Environmental Assessment Scoping Report for:

August 2025

Subdivision, rezoning, street creation and registration of a power line servitude on the Remainder of the Farm Rundu Townlands No. 1329, Kavango East Region

APP006237

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PROJECT DETAILS

Title	Environmental Scoping Report for the: ▪ Subdivision, rezoning, street creation and registration of a power line servitude on the Remainder of the Farm Rundu Townlands No. 1329		
Report Status	Final		
SPC Reference	RUN/063		
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Report date	August 2025		
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LEGAL NOTICE

EXECUTIVE SUMMARY

Introduction

The Rundu Town Council, hereinafter referred to as the Proponent, intends to undertake the following activities:

- **Subdivision of the Remainder of the Farm Rundu Townlands No. 1329 into 10 Portions and the Remainder;**
- **Reservation of Portions B, C, F and G for "Local Authority" purposes;**
- **Rezoning of Portion D from "Undetermined" to "Special" for a Cemetery;**
- **Rezoning of Portions I and J from "Undetermined" to "Street";**
- **Registration of a 22m Power line Servitude over Portions D, E and I in favour of NamPower;**
- **Inclusion in the next Zoning Scheme to be prepared for Rundu.**

The above development triggers listed activities in terms of the Environmental Management Act (No. 7 of 2007) and Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012).

The Proponent appointed Stubenrauch Planning Consultants (SPC) to undertake an independent Environmental Assessment (EA) in order to obtain an Environmental Clearance Certificate (ECC) for the above activities. The competent authority is the Ministry of Environment, Forestry and Tourism: Department of Environmental Affairs and Forestry (MEFT: DEAF).

Project Description

The Rundu Town Council has expressed the need to identify a new site for a cemetery, since the present one is nearing capacity. The previously approved site (as per NAMPAB Item 49/2010) has been occupied by informal settlers, making it unusable. Meanwhile, the growing urban population, exacerbated by a high mortality rate, has increased demand for interment space.

The Town Council intends to develop this facility and land uses on the outskirts of the townlands. All the proposed land uses are compatible with each other. This location will minimize public health risks from potential contamination of the town's underground water supply. Establishing these facilities on the outskirts will also facilitate the implementation and maintenance of necessary buffer zones around the cemetery.

The proponent proposes to subdivide the Remainder of the Rundu Townlands No. 1329 into 10 portions, and the Remainder of which portion D will be used to establish and construct the cemetery.

Public Participation

Communication with Interested and Affected Parties (I&APs) about the proposed development was facilitated by the following means and in this order:

- A Background Information Document (BID) containing descriptive information about the proposed activities was compiled and sent out to all identified and registered I&APs via email on **19 June 2025**;
- Notices were placed in The New Era and The Namibian newspapers dated **19 June and 26 June 2025** respectively, briefly explaining the activity and its locality, inviting members of the public to register as I&APs (**Appendix B**); and
- A notice was fixed at the project site (see **Appendix A**).

Public consultation was carried out according to the Environmental Management Act's EIA Regulations. After the initial notification, the I&APs were given two weeks to submit their comments on the project (until **10 July 2025**). No comments were received from the public.

The Draft Scoping Report was circulated from the **30th of July 2025 until the 13th of August 2025** so that the public can review and comment on it. No comments were received from the public on the draft report. The comment period will remain open until the final scoping report is submitted to MEFT.

Conclusions and Recommendations

With reference to **Table 8**, none of the negative planning and design, construction or operational phase impacts were deemed to have a high significant impact on the environment. The impacts were assessed to a Medium to Low (negative) significance, without mitigation measures. With the implementation of the recommended mitigation measures in Chapter 7 as well as in the EMP, the significance of the construction phase impacts is likely to be reduced to a Low (negative).

It is recommended that this project be authorised as the significance of negative impacts can be reduced with effective and appropriate mitigation provided in this report and the EMP. If authorised, the implementation of an EMP should be included as a condition of approval.

The "no go" alternative was thus deemed to have a High (negative) impact, as all the benefits resulting from the development would not be realised.

The significance of negative impacts can be reduced with effective and appropriate mitigation provided in this report and the EMP. If authorised, the implementation of the EMP should be included as a condition of approval.

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LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
CRR	Comments and response report
dB	Decibels
DESR	Draft Environmental Scoping Report
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
EAR	Environmental Assessment Report
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
FESR	Final Environmental Scoping Report
GTZ	Gesellschaft für Technische Zusammenarbeit
HIV	Human Immunodeficiency Virus
I&AP	Interested and Affected Party
IUCN	International Union for Conservation of Nature
MEFT	Ministry of Environment, Forestry and Tourism
MEFT: DEAF	Ministry of Environment, Forestry and Tourism: Department of Environmental Affairs and Forestry
MURD	Ministry of Urban and Rural Development
MWTC	Ministry of Works Transport and Communication
NAMPAB	Namibia Planning Advisory Board
NPC	Namibia Planning Commission
PPP	Public Participation Process
SADC	Southern African Development Community
SPC	Stubenrauch Planning Consultants
USAID	United States Agency for International Development
VMMC	Voluntary Medical Male Circumcision

1 INTRODUCTION

1.1 PROJECT BACKGROUND

The Rundu Town Council hereinafter referred to as the proponent intends to undertake the following activities:

- **Subdivision of the Remainder of the Farm Rundu Townlands No. 1329 into 10 Portions and the Remainder;**
- **Reservation of Portions B, C, F and G for "Local Authority" purposes;**
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- **Inclusion in the next Zoning Scheme to be prepared for Rundu.**

The above development triggers listed activities in terms of the Environmental Management Act (No. 7 of 2007) and Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012).

In terms of the Environmental Management Act (No. 7 of 2007) and Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012), the following listed activities in **Table 1** were triggered by the proposed project:

Table 1: List of triggered activities identified in the EIA Regulations which apply to the proposed project

Activity description and No(s):	**Description of relevant activity**	**The portion of the development as per the project description that relates to the applicable listed activity**
5.1 (d) Land Use and Development	The rezoning of land from use for nature conservation or zoned open space to any other land use	The proposed project involves rezoning the land from "Undetermined" to "Special" for use as a cemetery, and from "Undetermined" to "Street" for road infrastructure.
Activity 10.1 (b) Infrastructure	The construction of public roads.	The proposed project includes the construction of a public road.
Activity 10.2(a) Infrastructure	The route determination of roads and design of associated physical infrastructure where it is a public road.	The proposed project includes the route determination and design of a road.
Activity 11.2 Other Activities	Construction of cemeteries, camping, leisure and recreation sites.	The proposed project includes the construction of a cemetery.

The above activities will be discussed in more detail in Chapter 4. The proponent appointed Stubenrauch Planning Consultants (SPC) to undertake an independent Environmental Assessment (EA) in order to obtain an Environmental Clearance Certificate (ECC) for the above activities. The competent authority is the Ministry of Environment, Forestry and Tourism: Department of Environmental Affairs (MEFT: DEAF).

The process will be undertaken in terms of gazetted Namibian Government Notice No. 30 Environmental Impact Assessment Regulations (herein referred to as EIA Regulations) and the Environmental Management Act (No 7 of 2007) (herein referred to as the EMA). The EIA process will investigate if there are any potentially significant bio-physical and socio-economic impacts associated with the intended activities. The EIA process would also serve to provide an opportunity for the public and key stakeholders to provide comments and participate in the process.

1.2 PROJECT LOCATION

Rundu is the regional capital of the Kavango East Region and one of Namibia's fastest-growing urban centres, experiencing rapid population growth due to urbanization. The town plays a vital role in regional trade and service provision and is located along the Kavango River near the Angolan border.

The subject Portions are located on the southern boundary of the Rundu Townlands along the District Road (D3448) leading to Ngcangcana as depicted in **Figure 1** below. The subject portion measures approximately **129.1 ha** in extent.

1.3 ZONING AND STATUS QUO

The Remainder of the Farm Rundu Townlands No. 1329 is currently zoned for "Undetermined". There is a NamPower line running through proposed Portion D/1329, E/1329 and J/1329 as well as the D3402 District Road within the same vicinity as the proposed Portions A - J. Proposed Portions A- J of the Farm Rundu Town and Townlands No. 1329 are currently vacant with no form of development having taken place on the site.

1.4 OWNERSHIP

According to the Certificate of Registered State No. T4396/1991, the Remainder of the Farm Rundu Townlands No. 1329 vests with the Rundu Town Council. Rundu Town Council now seeks to optimize the potential of this large undeveloped property.

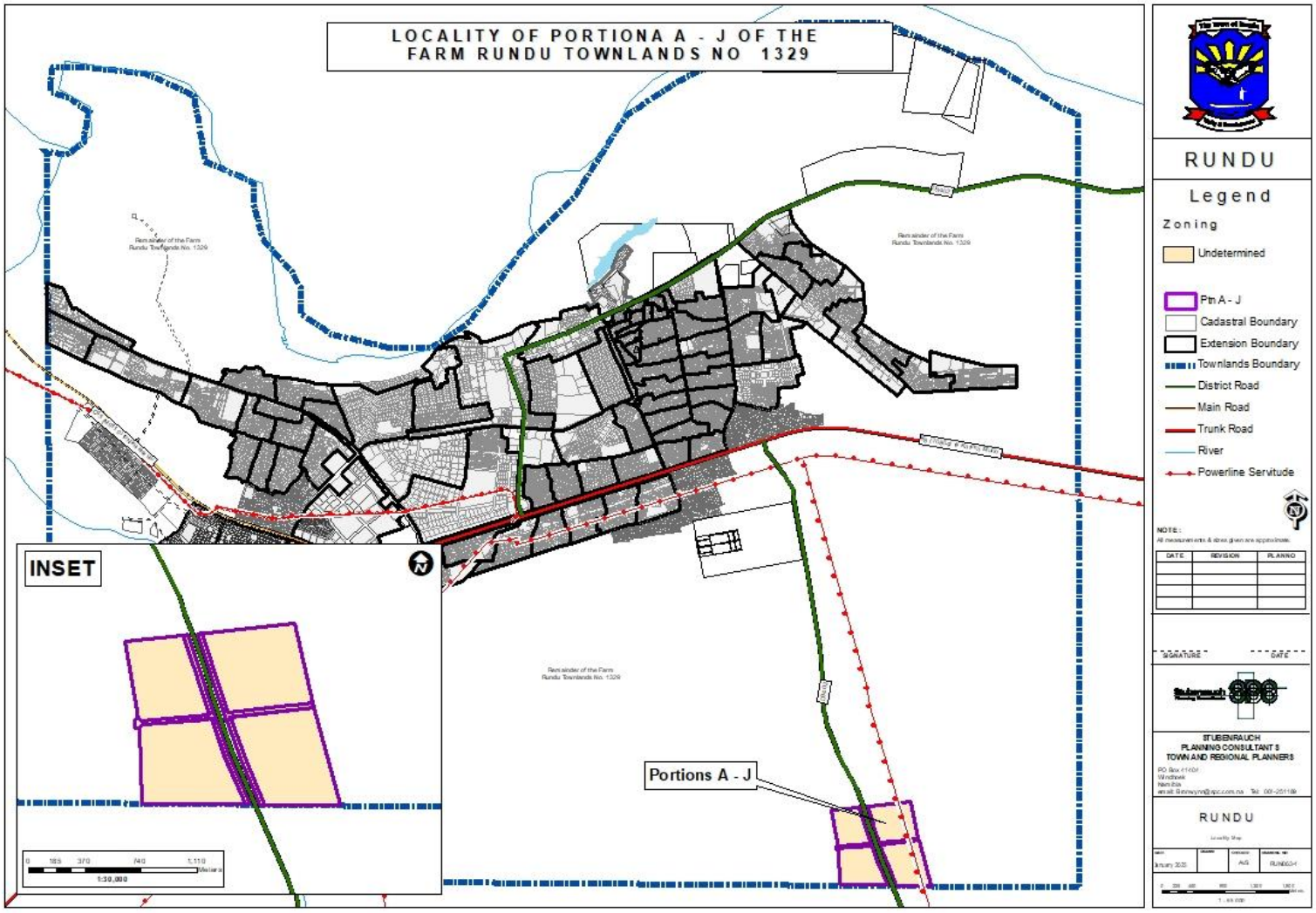

Figure 1: Locality of the proposed portion A-J

1.5 TERMS OF REFERENCE AND SCOPE OF PROJECT

The scope of this project is limited to conducting an environmental impact assessment and applying for an Environmental Clearance Certificate for the following as indicated in section 1.1 above:

- **Subdivision of the Remainder of the Farm Rundu Townlands No. 1329 into 10 Portions and the Remainder;**
- **Reservation of Portions B, C, F and G for "Local Authority" purposes;**
- **Rezoning of Portion D from "Undetermined" to "Special" for a Cemetery;**
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- **Registration of a 22m Power line Servitude over Portions D, E and I in favour of NamPower;**
- **Inclusion in the next Zoning Scheme to be prepared for Rundu.**

1.6 ASSUMPTIONS AND LIMITATIONS

In undertaking this investigation and compiling the Environmental Scoping Report, the following assumptions and limitations apply:

- The information provided by the proponent is accurate and discloses all information available.
- No alternatives other than the preferred layout plan and the 'no-go' option were considered during this assessment. The unique character and appeal of Rundu were however taken into consideration in the design perspective. Various layout alternatives were initially considered by the Proponent, also taking terrain and environmental constraints into account, the current design plans being the most feasible result.

1.7 CONTENT OF ENVIRONMENTAL ASSESSMENT REPORT

Section 8 of the gazetted EIA Regulations requires specific content to be addressed in a Scoping / Environmental Assessment Report. **Table 2** below is an extract from the EMA and highlights the required contents of a Scoping / Environmental Assessment Report whilst assisting the reader to find the relevant section in the report.

Table 2: Contents of the Scoping / Environmental Assessment Report

Section	Description	Section of DESR/ Annexure
8 (a)	The curriculum vitae of the EAPs who prepared the report;	Refer to **Annexure E**
8 (b)	A description of the proposed activity;	Refer to Chapter 4

Section	Description	Section of DESR/ Annexure
8 (c)	A description of the site on which the activity is to be undertaken and the location of the activity on the site;	Refer to Chapter 3
8 (d)	A description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed listed activity;	Refer to Chapter 3
8 (e)	An identification of laws and guidelines that have been considered in the preparation of the scoping report;	Refer to Chapter 2
8 (f)	Details of the public consultation process conducted in terms of regulation 7(1) in connection with the application, including	Refer to Chapter 5
	(i) the steps that were taken to notify potentially interested and affected parties of the proposed application	Refer to Chapter 5
	(ii) proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given;	Refer to **Annexures A** and **B** for site notices and advertisements respectively.
	(iii) a list of all persons, organisations and organs of state that were registered in terms of regulation 22 as interested and affected parties in relation to the application;	Refer to **Annexure C**
	(iv) a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues;	Refer to **Annexure C**
8 (g)	A description of the need and desirability of the proposed listed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages	Refer to Chapter 4.3

Section	Description	Section of DESR/ Annexure
	that the proposed activity or alternatives have on the environment and on the community that may be affected by the activity;	
8 (h)	A description and assessment of the significance of any effects, including cumulative effects, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the proposed listed activity;	Refer to Chapter 7
8 (i)	terms of reference for the detailed assessment;	NB – Assessment of impacts are included in this EA Report
8 (j)	An environmental management plan	Refer to **Annexure F**

2 LEGAL FRAMEWORK

2.1 LEGISLATION RELEVANT TO THE PROPOSED DEVELOPMENT

There are multiple legal instruments that regulate and have a bearing on good environmental management in Namibia. **Table 3** below provides a summary of the legal instruments considered to be relevant to this development and the environmental assessment process.

Table 3: Legislation applicable to the proposed development

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
The Constitution of the Republic of Namibia as Amended	Article 91 (c) provides for duty to guard against "the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia." Article 95(l) deals with the "maintenance of ecosystems, essential ecological processes and biological diversity" and sustainable use of the country's natural resources.	Sustainable development should be at the forefront of this development.
Environmental Management Act No. 7 of 2007 (EMA)	Section 2 outlines the objective of the Act and the means to achieve that. Section 3 details the principle of Environmental Management	The development should be informed by the EMA.
EIA Regulations GN 28, 29, and 30 of EMA (2012)	GN 29 Identifies and lists certain activities that cannot be undertaken without an environmental clearance certificate. GN 30 provides the regulations governing the environmental assessment (EA) process.	The following listed activities are triggered by the proposed development: **Activity 5.1 (d)** **Land Use and Development** **Activity 10.1 (b) Infrastructure** **Activity 10.2(a) Infrastructure** **Activity 11.2 Construction of cemeteries**
Convention on Biological Diversity (1992)	Article 1 lists the conservation of biological diversity amongst the objectives of the convention.	The project should consider the impact it will have on the biodiversity of the area.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Draft Procedures and Guidelines for conducting EIAs and compiling EMPs (2008)	Part 1, Stage 8 of the guidelines states that if a proposal is likely to affect people, certain guidelines should be considered by the proponent in the scoping process.	The EA process should incorporate the aspects outlined in the guidelines.
Namibia Vision 2030	Vision 2030 states that the solitude, silence and natural beauty that many areas in Namibia provide are becoming sought after commodities and must be regarded as valuable natural assets.	Care should be taken that the development does not lead to the degradation of the natural beauty of the area.
Water Act No. 54 of 1956	Section 23(1) deals with the prohibition of pollution of underground and surface water bodies.	The pollution of water resources should be avoided during construction and operation of the development.
The Ministry of Environment and Tourism (MET) Policy on HIV & AIDS	MET has recently developed a policy on HIV and AIDS. In addition, it has also initiated a programme aimed at mainstreaming HIV and gender issues into environmental impact assessments.	The proponent and its contractor must adhere to the guidelines provided to manage the aspects of HIV/AIDS. Experience with construction projects has shown that a significant risk is created when migrant construction workers interact with local communities.
Urban and Regional Planning Act No 5 of 2018	To consolidate the laws relating to urban and regional planning; to provide for a legal framework for spatial planning in Namibia; to provide for principles and standards of spatial planning; to establish the urban and regional planning board; to decentralise certain matters relating to spatial planning; to provide for the preparation, approval and review of the national spatial development framework, regional structure plans and urban structure plans; to provide for the preparation, approval, review and amendment of zoning schemes; to	The proposed development must adhere to the provisions regarding the subdivision and rezoning of land.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	provide for the establishment of townships; to provide for the alteration of boundaries of approved townships, to provide for the disestablishment of approved townships; to provide for the change of name of approved townships; to provide for the subdivision and consolidation of land; to provide for the alteration, suspension and deletion of conditions relating to land; and to provide for incidental matters.	
Local Authorities Act No. 23 of 1992	The Local Authorities Act prescribes the manner in which a town or municipality should be managed by the Town or Municipal Council.	The development must comply with provisions of the Local Authorities Act.
Labour Act no. 11 of 2007	Chapter 2 details the fundamental rights and protections. Chapter 3 deals with the basic conditions of employment.	Given the employment opportunities presented by the development, compliance with the labour law is essential.
National Heritage Act No. 27 of 2004	The Act is aimed at protecting, conserving and registering places and objects of heritage significance.	All protected heritage resources (e.g. human remains etc.) discovered, need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before they may be relocated.
Roads Ordinance 17 of 1972	• Section 3.1 deals with width of proclaimed roads and road reserve boundaries • Section 27.1 is concerned with the control of traffic on urban trunk and main roads • Section 36.1 regulates rails, tracks, bridges, wires, cables,	Adhere to all applicable provisions of the Roads Ordinance.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	subways or culverts across or under proclaimed roads • Section 37.1 deals with Infringements and obstructions on and interference with proclaimed roads.	
Public and Environmental Health Act of 2015	This Act (GG 5740) provides a framework for a structured uniform public and environmental health system in Namibia. It covers notification, prevention and control of diseases and sexually transmitted infections; maternal, ante-natal and neo-natal care; water and food supplies; infant nutrition; waste management; health nuisances; public and environmental health planning and reporting. It repeals the Public Health Act 36 of 1919 (SA GG 979).	Contractors and users of the proposed development are to comply with these legal requirements.
Nature Conservation Ordinance no. 4 of 1975	Chapter 6 provides for legislation regarding the protection of indigenous plants	Indigenous and protected plants must be managed within the legal confines.
Water Quality Guidelines for Drinking Water and Wastewater Treatment	Details specific quantities in terms of water quality determinants, which wastewater should be treated to before being discharged into the environment	These guidelines are to be applied when dealing with water and waste treatment.
Environmental Assessment Policy of Namibia (1995)	The Policy seeks to ensure that the environmental consequences of development projects and policies are considered, understood and incorporated into the planning process, and that the term ENVIRONMENT is broadly interpreted to include biophysical,	This EIA considers this term of Environment.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	social, economic, cultural, historical and political components.	
Water Resources Management Act No. 11 of 2013	Part 12 deals with the control and protection of groundwater Part 13 deals with water pollution control	The pollution of water resources should be avoided during construction and operation of the development. Should water need to be abstracted, a water abstraction permit will be required from the Ministry of Water, Agriculture and Forestry.
Forest Act 12 of 2001 and Forest Regulations of 2015	To provide for the establishment of a Forestry Council and the appointment of certain officials; to consolidate the laws relating to the management and use of forests and forest produce; to provide for the protection of the environment and the control and management of forest fires; to repeal the Preservation of Bees and Honey Proclamation, 1923 (Proclamation No. 1of 1923), Preservation of Trees and Forests Ordinance, 1952 (Ordinance No. 37 of 1952) and the Forest Act, 1968 (Act No. 72 of 1968); and to deal with incidental matters.	Protected tree and plant species as per the Forest Act No 12 of 2001 and Forest Regulations of 2015 may not be removed without a permit from the Department of Forestry.
Atmospheric Pollution Prevention Ordinance No 45 of 1965	Part II - control of noxious or offensive gases, Part III - atmospheric pollution by smoke, Part IV - dust control, and Part V - air pollution by fumes emitted by vehicles.	The development should consider the provisions outlined in the act. The proponent should apply for an Air Emissions permit from the Ministry of Health and Social Services (if needed).

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Hazardous Substance Ordinance 14 of 1974	To provide for the control of substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances; to provide for the division of such substances into groups in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances; and to provide for matters connected therewith.	The handling, usage and storage of hazardous substances on site should be carefully controlled according to this Ordinance.
Soil Conservation Act No 76 of 1969	Act to consolidate and amend the law relating to the combating and prevention of soil erosion, the conservation, improvement and manner of use of the soil and vegetation and the protection of the water sources	The proposed activity should ensure that soil erosion and soil pollution is avoided during construction and operation.

This EIA process will be undertaken in accordance with the EIA Regulations. A Flow Diagram (refer to **Figure 2** below) provides an outline of the EIA process to be followed.

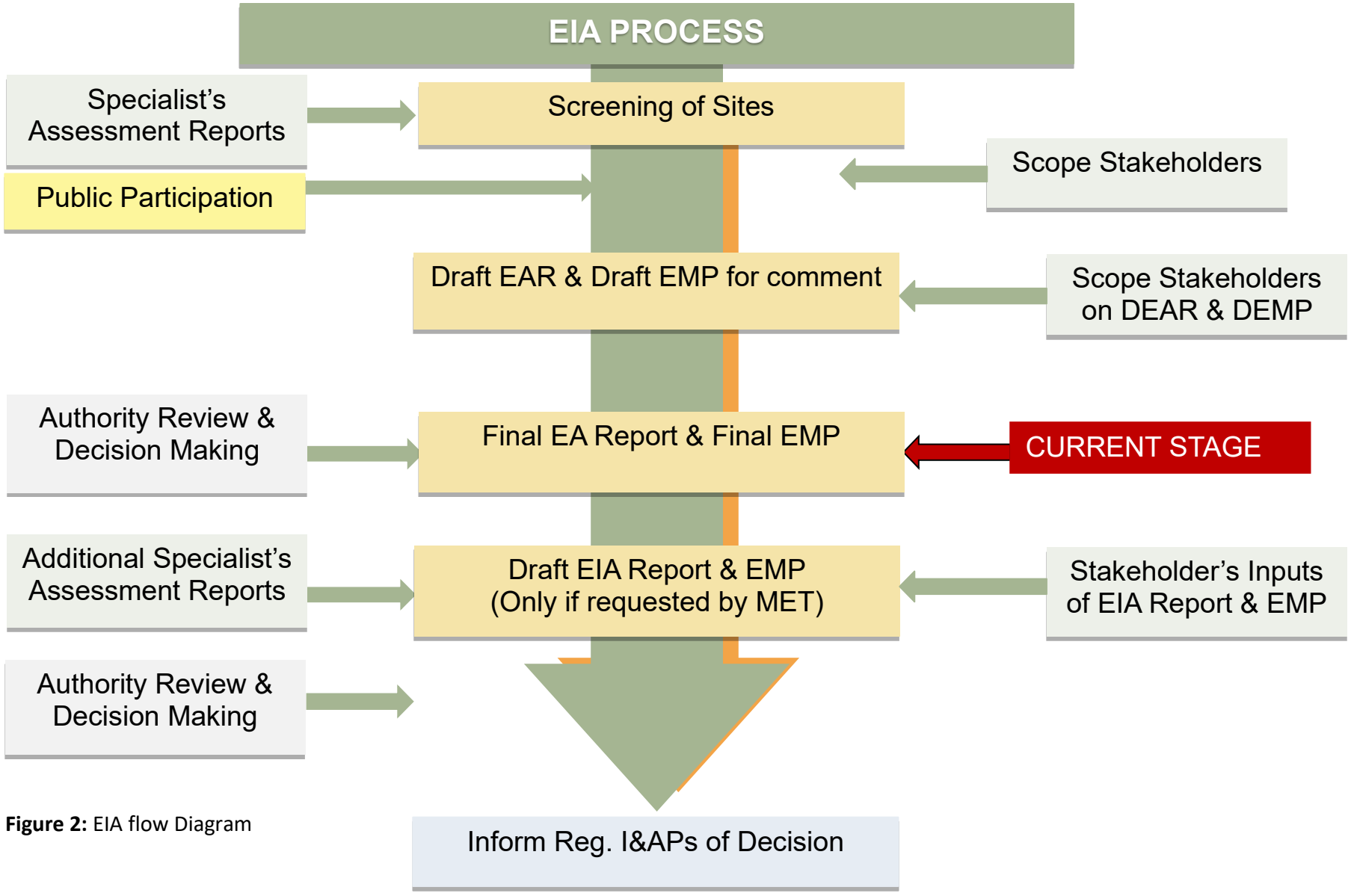


Figure 2: EIA flow Diagram

3 ENVIRONMENTAL BASELINE DESCRIPTION

3.1 SOCIAL ENVIRONMENT

3.1.1 Socio-Economic Context

The statistics shown in **Table 4** below are derived from the 2023 Namibia Population and Housing Census (Namibia Statistics Agency, 2023), and presented from a local and regional perspective.

Table 4: Statistics of the Rundu Urban constituency and Kavango East Region (Namibia Statistics Agency, 2023)

RUNDU URBAN CONSTITUENCY	
ATTRIBUTE	**INDICATOR**
Population	118 632
Females	63 966
Males	54 666
Population under 5 years	12%
Population aged 5 to 14 years	17%
Population aged 15 to 59 years	66%
Population aged 60 years and above	5%
Female: male ratio	100:79
Literacy rate of 15 years old and above	99%
People above 15 years who have never attended school	5%
People above 15 years who are currently attending school	20%
People above 15 years who have left school	72%
People aged 15 years and above who belong to the labour force	68%
Population employed	55%
Homemakers	3%
Students	73%
Retired or old age income recipients	24%
Income from pension	10%
Income from business and non-farming activities	25%
Income from farming	6%
Income from cash remittance	5%
Wages and salaries	48%
Main Language	Rukwangali languages (46%) Nyemba-21%
KAVANGO EAST REGION	
ATTRIBUTE	**INDICATOR**
Population	218 421
Population aged 60 years and above	4%
Population aged 5 to 14 years	16%
Population aged 15 to 59 years	69%

3.2 BIO-PHYSICAL ENVIRONMENT

3.2.1 Climate

Rundu and its surroundings experience a hot semi-arid climate (Köppen BSh), characterized by high temperatures in summer and mild, dry winters. The hottest months are typically October to December, with average daily maximum temperatures ranging between 34°C and 36°C, and minimums around 20°C, as depicted in **Figure 3** below. In contrast, the coldest month is July, recording average maximum temperatures of about 26°C and minimums as low as 7°C (Climate-Data.org, n.d.; Climates to Travel, n.d.). The annual rainfall is approximately 570 mm, falling mostly between January and March, while the period from June to August remains largely dry (Climates to Travel, n.d.). The region shows significant diurnal temperature variation, especially in winter months. Prevailing winds are generally from the east, with stronger winds common in late winter and early spring (Mendelsohn, Jarvis, Roberts, & Robertson, 2002).

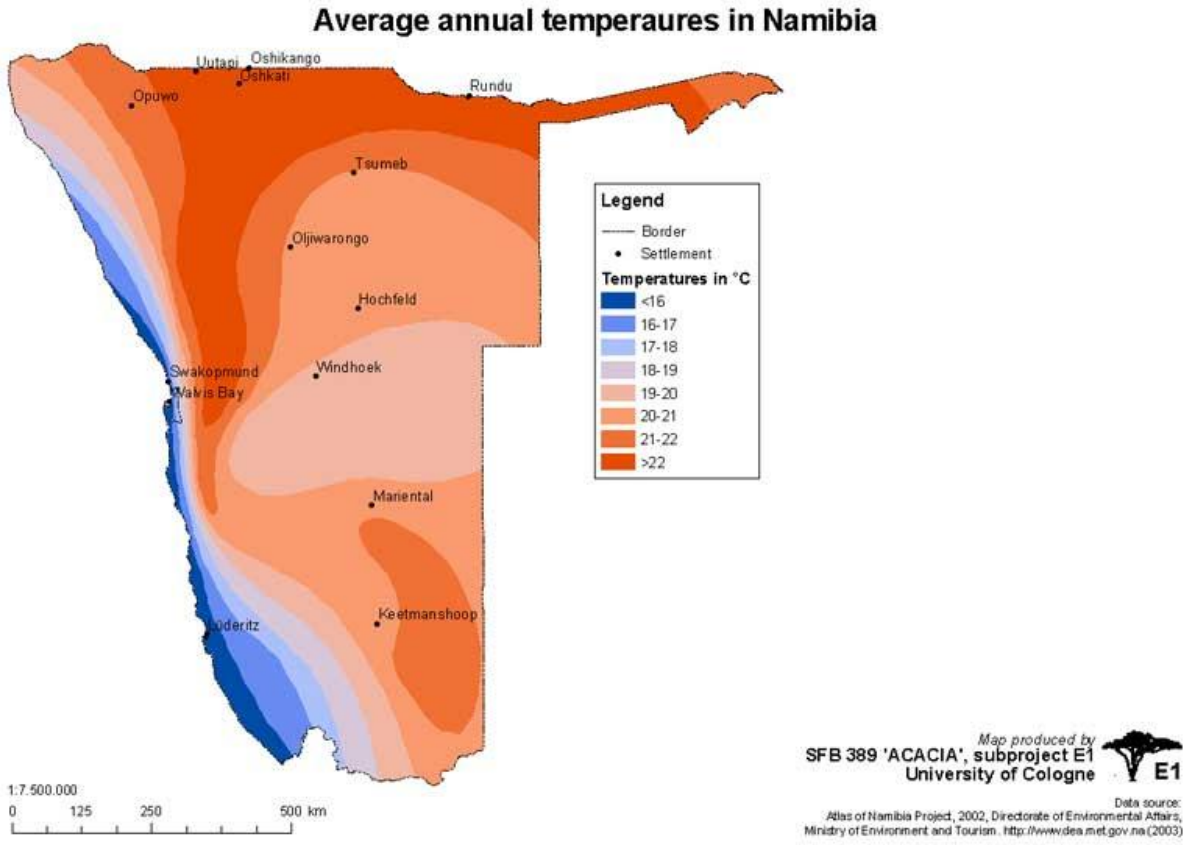


Figure 3: Annual average temperature (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/e1_download_climate_e.htm#temperature_annual)

Rundu receives an average annual rainfall of approximately 570 mm, with the majority of precipitation occurring during the summer rainy season from November to March. The wettest months are typically January and February, each receiving over 130 mm of rainfall on average. In contrast, the dry season from June to August sees negligible rainfall, often close to 0 mm (Climates to Travel, n.d.; Namibia Meteorological Service, 2020).

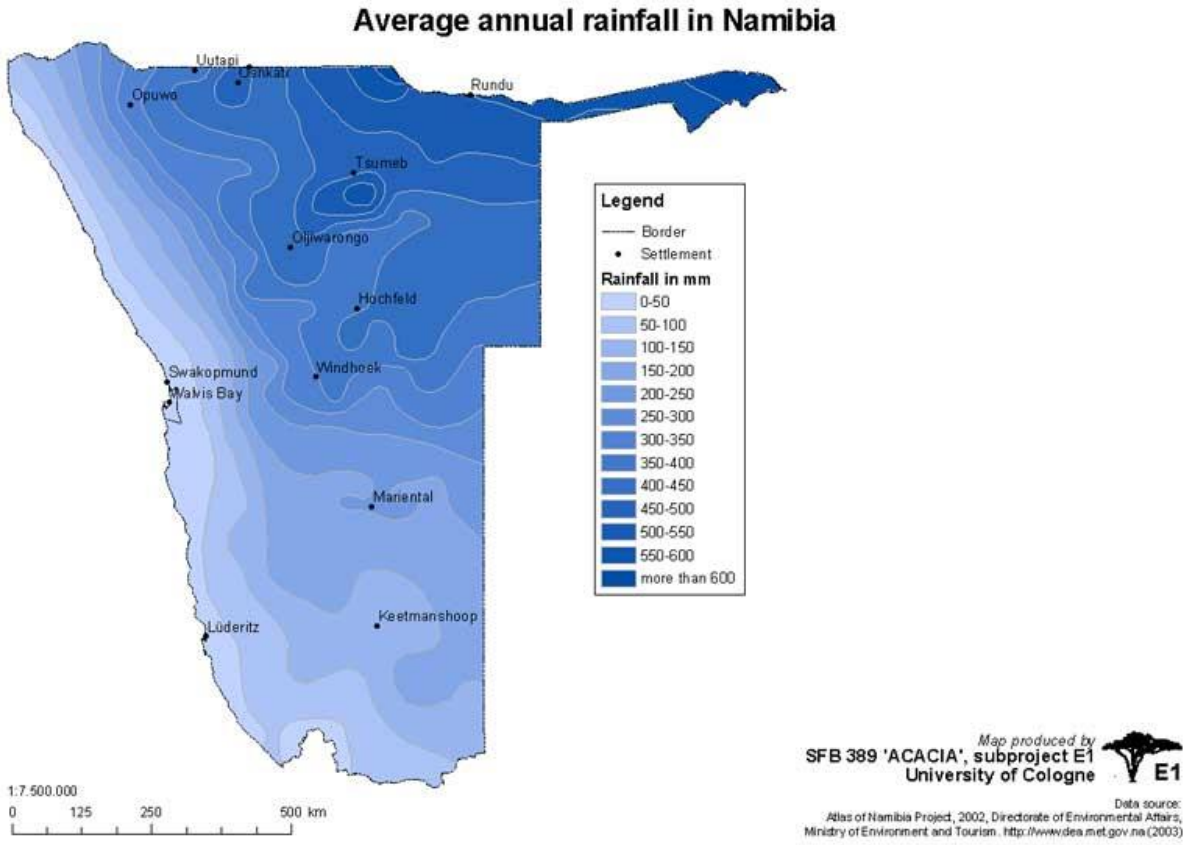


Figure 4: Average annual Rainfall (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/climate/rainfall-annual.jpg)

3.2.2 Topography, Geology and Soils

Rundu lies on gently undulating terrain at elevations between 1,000 and 1,100 metres above sea level, forming part of the Kalahari Basin. The area is underlain by deep Kalahari sand deposits of aeolian origin, which overly older, buried geological formations (Mendelsohn et al., 2002). Soils are mainly arenosols—deep, well-drained sandy soils with low fertility and high susceptibility to erosion and leaching. More fertile soils occur near the Okavango River due to sediment accumulation (Christelis & Struckmeier, 2011).

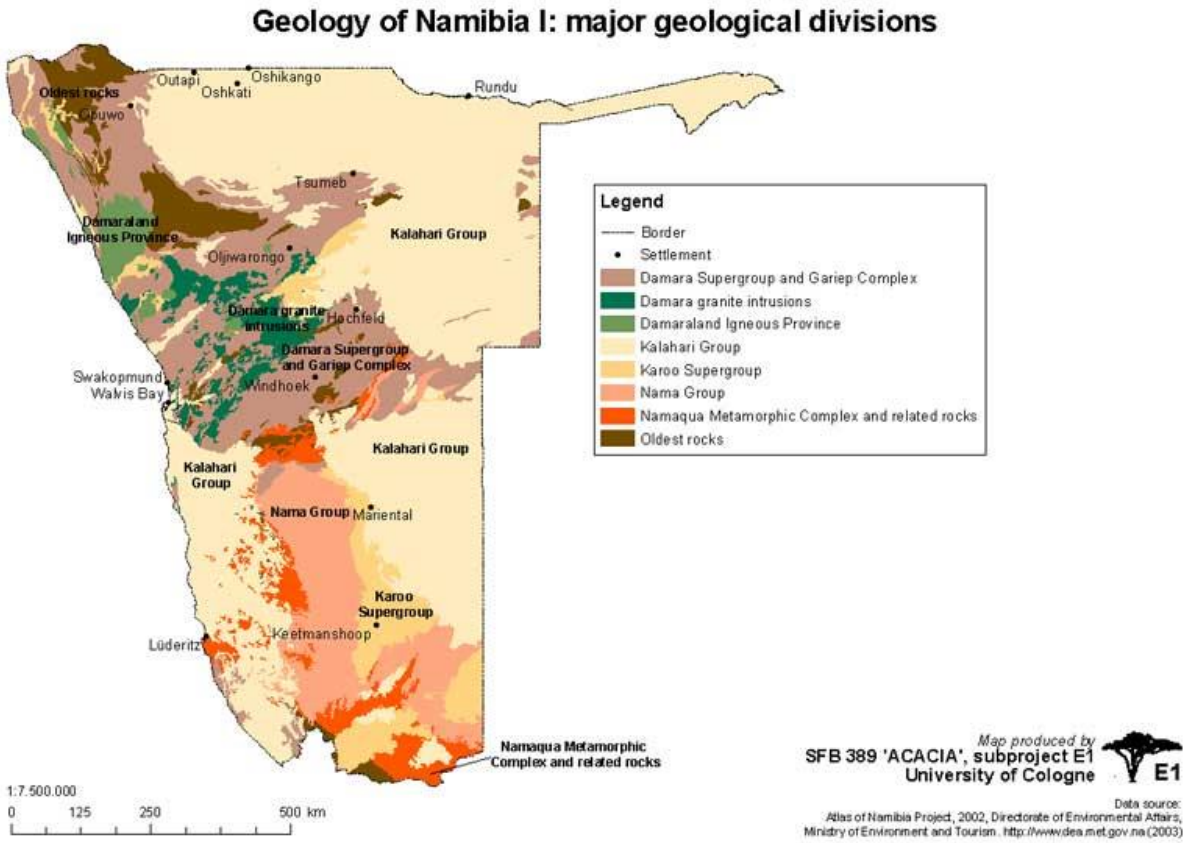


Figure 5: Geology of Namibia (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/physical/geology.jpg)

3.2.3 Hydrology and Hydrogeology

The main hydrological feature of the Kavango Region is the Kavango River as seen in **Figure 6** below. The Cuito River, a tributary, joins the Kavango River from Angola at Dirico, so flow volumes are greater downstream of this point. The Kavango River at Rundu experiences its highest water from January to May with the peak in April, in response to summer rain falling in the upstream catchment and making its way downstream. Water in the Cuito is delayed by a longer period and peaks in about May (Mendelsohn & el Obeid, 2004).

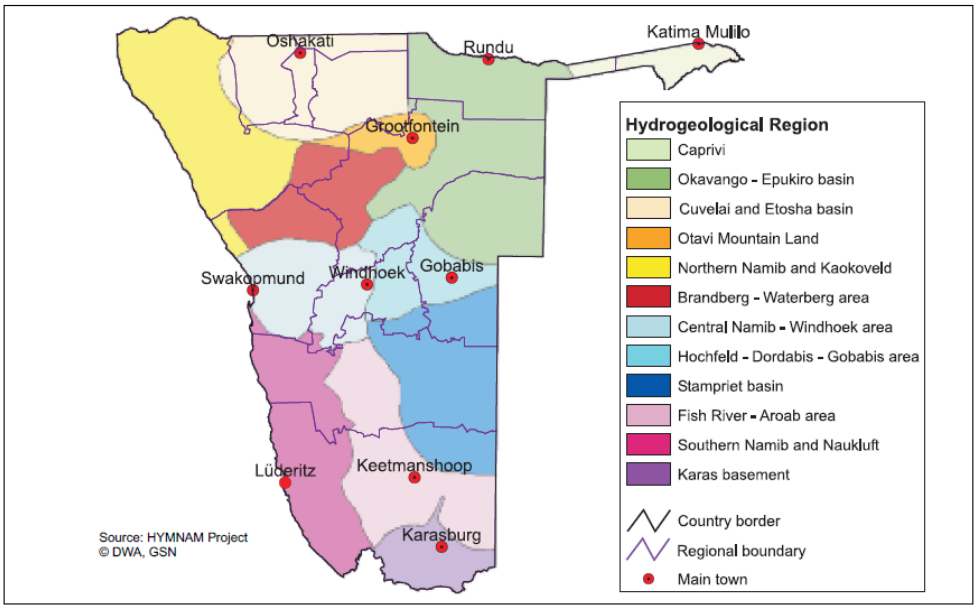


Figure 6: Groundwater basins and hydrogeological regions in Namibia

Rundu is situated in an area characterised by a productive porous aquifer. About 40 boreholes were drilled before Namibia's Independence within a 15 km radius of Rundu. The water levels range from 12 to 45 m depth with yields varying from 3 to 14 m^3/h. The original water supply for Rundu was by means of 2 boreholes that were drilled in the early 1950s near the government offices of Rundu (Stubenrauch Planning Consultants, 2013). Water is currently supplied to the town via distribution from the Rundu and Nkarapamwe Water Supply Schemes which are managed by NamWater. Water is abstracted from the Kavango River and transported to the two purification plants after which it is distributed to consumers.

3.3 TERRESTRIAL ECOLOGY

3.3.1 Flora and Fauna

The vegetation in and around Rundu is typical of the Northern Kalahari woodland savannah, dominated by open woodlands and shrublands. Common tree species include wild syringa (*Burkea africana*), kiaat (*Pterocarpus angolensis*), and Zambezi teak (*Baikiaea plurijuga*), interspersed with various Acacia species (Mendelsohn et al., 2002). The understory consists mainly of grasses and herbaceous plants adapted to sandy, nutrient-poor soils. Along the Okavango River, riparian vegetation such as reeds, papyrus, and other water-loving species occurs, providing critical habitat for birdlife and aquatic organisms (Curtis & Mannheimer, 2005). Human activities, including agriculture and fuelwood collection, have led to localized vegetation degradation, particularly near settlements.

The Okavango River supports a variety of fauna typical of the northeastern Kalahari woodlands and riparian ecosystems. Common mammal species include *Kobus ellipsiprymnus* (waterbuck), *Tragelaphus scriptus* (bushbuck), and small carnivores such as *Civettictis civetta* (African civet) and

Genetta genetta (common genet) (Mendelsohn et al., 2002). The river and adjacent floodplains provide important habitats for aquatic and semi-aquatic species, including *Crocodylus niloticus* (Nile crocodile) and *Hippopotamus amphibius* (hippopotamus), particularly in less disturbed areas (Curtis & Barnard, 1998).

Birdlife is especially rich, with over 400 bird species recorded in the greater Kavango region, including *Halcyon chelicuti* (striped kingfisher), *Anhinga rufa* (African darter), and seasonal migrants. Amphibians and reptiles are also diverse due to the region's water availability and warm climate. However, habitat fragmentation and human encroachment near the riverbanks have placed pressure on many wildlife species.

The project site is located on the outskirts of Rundu and is generally flat with minimal vegetation. It is sparsely covered with small shrubs and grasses, with no significant trees or dense plant cover. The area is currently undeveloped.

4 PROJECT DESCRIPTION

4.1 PROJECT COMPONENTS

As previously outlined in Section 1.1, the proposed project involves the following activities:

- **Subdivision of the Remainder of the Farm Rundu Townlands No. 1329 into 10 Portions and the Remainder;**
- **Reservation of Portions B, C, F and G for "Local Authority" purposes;**
- **Rezoning of Portion D from "Undetermined" to "Special" for a Cemetery;**
- **Rezoning of Portions I and J from "Undetermined" to "Street";**
- **Registration of a 22m Power line Servitude over Portions D, E and I in favour of NamPower;**
- **Inclusion in the next Zoning Scheme to be prepared for Rundu.**

These components will be described in further detail below, in terms of their design, layout and footprint.

4.2 ALTERNATIVES

Alternatives are defined as: "different means of meeting the general purpose and requirements of the activity" (Environmental Management Act (Act 7 of 2007) of Namibia and its regulations (2012)).
As pointed out in Section 1.4 above various layout alternatives were initially considered by the Proponent prior to the commencement of the EA, ultimately resulting in the final layouts. Therefore, the only alternative that will be discussed in this chapter is the no-go alternative.

4.2.1 No – Go Alternative

The no-go alternative entails maintaining the status quo, where the Remainder of Farm Rundu Townlands No. 1329 remains largely undeveloped and unzoned. This would mean no formal subdivision, no allocation of land for essential public uses such as a cemetery, local authority facilities, or road infrastructure, and no provision for powerline servitudes. As a result, the Rundu Town Council would be unable to respond to growing service demands, and residents would not benefit from improved infrastructure, planning, and service delivery. Therefore, the no-go alternative is not considered a preferred option, as it limits development and delays much-needed socio-economic improvements in the area.

4.3 NEED AND DESIRABILITY OF THE PROJECT

The proposed subdivision and rezoning aim to support urban development and service delivery in Rundu. Reserving land for local authority use and a cemetery address growing public needs, while the creation of road reserves improves access and mobility. The powerline servitude ensures continued infrastructure development in line with NamPower's plans. Including the land in Rundu's future zoning scheme promotes orderly and planned growth.

4.4 THE PROPOSED DEVELOPMENT

The Rundu Town Council proposes the subdivision of the Remainder of Farm Rundu Townlands No. 1329 into ten (10) portions and a remainder to address key urban service needs and support orderly town expansion.

One of the primary drivers for the proposed development is the urgent need for a new cemetery. The existing burial grounds in Rundu are nearing full capacity, and the previously approved cemetery site (as per NAMPAB Item 49/2010) has become unusable due to informal settlement. The increasing urban population and associated mortality rate have intensified the need for a formal and accessible burial site. Portion D has therefore been identified and proposed for rezoning from Undetermined to Special for cemetery use.

Additionally, portions I and J are proposed to be rezoned from Undetermined to Street to provide essential access routes within the area. Portions B, C, F, and G are reserved for Local Authority purposes to allow the Council to plan for future infrastructure and service delivery needs.

A 22-meter-wide powerline servitude is also proposed to run over Portions D, E, and I in favour of NamPower. This servitude will support the delivery of reliable power infrastructure, aligning with the national goal of expanding access to electricity and promoting renewable energy integration in the long term.

To ensure future spatial planning and land use control, the entire project area is proposed to be included in the next zoning scheme to be prepared for Rundu. All the proposed land uses are complementary and will be located on the outskirts of the townlands to reduce pressure on existing urban services and allow for appropriate buffer zones between sensitive land uses, such as the cemetery and future residential developments.

Therefore, it is the proponent's intention to undertake the following activities:

- **Subdivision of the Remainder of the Farm Rundu Townlands No. 1329 into 10 Portions and the Remainder;**
- **Reservation of Portions B, C, F and G for "Local Authority" purposes;**
- **Rezoning of Portion D from "Undetermined" to "Special" for a Cemetery;**
- **Rezoning of Portions I and J from "Undetermined" to "Street";**
- **Registration of a 22m Power line Servitude over Portions D, E and I in favour of NamPower;**

- **Inclusion in the next Zoning Scheme to be prepared for Rundu.**

4.4.1 Subdivision of the Remainder of the Farm Rundu Townlands No. 1329

The subdivision of the Remainder of the Farm Rundu Townlands No. 1329 will create the various portion that will be used to establish and construct the dumpsite, cemetery, dumpsite and recycling plant as seen in **Figure 7**.

Table 5: Proposed land use/ rezoning and Sizes of newly created portions

Portion Number	Proposed Re-zoning	± Area (Ha)
Portion B	Local Authority	1.6
Portion C	Local Authority	1.6
Porton D	Special (Cemetery)	32
Portion E	Special (Solar plant)	33
Portion F	Local Authority	1.7
Portion G	Local Authority	1.7
Portion H	Special (Waste dump site/ landfill)	31
Portion I	Street	1.7
Portion J	Street	1.8
Total Area of Portions		106.1

4.4.2 Reservation of Portions B, C, F and G for "Local Authority" purposes

Portions B, C, F and G were created to form a buffer between the D3402 District Road and the proposed recycling plant, cemetery, dump site and solar plant. This buffer will be used for street landscaping such as planting of trees as it is at the entrance of Rundu from the south.

Reserving Portions B, C, F and G for "Local Authority" purposes for ease of use in the future by the Rundu Town Council.

Table 4: Portions B, C, F and G

Portion Number	**Current Zoning**	**Proposed Zoning**
Portion B	Undetermined	Local Authority
Portion C	Undetermined	Local Authority
Portion F	Undetermined	Local Authority
Porton G	Undetermined	Local Authority

4.4.3 Rezoning of Portion D from "Undetermined" to "Special" for a Cemetery

Rezoning Portion D from "Undetermined" to "Special" for a Cemetery, will allow the Rundu Town Council to develop a new cemetery to cater for the growing population of Rundu.

Portion Number	Current Zoning	Proposed Zoning
Portion D	Undetermined	Special for a Cemetery

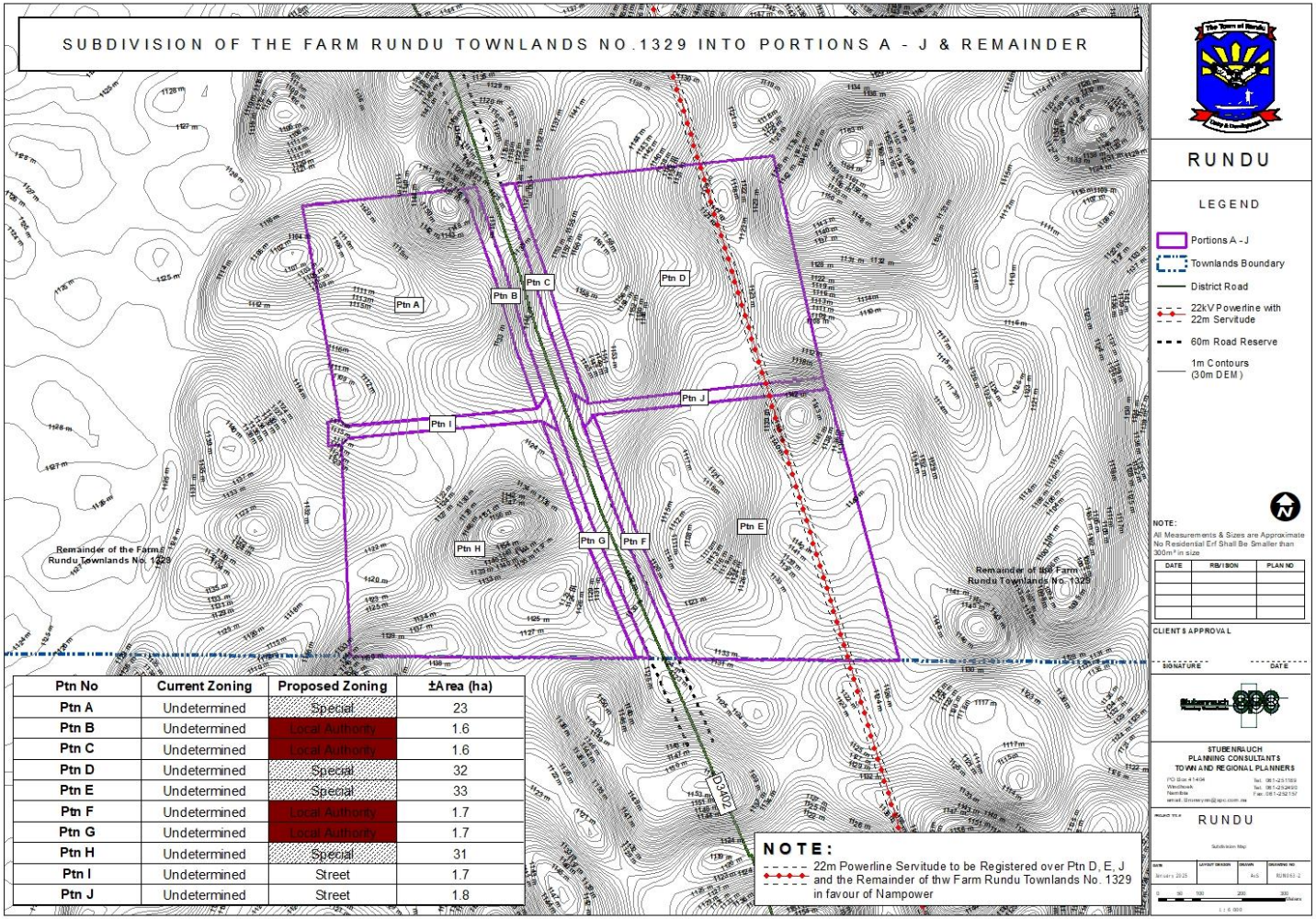
4.4.4 Rezoning of Portions I and J from "Undetermined" to "Street

Portions I and J were created to provide access onto Portions A, B, C, D, E, F, G and H, since no direct access onto a property can be obtained from a district road. The D3402 District Road provides access to Portions I and J (Street) that will then provide access to Portions A – H. These streets will also be used for future urban expansion in Rundu.

Portion Number	Current Zoning	Proposed Zoning
Portion I	Undetermined	Street
Portion J	Undetermined	Street

4.4.5 Registration of a 22m Power line Servitude over Portions D, E and I in favor of NamPower

An existing NamPower powerline traverses the Remainder of Farm Rundu Townlands No. 1329, a servitude for which has not been registered. The Rundu Town Council therefore intends to formalize this existing infrastructure by registering the servitude and ensuring that the powerline is appropriately accommodated within the proposed development.



Ptn No	Current Zoning	Proposed Zoning	±Area (ha)
Ptn A	Undetermined	Special	23
Ptn B	Undetermined	Local Authority	1.6
Ptn C	Undetermined	Local Authority	1.6
Ptn D	Undetermined	Special	32
Ptn E	Undetermined	Special	33
Ptn F	Undetermined	Local Authority	1.7
Ptn G	Undetermined	Local Authority	1.7
Ptn H	Undetermined	Special	31
Ptn I	Undetermined	Street	1.7
Ptn J	Undetermined	Street	1.8

Figure 7: Layout of Proposed Subdivision of the Remainder of the Farm Rundu Townlands No. 1329

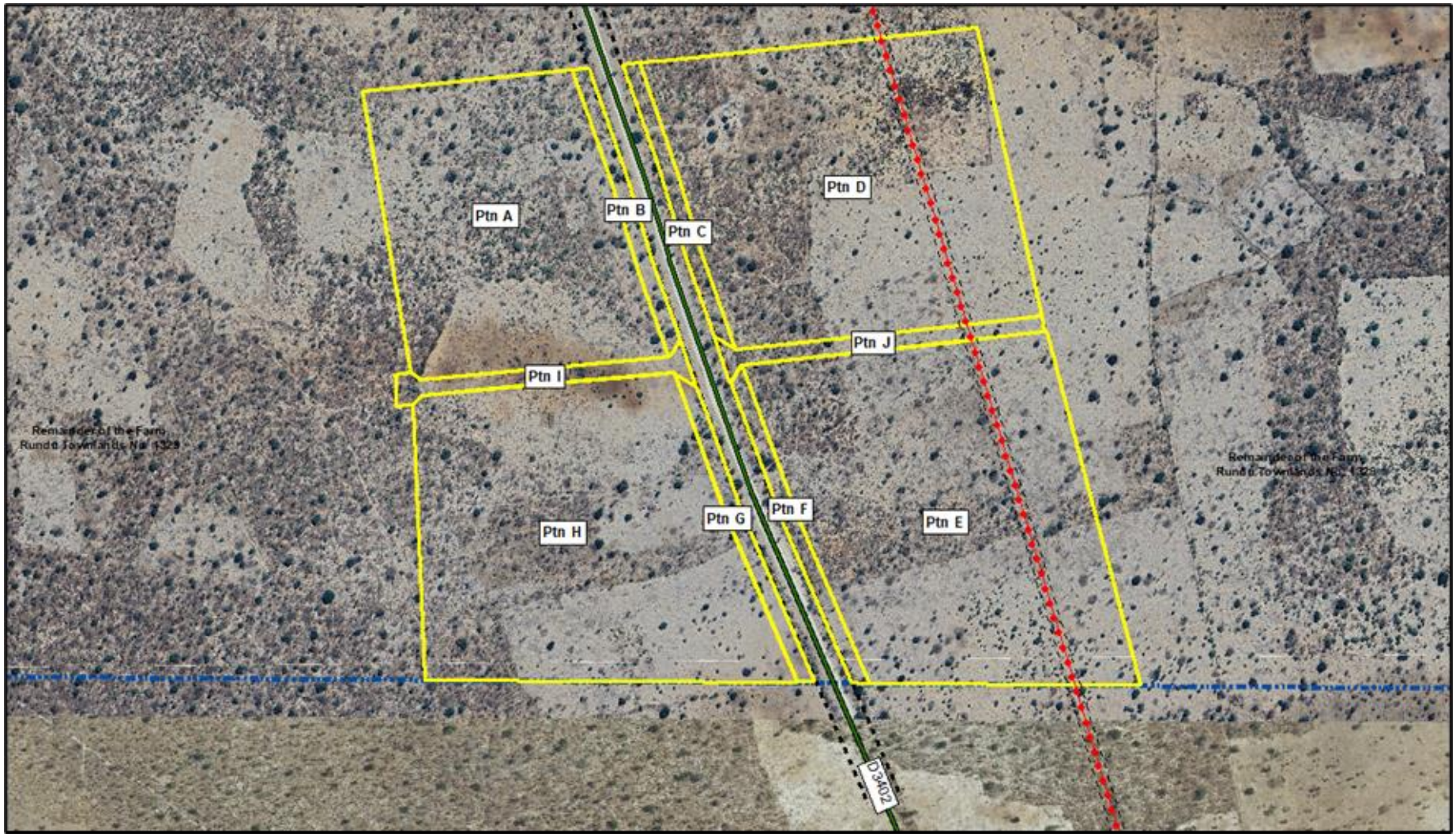


Figure 8: Superposition of the proposed urban plan onto the GoogleEarth image of the site

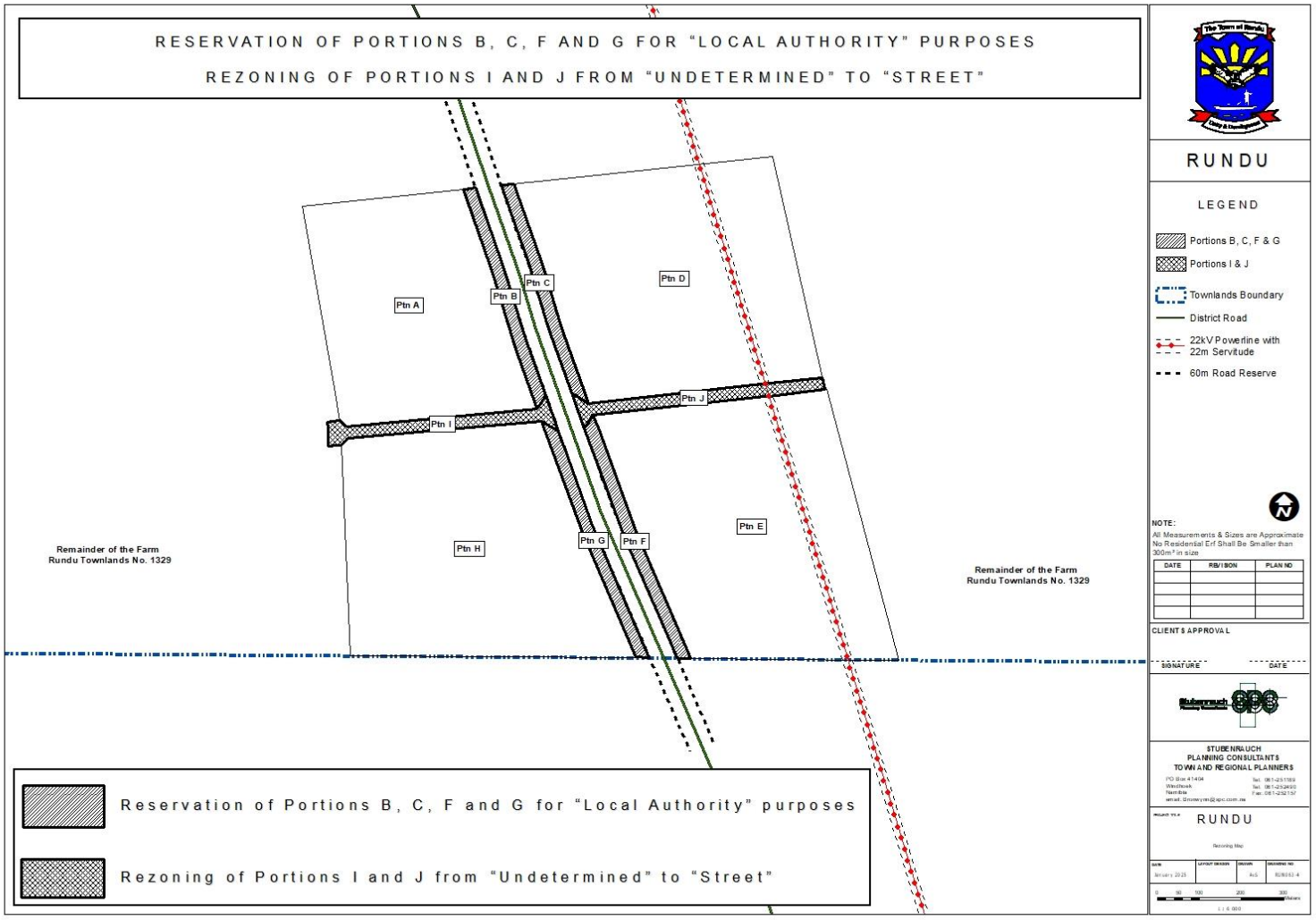


Figure 9: Reservation of Portions B, C, F and G for "Local Authority" purposes

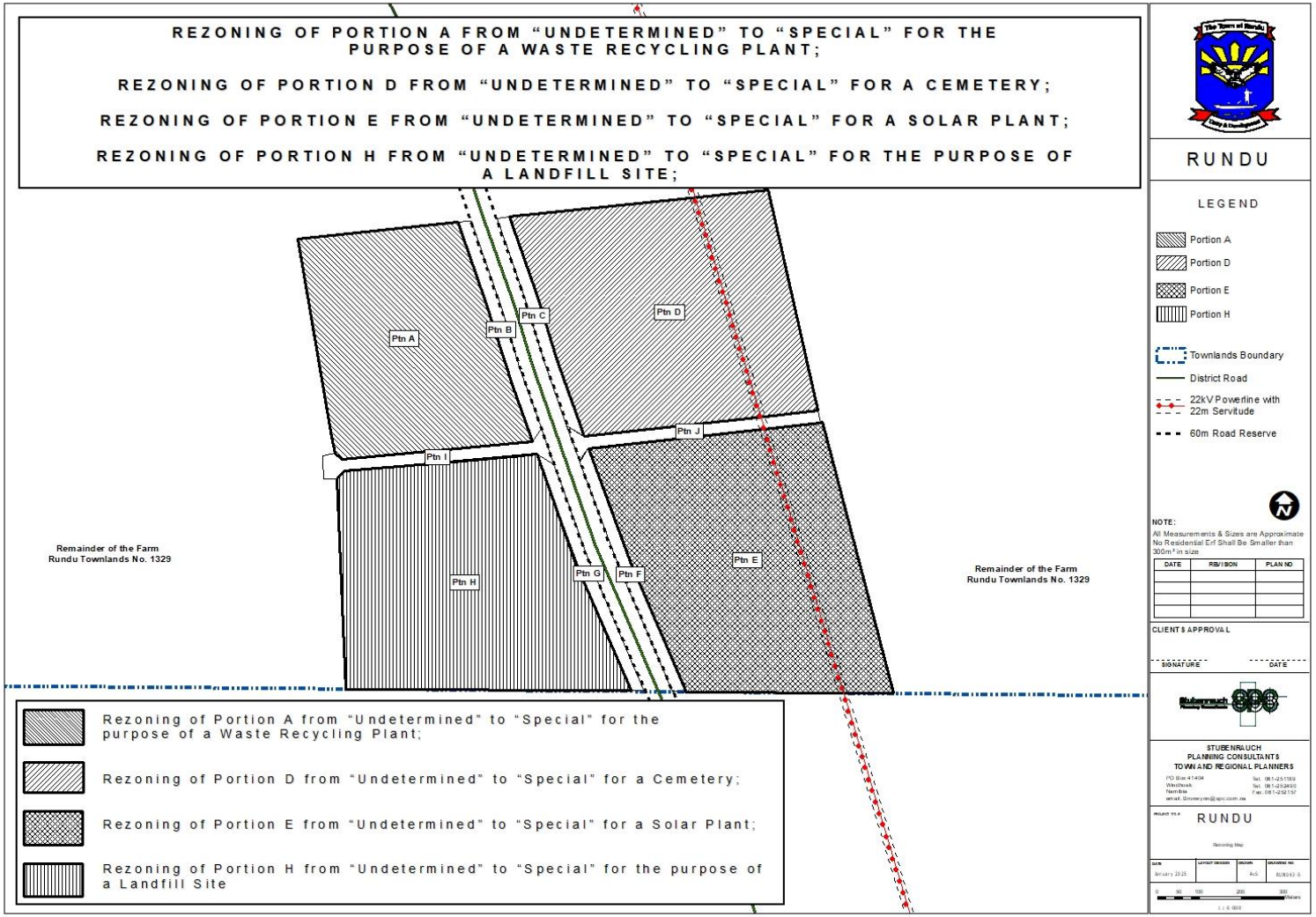


Figure 10: The proposed rezonings

4.4.6 Engineering Services and Access provision

4.4.6.1 Water, Electricity, and Sewer

The newly created cemetery will be connected to the municipal reticulation system of the Rundu Town Council which consists of water, electricity and sewer connections.

4.4.6.2 Access Provision

The D3402 District Road provides access to Portion I and J (street) which will then provide access to Portions A – H.

5 PUBLIC PARTICIPATION PROCESS

5.1 PUBLIC PARTICIPATION REQUIREMENTS

In terms of Section 21 of the EIA Regulations a call for open consultation with all I&APs at defined stages of the EIA process is required. This entails participatory consultation with members of the public by providing an opportunity to comment on the proposed project. Public Participation has thus incorporated the requirements of Namibia's legislation, but also takes account of international guidelines, including Southern African Development Community (SADC) guidelines and the Namibian EIA Regulations. Public participation in this project has been undertaken to meet the specific requirements in accordance with the international best practice. Please see **Table 9** below for the activities undertaken as part of the public participation process. The I&APs were given time to comment from **19 June 2025 to 10 July 2025.**

Table 6: Table of Public Participation Activities

ACTIVITY	REMARKS
Placement of site notice/poster in Rundu	See **Annexure A**
Placing advertisements in two newspapers namely the New Era and The Namibian (**19 June and 26 June 2025**)	See **Annexure B**
Written notice to surrounding property owners and Interested and Affected Parties via Email (**19 June 2025**)	See **Annexure C**

5.1.1 Environmental Assessment Phase 2

The second phase of the PPP involves the lodging of the Draft Environmental Scoping Report (DESR) for comment by all registered I&APs. Registered and potential I&APs were informed of the availability of the DESR for public comment via a letter/email dated **30 July 2025**. An Executive Summary of the DESR was included in the letters to the registered I&APs. I&APs had until **13 August 2025** to submit comments or raise any issues or concerns they may have regarding the proposed project. No comments were received from the public on the draft report.

6 IMPACT ASSESSMENT METHODOLOGY

The purpose of this chapter is to describe the impact assessment methodology utilized in determining the significance of the construction and operational impacts of the proposed project, and, where applicable, the alternatives, on the biophysical and socio-economic environment.

Assessment of predicted significance of impacts for a proposed development is by its nature, inherently uncertain – environmental assessment is thus an imprecise science. To deal with such uncertainty in a comparable manner, a standardised and internationally recognised methodology has been developed. Such accepted methodology is applied in this study to assess the significance of the potential environmental impacts of the proposed development, outlined as follows in **Table 10**.

Table 7: Impact Assessment Criteria

CRITERIA	CATEGORY
Impact	Description of the expected impact
Nature Describe type of effect	**Positive**: The activity will have a social / economical / environmental benefit. **Neutral**: The activity will have no effect **Negative**: The activity will have a social / economical / environmental harmful effect
Extent Describe the scale of the impact	**Site Specific:** Expanding only as far as the activity itself (onsite) **Small:** restricted to the site's immediate environment within 1 km of the site (limited) **Medium:** Within 5 km of the site (local) **Large:** Beyond 5 km of the site (regional)
Duration Predicts the lifetime of the impact.	**Temporary:** < 1 year (not including construction) **Short-term:** 1 – 5 years **Medium term:** 5 – 15 years **Long-term:** >15 years (Impact will stop after the operational or running life of the activity, either due to natural course or by human interference) **Permanent:** Impact will be where mitigation or moderation by natural course or by human interference will not occur in a particular means or in a particular time period that the impact can be considered temporary
Intensity Describe the magnitude (scale/size) of the Impact	**Zero:** Social and/or natural functions and/ or processes remain unaltered **Very low:** Affects the environment in such a way that natural and/or social functions/processes are not affected

CRITERIA	CATEGORY
	Low: Natural and/or social functions/processes are slightly altered **Medium:** Natural and/or social functions/processes are notably altered in a modified way **High:** Natural and/or social functions/processes are severely altered and may temporarily or permanently cease
Probability of occurrence Describe the probability of the Impact actually occurring	**Improbable:** Not at all likely **Probable:** Distinctive possibility **Highly probable:** Most likely to happen **Definite:** Impact will occur regardless of any prevention measures
Degree of Confidence in predictions State the degree of confidence in predictions based on availability of information and specialist knowledge	**Unsure/Low:** Little confidence regarding information available (<40%) **Probable/Med:** Moderate confidence regarding information available (40-80%) **Definite/High:** Great confidence regarding information available (>80%)
Significance Rating The impact on each component is determined by a combination of the above criteria.	**Neutral:** A potential concern which was found to have no impact when evaluated **Very low:** Impacts will be site specific and temporary with no mitigation necessary. **Low:** The impacts will have a minor influence on the proposed development and/or environment. These impacts require some thought to adjustment of the project design where achievable, or alternative mitigation measures **Medium:** Impacts will be experienced in the local and surrounding areas for the life span of the development and may result in long term changes. The impact can be lessened or improved by an amendment in the project design or implementation of effective mitigation measures. **High:** Impacts have a high magnitude and will be experienced regionally for at least the life span of the development or will be irreversible. The impacts could have the no-go proposition on portions of the development in spite of any mitigation measures that could be implemented.

*NOTE: Where applicable, the magnitude of the impact has to be related to the relevant standard (threshold value specified, and source referenced). The magnitude of impact is based on specialist knowledge of that particular field.

For each impact, the NATURE, EXTENT (spatial scale), DURATION (time scale) and INTENSITY are rated and added to give a score for the MAGNITUDE of the impact. This is then multiplied by the PROBABILITY of occurrence to ascertain the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. Such significance is also informed by the context of the impact, i.e. the character and identity of the receptor of the impact.

6.1 MITIGATION MEASURES

Figure 11: Mitigation Hierarchy

There is a mitigation hierarchy of actions which can be undertaken to respond to any proposed project or activity (See **Figure 10**). It is possible and considered sought after to enhance the environment by ensuring that positive gains are included in the proposed activity or project. If negative impacts occur, then the hierarchy indicates the following steps.

Impact avoidance: This step is most effective when applied at an early stage of project planning. It can be achieved by:

- not undertaking certain projects or elements that could result in adverse impacts;
- avoiding areas that are environmentally sensitive; and
- putting in place preventative measures to stop adverse impacts from occurring.

Impact minimization: This step is usually taken during impact identification and prediction to limit or reduce the degree, extent, magnitude, or duration of adverse impacts. It can be achieved by:

- scaling down or relocating the proposal;
- redesigning elements of the project; and
- taking supplementary measures to manage the impacts.

Restoration: This step is taken to improve degraded or removed ecosystems following exposure to impacts that cannot be completely avoided or minimised. Restoration tries to return an area to the original ecosystem that occurred before impacts. Restoration is frequently needed towards the end of a project's life-cycle but may be possible in some areas during operation.

Impact compensation: This step is usually applied to remedy unavoidable, residual adverse impacts. It can be achieved by:

- rehabilitation of the affected site or environment, for example, by habitat enhancement;
- restoration of the affected site or environment to its previous state or better; and
- replacement of the same resource values at another location (off-set), for example, by wetland engineering to provide an equivalent area to that lost to drainage or infill.

7 ASSESSMENT OF POTENTIAL IMPACTS AND POSSIBLE MITIGATION MEASURES

INTRODUCTION

This Chapter describes the potential impacts on the biophysical and socio-economic environments that may occur due to the proposed activities, described in Chapter 4, affecting the baseline environment, described in Chapter 4. The assessment focuses on impacts that may arise during construction (i.e. short to medium term) and the operation of the proposed development (i.e. long-term impacts) but also includes consideration of planning phase impacts and cumulative impacts. Decommissioning is not included, because demolition and rehabilitation of a development such as this is never anticipated nor planned for.

The baseline and potential impacts that could result from the proposed development are described and assessed with potential mitigation measures recommended. The primary and most significant impacts of this type of urban development accrue during the construction phase, hence greater definition and detail is provided in this chapter concerning the impacts of that phase. Operational phase impacts will occur over a long period of time/ indefinitely but at a low level of intensity. Finally, comment is provided on the cumulative impacts that could result should this development, and others like it in the area, be approved.

7.1 PLANNING AND DESIGN PHASE IMPACTS

During the planning and design phase consideration should be given on aspects such as impacts of existing municipal infrastructure and biodiversity.

7.1.1 Existing Service Infrastructure Impacts

Minimal impacts are expected during this phase. The site will be connected to the Rundu Town Council's municipal reticulation system, which includes water, electricity, and sewer services. Proper planning and coordination will ensure existing infrastructure is not disrupted.

7.2 CONSTRUCTION PHASE IMPACTS ON THE BIOPHYSICAL ENVIRONMENT

The construction phase impacts are those impacts on the biophysical and socio-economic environment that would occur during the construction phase. These impacts are inherently temporary in duration but may have longer lasting effects.

7.2.1 Air quality: gaseous pollution and dust

Construction activities will generate dust from land clearing and movement of vehicles, especially in dry conditions. Exhaust emissions from machinery will also release gases like CO and NO_2. These may temporarily affect local air quality. Impacts can be managed through dust suppression and proper maintenance of equipment.

7.2.2 Topography and Soil Erosion Impacts

The proposed development activities including subdivision, rezoning, and establishment of a cemetery, streets, and service infrastructure will involve significant site preparation, such as vegetation clearance, excavation, and leveling. These activities can alter the natural topography of the site, expose soil surfaces and increase the risk of soil erosion, particularly during the rainy season.

The construction of access roads (Portions I and J), the installation of a 22m-wide powerline servitude (across Portions D, E, and I), and preparation of the cemetery site (Portion D) may involve earthworks that disturb surface stability. If not properly managed, such disturbances can lead to sediment runoff, loss of topsoil, and siltation in nearby drainage lines or low-lying areas unless measures are taken to safeguard topsoil and use it in site rehabilitation works.

7.2.3 Surface Water and Groundwater Impacts

Surface and groundwater impacts may arise during the construction phase, especially if activities occur during the rainy season. Land clearing and earthworks could result in increased surface runoff and soil erosion, potentially leading to elevated sedimentation in nearby low-lying or floodplain areas within the townlands.

Accidental spillages of oils, fuels, and other hazardous substances from construction vehicles and machinery may pose a risk of contamination to both surface water and shallow groundwater. However, this risk is considered low, as the construction phase is short-term, and such incidents are likely to be infrequent and of low intensity. With proper site management, including spill prevention and containment measures, potential impacts can be effectively minimized.

7.2.4 Flora and Fauna Impacts (Biodiversity)

Construction activities such as vegetation clearance for road infrastructure (Portions I and J), cemetery development (Portion D), and powerline installation may disturb this habitat, leading to minor loss of flora and displacement of fauna. However, given the proximity to existing development

and the absence of sensitive or protected ecosystems, overall biodiversity impacts are expected to be low.

To minimise impacts, vegetation clearance should be limited to necessary areas only, and mature or indigenous trees should be retained where possible. Rehabilitation of disturbed areas post-construction can help restore ecological balance.

7.3 CONSTRUCTION PHASE IMPACTS ON THE SOCIO-EONOMIC ENVIRONMENT

7.3.1 Heritage impacts

No archaeological and heritage resources are expected to be found on the site. The project management should however be made aware of the provisions of the National Heritage Act regarding the prompt reporting of archaeological finds.

7.3.2 Health, Safety and Security Impacts

Working conditions on site need to ensure that the health and safety of construction workers are ensured at all times. The use of local labour during construction is strongly encouraged to reduce the need for migrant workforce. Health and Safety requirements need to comply with the Labour Act No. 11 of 2007, local and international health and safety legislation and standards during construction.

7.3.3 Traffic Impacts

The construction phase may lead to a temporary increase in traffic volumes due to the movement of construction vehicles, delivery trucks, and equipment. Not only will the increase in traffic result in associated noise impacts, but it will also impact on the roads in the area

Since the site is located on the outskirts of Rundu, the impact on central town traffic is expected to be minimal. However, heavy vehicle movement may affect nearby residential areas or informal settlements, particularly during peak hours.

7.3.4 Noise Impacts

Construction may result in associated noise impacts. These noise impacts will mainly be associated with construction machinery and construction vehicles. The impact is however limited mainly to the construction period only and can be further reduced by restricting construction to daylight hours during the week and morning only on Saturdays.

7.3.5 Dust and Emission Impacts

Excavation and stockpiles during the construction phase will result in dust impacts, if not managed correctly. Dust could impact negatively on the health of the nearby community if mitigation measures are not implemented. Dust impacts are primarily associated with the construction phase.

7.3.6 Municipal Services

The construction phase will result in additional people on-site, who will require provision of the following services:

- Potable water for domestic (ablution and drinking) and construction purposes.
- Temporary toilets during the construction phase.
- Solid waste management (domestic and construction waste).

These services if not managed well are likely to create an opportunity for water wastage; litter; solid and human waste pollution.

7.3.7 Storage and Utilisation of Hazardous Substances

Hazardous substances are regarded by the Hazardous Substance Ordinance (No. 14 of 1974) as those substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances. During the construction period, the use and storage of these types of hazardous substances, such as shutter oil, curing compounds, types of solvents, primers and adhesives and diesel, on-site could have negative impacts on the surrounding environment if these substances spill and enter the environment.

7.4 OPERATIONAL PHASE IMPACTS

The operational phase impacts are those impacts on the biophysical and socio-economic environment that would occur during the operational phase of the proposed project and are inherently long-term in duration.

7.4.1 Flora and Fauna Impacts (Biodiversity)

Trees protected under the Forestry Act 12 of 2001 should be protected within the development and may not be removed without a valid permit. The proposed site for the cemetery has no significant vegetation cover, which minimizes direct impacts on flora. However, during operation, ongoing vehicle movement, noise, and the accumulation of waste may still disturb nearby fauna.

It is anticipated that the proposed development area and associated infrastructure (e.g. water, sewage, access route, etc.) would have localised negative implications on the environment and associated fauna and flora should the proposed mitigation measures as outlined in the EMP be enforced.

7.4.2 Soil and Ground Water impacts

The operational activities may result in the environmental pollutions such as possible pollution of ground water, land degradation and soil pollution. This may particularly occur due to the use of certain chemicals used during burials. As such mitigation measures outlined within the EMP need to be adhered to, to ensure that these impacts are minimised.

7.4.3 Soil Erosion Impacts

Soil is used to cover the graves and fil out the excavations. As a result, lose soil often remain stockpiled which may be susceptible to wind and/or surface-water runoff.

7.5 OPERATIONAL PHASE IMPACTS ON THE SOCIO-EONOMIC ENVIRONMENT

7.5.1 Heritage impacts

No archaeological and heritage resources are expected to be found on the site. The project management should however be made aware of the provisions of the National Heritage Act regarding the prompt reporting of archaeological finds. Section 3.1.2 provides an overview of the archaeological and heritage context of the town and region.

7.5.2 Noise Impacts

The operational activities may result in associated noise impacts, depending on the exact type of activities taking place on the properties. However, due to the nature of the land uses proposed for the subject erven it is not expected that the noise levels will be significant if managed well.

7.5.3 **Emission Impacts**

The air quality in the area is considered to be fairly good. Additional emissions are not expected due to the land uses that are intended for the site.

7.5.4 **Social Impacts**

A small number of residents from Rundu could benefit from employment by the activities taking place at the site.

7.6 CUMULATIVE IMPACTS

The cumulative impact of anticipated developments with respect to the long-term degradation of the project area is very difficult to rate. If all proposed mitigation measures are however in place to minimise the overall impacts, then the cumulative impact can be expected to be rated as ***Medium-Low (negative)***.

7.7 ENVIRONMENTAL MANAGEMENT PLAN

An Environmental Management Plan (EMP) is contained in **Annexure F** of this report. The purpose of the EMP is to outline the type and range of mitigation measures that should be implemented during the construction and decommissioning phases of the project to ensure that negative impacts associated with the development are avoided or mitigated.

7.8 SUMMARY OF POTENTIAL IMPACTS

A summary of all the potential impacts from the proposed project assessed above is included in **Table 8**. The **Tables 9 – 11** provide a summary of the mitigation measures proposed for the impacts. While some difference in magnitude of the potential impacts would result from the no-go alternative considered, this difference was not considered to be significant for any of the potential impacts. As such, the table below applies to both the preferred alternative and the no-go option.

Table 8: Summary of the significance of the potential impacts

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
PLANNING AND DESIGN PHASE										
1. **Existing Service Infrastructure**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Medium-Low	Short term	Medium	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
CONSTRUCTION PHASE										
2. **Biodiversity (Fauna and Flora)**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Very Low	Short term	Very Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
3. **Surface & ground water**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Medium	Short term	Medium	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Medium Low	Short term	Medium - low	Probable	Certain	Reversible	Medium - Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
4. **Soil erosion**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Medium	Short term	Medium – low	Probable	Certain	Reversible	Medium – low (-ve)
		Mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
5. **Heritage**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Very low	Short term	Very low	Probable	Certain	Irreversible	Very low(-ve)
		Mitigation	Local	Negligible	Short term	Negligible	Probable	Certain	Irreversible	Negligible (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
6. **Health, safety and security**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Medium-Low	Short term	Medium-Low	Probable	Certain	Reversible	Medium-Low (-ve)
		Mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
7. **Traffic impacts**	Remainder of the Farm Rundu	No mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Very low	Short term	Very low	Probable	Certain	Reversible	Very low

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
	Townlands No. 1329									
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
8. **Noise impacts**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Medium	Short term	Medium - low	Probable	Certain	Reversible	Medium - Low (-ve)
		Mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Very low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
9. **Airborne emissions impacts**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Medium	Short term	Low	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Low	Short term	Very Low	Probable	Certain	Reversible	Very Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
10. **Municipal services**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Very low	Short term	Very low	Probable	Certain	Reversible	Very low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
11. **Waste**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Low	Short term	Medium	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Very low	Short term	Low	Probable	Certain	Reversible	Very low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
12. **Hazardous Substances**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Low	Short term	Medium	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Very low	Short term	Low	Probable	Certain	Reversible	Very low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
OPERATIONAL PHASE										
1. **Noise**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Medium-Low	Medium term	Medium-Low	Probable	Certain	Reversible	Medium-Low (-ve)
		Mitigation	Local	Low	Medium term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
2. **Emissions**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Medium-Low	Medium term	Low	Probable	Certain	Reversible	Medium-Low (-ve)
		Mitigation	Local	Low	Medium term	Very Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral
3. **Social impact**	Remainder of the Farm Rundu Townlands No. 1329	No mitigation	Local	Medium	Long term	Low (+)	Probable	Probable	Reversible	Medium (+)
		Mitigation	Local	Medium	Long term	Low (+)	Probable	Probable	Reversible	Medium (+)
	No go	No mitigation	Local	Neutral	Long term	Neutral	Probable	Probable	Reversible	Neutral
		Mitigation	Local	Neutral	Long term	Neutral	Probable	Probable	Reversible	Neutral

Table 9: Proposed mitigation measures for the planning and design phase

PLANNING AND DESIGN PHASE	
Impact	**Mitigation Measures**
Existing Service Infrastructure Impacts	• Water saving mechanisms should be considered for incorporation within the developments in order to further reduce water demand. • Re-use of treated wastewater should be considered wherever possible to reduce the consumption of potable water.

Table 10: Proposed mitigation measures for the construction phase

CONSTRUCTION PHASE IMPACTS	
Impact	**Mitigation Measures**
Flora and Fauna	• Prevent contractors from collecting wood, veld food, etc. during the construction phase. • Minimize vegetation clearance and keep individual trees/shrubs not directly affecting the developments as part of the landscaping. • The plants that are to be kept should be clearly marked with “danger tape” to prevent accidental removal or damage. • Recommend the planting of local indigenous species of flora as part of the landscaping as these species would require less maintenance than exotic species. • Protected trees are not to be removed without a valid permit from the local Department of Forestry.
Surface and Ground Water Impacts	• No dumping of waste products of any kind on or around the site. • Collection and disposal of solid waste from the sites should be properly managed and general waste taken to the designated landfill site. • Heavy construction vehicles should be kept away from surface water bodies and the movement of construction vehicles should be limited to where possible to the existing roads and tracks.

CONSTRUCTION PHASE IMPACTS	
Impact	**Mitigation Measures**
	• Ensure that oil/ fuel spillages from construction vehicles and machinery are minimized and that where these occur, that they are immediately treated and contaminated soil removed. • Drip trays must be placed underneath construction vehicles when not in use to contain all oil that might be leaking from these vehicles. • Contaminated runoff from the construction sites should be prevented from entering surface water bodies. • All materials on the construction site should be properly stored. • Construction workers should be given ablution facilities at the construction sites that are located at least **30 m** away from any surface water and regularly serviced. • Washing of personnel or any equipment should not be allowed on site. Should it be necessary to wash construction equipment this should be done at an area properly suited and prepared to receive and contain polluted waters.
Soil Erosion	• It is recommended that construction takes place outside of the rainy season in order to limit potential flooding and the runoff of loose soil causing elevated suspended solids in the dam. • Appropriate erosion control structures must be put in place where soil may be prone to erosion. • Checks must be carried out at regular intervals to identify areas where erosion is occurring. • Appropriate remedial actions are to be undertaken wherever erosion is evident.
Heritage	• Project management is to be aware of the provisions of the National Heritage Act regarding the prompt reporting of archaeological finds. • A chance-find procedure must be put in place that includes the immediate cessation of construction around archaeological/ heritage resources found, the site marked off with hazard tape, and the immediate notification of the National Heritage Council of Namibia.
Health, Safety and Security	• Restrict unauthorized access to the site and implement access control measures.

CONSTRUCTION PHASE IMPACTS	
Impact	**Mitigation Measures**
	• Clearly demarcate the construction site boundaries along with signage of “no unauthorized access”. • Only security personnel should be present on site after-hours. • Ensure that all construction personnel are properly trained depending on the nature of their work. • Provide for a first aid kit and a properly trained person to apply first aid when necessary. • Clearly demarcate dangerous areas and no-go areas on site. • Staff and visitors to the site must be fully aware of all health and safety measures and emergency procedures. • The contractor must comply with all applicable occupational health and safety requirements. • The workforce should be provided with all necessary Personal Protective Equipment where appropriate.
Traffic	• Limit and control the number of access points to the site. • Ensure that road junctions have good sightlines. • Construction vehicles need to be in a roadworthy condition and maintained throughout the construction phase. • Transport materials to site in the smallest number of trips as possible. • Adhere to speed limist. • Implement traffic calming measures where necessary.
Noise	• No amplified music should be allowed on site. • Inform immediate neighbours of construction activities prior to commencing and provide for continuous communication between neighbours and contractor. • Limit construction times to acceptable daylight hours. • Do not allow the use of horns as a general communication tool but use it only where necessary as a safety measure.

CONSTRUCTION PHASE IMPACTS	
Impact	**Mitigation Measures**
Dust and Gaseous Emissions	• It is recommended that dust suppressants such as Dustex be applied to all construction clearing activities where required to ensure at least 50% control efficiency on all the unpaved roads and to reduce water usage. • Construction vehicles are to use only use designated roads. • It is recommended that, during high wind conditions, the contractor ceases works until the wind has dropped. • Cover any soil stockpiles with plastic to minimize windblown dust. • Provide workers with dust masks where necessary.
Waste	• It is recommended that waste from the temporary toilets be disposed of at an approved sewage treatment plant • Waste bins should be placed around the site for general refuse. • Skip containers for heavy waste and rubble should be provided and serviced before they overflow. . • Solid waste will be collected and disposed of at an appropriate local landfill or an alternative approved site, in consultation with the local authority.
Hazardous Substances	• Storage of hazardous substances in a covered, bunded area, with a volume of 120 % of the largest single storage container or 25 % of the total storage volume, whichever is greater. • Refuel vehicles in designated areas that have a protective surface covering and utilize drip trays for oil changes, repairs to and maintenance of vehicles and plant.

Table 11: Proposed mitigation measures for the operational phase

OPERATIONAL PHASE IMPACTS	
Impact	**Mitigation Measures**
Noise	• Do not allow commercial activities that generate excessive noise levels. • Continuous monitoring of noise levels should be conducted to make sure the noise levels do not exceed acceptable limits. • .
Emissions	• Consider tarring the internal road network. • Manage activities that generate emissions.
Social Impacts	• No specific mitigation measures are required, only that the Rundu community be informed of job creation opportunities and given first priority if unskilled and semi-skilled job vacancies become available.

8 CONCLUSION

The purpose of this Chapter is to briefly summarise and conclude the DESR and describe the way forward.

8.1 PLANNING AND DESIGN PHASE IMPACTS

With the implementation of the recommended mitigation measures in Chapter 7 as well as in the EMP**,** the significance of the planning and design phase impacts is likely to be reduced to a ***Low (negative)***.

8.2 CONSTRUCTION PHASE IMPACTS

With reference to **Table 11**, none of the negative construction phase impacts were deemed to have a highly significant impact on the environment. The construction impacts were assessed to a ***Medium to Low (negative)*** significance, without mitigation measures. With the implementation of the recommended mitigation measures in Chapter 7 as well as in the EMP**,** the significance of the construction phase impacts is likely to be reduced to a ***Low (negative)***.

8.3 OPERATIONAL PHASE

With reference to **Table 11**, none of the negative operational phase impacts were deemed to have a highly significant impact on the environment. The operational impacts were assessed to a ***Medium to Low (negative)*** significance without mitigation measures. With the implementation of the recommended mitigation measures in Chapter 7 as well as in the EMP**,** the significance of the operational phase impacts is likely to be reduced to a ***Low (negative)***.

8.4 LEVEL OF CONFIDENCE IN ASSESSMENT

With reference to the information available at the project planning cycle, the confidence in the environmental assessment undertaken is regarded as being acceptable for the decision-making, specifically in terms of the environmental impacts and risks. The Environmental Assessment Practitioner believes that the information contained within this DESR is adequate to allow MEFT: DEAF to be able to determine the environmental acceptability of the proposed project.

It is acknowledged that the project details will evolve during the detailed design and construction phases. However, these are unlikely to change the overall environmental acceptability of the proposed project and any significant deviation from what was assessed in this DESR should be subject to further assessment. If this was to occur, an amendment to the Environmental Authorisation may be required in which case the prescribed process would be followed.

8.5 MITIGATION MEASURES

With the implementation of the recommended mitigation measures in Chapter 7 as well as in the EMP, the significance of the construction and operational phase impacts is likely to be reduced to a ***Low (negative)***. **It is important that an Environmental Control Officer (ECO) be present on site during the construction phase of the proposed project to ensure that all the mitigation measures discussed in this report and the EMP are enforced.**

It is noted that where appropriate, these mitigation measures and any others identified by MEFT: DEAF could be enforced as Conditions of Approval in the Environmental Authorisation, should MEFT: DEAF issue a positive Environmental Authorisation.

8.6 OPINION WITH RESPECT TO THE ENVIRONMENTAL AUTHORISATION

Regulation 15(j) of the EMA requires *that the EAP include an opinion as to whether the listed activity must be authorised and if the opinion is that it must be authorised, any condition that must be made in respect of that authorisation*.

It is recommended that this project be authorised because should the development not proceed the land would remain underutilised. None of the positive or negative impacts from the proposed development would be realized.

The "no go" alternative was thus deemed to have a ***High (negative)*** impact, as all the benefits resulting from the development would not be realised. The significance of negative impacts can be reduced with effective and appropriate mitigation provided in this report and the EMP. If authorised, the implementation of the EMP should be included as a condition of approval.

8.7 WAY FORWARD

The FESR is herewith submitted to MEFT: DEAF for consideration and decision making. If MEFT: DEAF approves, or requests additional information / studies all registered I&APs and stakeholders will be kept informed of progress throughout the assessment process.

9 REFERENCES

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