4	2	3	Negative	4 (L)

Improved standard of living - The development is essential to improve the provision of affordable housing to the residents of the town.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	3	4	1	2.66	5	4	4.5	Positive	7.16 (LM)
Mitigation measures:									
<ul style="list-style-type: none"> - No mitigation required as it's a positive impact. - The formalization of the existing house will improve the standard of living for beneficiaries through security of tenure. - The formalization will allow the Rundu Town Council to standardize the rates and taxes in the area. - The formalization will align the land uses in the town with its functional zoning scheme. - The valuation of the subject and neighbouring properties will be increased. 									
Mitigated	1	4	2	2.33	5	5	5	Positive	7.33 (LM)

8.3 Impacts Associated with Decommissioning Phase

At this point, there is no plan for the project to enter into a decommissioning phase. However, plans should be put in place in case that this becomes necessary in the future. Should the decommissioning of this project become necessary an Environmental Impact Assessment (EIA) will be required and the disposal of decommissioned equipment and hazardous contaminated materials should be disposed following the disposal of hazardous material legislation.

9 CONCLUSION

The National Housing Enterprise has constructed a house on Erf 326, Kaisosi and subsequently allocated and sold the property to a private individual who is a beneficiary of low cost housing in Rundu Town, Okavango East Region. Erf 326, Kaisosi currently measure 980m² in extent and is zoned for “Public Open Space” purposes. In order for the transfer of Erf 326, Kaisosi to be finalized, the statutory town planning process of permanent closure of Erf 326 as a “Public Open Space” and subsequent rezoning to “Residential” should first be completed and any permanent closure of a public open space requires an Environmental Clearance Certificate.

Thus, the National Housing Enterprise has appointed Nghivelwa Planning Consultants to conduct an Environmental Impact Assessment and Environmental Management Plan (EMP) for the Permanent closure of Erf 326, Kaisosi as a “Public Open Space” to allow for the formalization of the house already constructed and finalize the registration of the property into the name of the beneficiary. The Environmental Impact Assessment has been conducted to meet the requirements of Namibia’s Environmental Management Act, 2007 (Act No. 7 of 2007).

The potential environmental issues associated with the proposed activities have been identified and assessed. Therefore, they are considered sufficient and no additional specialist study is required. Furthermore, a number of potential impacts were assessed and mitigation measures are provided. The area is generally suitable for the proposed development and there were no objections or critical issues have been raised by I&AP’s. Hence, all environmental risks can

be minimised and managed through implementing preventative measures and sound management systems. Therefore, the approval of this application would not compromise the integrity of the existing environmental management priorities for the area.

10 REFERENCES

- Christelis, G and Struckmeier, W. (2001). Groundwater in Namibia: Explanation to the Hydrogeological map. Windhoek: Ministry of Agriculture, Water and Forestry.
- DEAT (2006) Guideline 5: Assessment of Alternatives and Impacts in support of the Environmental Impact Assessment Regulations, 2006. Integrated Environmental Management Guideline Series, Department of Environmental Affairs and Tourism (DEAT), Pretoria.
- DEAT (2006) Guideline 4: Public Participation in support of the Environmental Impact Assessment Regulations, 2006. Integrated Environmental Management Guideline Series, Department of Environmental Affairs and Tourism (DEAT), Pretoria
- DEAT (2006) Guideline 5: Assessment of Alternatives and Impacts in support of the Environmental Impact Assessment Regulations, 2006. Integrated Environmental Management Guideline Series, Department of Environmental Affairs and Tourism (DEAT), Pretoria.
- Education Management Information System Education Statistics (2011)
- Environmental Management Act guideline of Namibia. Khomas Regional Poverty Profile (2011).
- Giess, W. (1971). A preliminary vegetation map of South West Africa. *Dinteria* 4: 5 – 114.
- Griffin, M. (1998). Amphibian diversity. In: Barnard, P. (ed.). 1998. Biological diversity in Namibia: a country study. Windhoek: Namibian National Biodiversity Task Force.
- Mandelsohn J., Jarvis A., Roberts C. And Robertson T. (2013), A Profile and Atlas of the Cuvelai-Etосha Basin, RAISON, Namibia.
- Miller R.McG. (2008). Geology of Namibia.