Environmental Assessment Scoping Report for:

January 2026

Subdivision, Consolidation and Street creation on the Remainder of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37

APP-006767

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PROJECT DETAILS

Title	Environmental Scoping Report for the: Subdivision, Consolidation and Street creation on the Remainder of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37		
Report Status	Final		
SPC Reference	W/22024		
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Report date	January 2026		
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LEGAL NOTICE

EXECUTIVE SUMMARY

Introduction

Twinhead CC, hereinafter referred to as the Proponent, intends to undertake the following activities:

- **Subdivision of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 into 3 (A,B & C) portions and the Remainder;**
- **Consolidation of Portion C/163 (a portion of Portion 14) of the Farm Nubuamis No. 37 with Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37, into Consolidated Portion "X"; and**
- **Registration of a 20m Right of Way Servitude over the Remainder of Portion 163 (A Portion of Portion 14) of the Farm Nubuamis No. 37 in favor of Portions A, B and C of the Farm Nubuamis No. 37.**

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 proposed project involves the subdivision of Portion 163 (a portion of Portion 14) of Farm Nubuamis No. 37 in Brakwater, Windhoek, into smaller industrial erven to enable current tenants to purchase and formalize ownership of the land they occupy. This initiative aligns with the growing demand for industrial land on the outskirts of Windhoek, as the city's existing industrial zones—such as Prosperita, Southern Industrial, Lafrenz, and Northern Industrial—have limited remaining space.

Brakwater has become an attractive location for industrial operations that require larger areas for activities like construction, assembly, and vehicle repair, while maintaining a safe distance from residential areas. The proposed subdivision will allow existing occupants to secure permanent tenure, continue their operations without disruption, and invest in long-term development.

Additionally, the application seeks to rectify a boundary encroachment onto Portion 158 (a portion of Portion 14) of Farm Nubuamis No. 37 by creating and rezoning Portion C/163 to "Industrial" before consolidating it with Portion 158. A 20m Right of Way Servitude will also be registered to formalize access via an existing informal road.

Overall, the proposal supports orderly land use, tenure security, and sustainable industrial development in Brakwater while resolving existing land encroachment issues and improving access infrastructure.

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 **18 September 2025**;
- Notices were placed in The New Era and The Namibian newspapers dated **18 September and 25 September 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 **17 October 2025**). See (**Appendix C**) for public comments received.

The Draft Scoping Report was circulated from **07 November 2025 until 28 November 2025** so that the public can review and comment on it. The overall commentary received from the public on the draft report was documented in the comments-and-responses report document appended to the Scoping Report. The comment period remained open until the final scoping report is submitted to MEFT.

Conclusions and Recommendations

With reference to **Table 10**, 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.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ANNEXURES

Annexure A: Proof of Site Notices/ Posters
Annexure B: Proof of Advertisements
Annexure C: Public Participation process
- I&AP Database & Registered List
- Emails and Letter sent of BID
- Emails and Letter sent of DESR
- Comments received

Annexure D: Curriculum Vitae and ID of Environmental Assessment Practitioner
Annexure E: Environmental Management Plan

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

Twinhead CC hereinafter referred to as the proponent intends to undertake the following activities:

- **Subdivision of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 into 3 (A,B & C) portions and the Remainder;**
- **Consolidation of Portion C/163 (a portion of Portion 14) of the Farm Nubuamis No. 37 with Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37, into Consolidated Portion "X"; and**
- **Registration of a 20m Right of Way Servitude over the Remainder of Portion 163 (A Portion of Portion 14) of the Farm Nubuamis No. 37 in favor of Portions A, B and C of the Farm Nubuamis No. 37.**

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**
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.

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 gazette 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

Portion 163 (a portion of Portion 14) of the Farm Nubuamis No.37 and Portion 158 (a portion of Portion 14) No. 37, which are found in the "Industrial" area of Brakwater are located adjacent to one another along the B1 road towards Okahandja, just outside of the Windhoek town, depicted in **Figure 1** below.

1.3 ZONING AND OWNERSHIP

The ownership and zoning of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 and Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37 are outlined in Table 1 below.

The ownership and zoning of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 and Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37 are outlined in **Table 2** below.

Table 2: Ownership and zoning of Portions 158 and 163 (portions of Portion 14) of Farm Nubuamis No. 63

Portion Number	**Ownership**	**Title Deed Number**	**Zoning**
Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37	Twinhead CC	T6108/2013	Industrial with a bulk of 0.4
Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37	Twinhead CC	T6107/2013	Industrial with a bulk of 0.4

1.4 STATUS QUO

Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 and Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37 accommodates industrial warehouses as well as business buildings. The activities that take place in these warehouses range from construction, reconstruction, assembling, the repairing and the scraping of vehicles.

A building located on Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 encroaches onto Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37. As such, the proposed Portion C/163 (a portion of Portion 14) of the Farm Nubuamis No. 37 is to be created from the subdivision of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 in order to rectify this encroachment. This encroachment will be rectified by consolidating proposed Portion C/163 (a portion of Portion 14) of the Farm Nubuamis No. 37 with Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37.

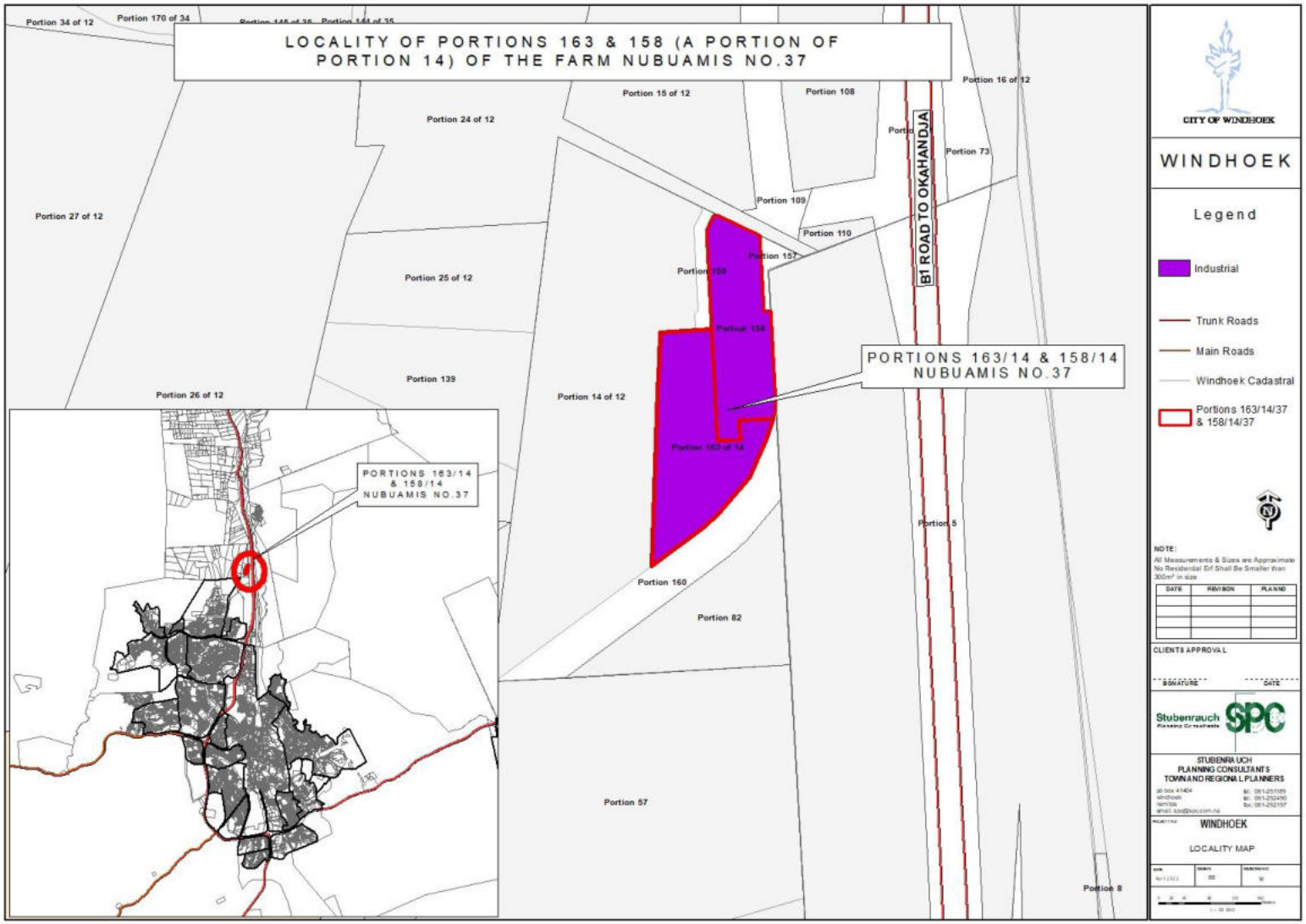

Figure 1: Locality of Portion 163 and 158 (a Portion of Portion 14) of the Farm Nubuamis No.37

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 Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 into 3 (A, B & C) portions and the Remainder;**
- **Consolidation of Portion C/163 (a portion of Portion 14) of the Farm Nubuamis No. 37 with Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37, into Consolidated Portion "X"; and**
- **Registration of a 20m Right of Way Servitude over the Remainder of Portion 163 (A Portion of Portion 14) of the Farm Nubuamis No. 37 in favor of Portions A, B and C of the Farm Nubuamis No. 37.**

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 Windhoek 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 3** 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 3: Contents of the Scoping / Environmental Assessment Report

Section	Description	Section of FESR/ 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
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

Section	Description	Section of FESR/ Annexure
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 that the proposed activity or alternatives have on the environment and on the	Refer to Chapter 4.3

Section	Description	Section of FESR/ Annexure
	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 4** below provides a summary of the legal instruments considered to be relevant to this development and the environmental assessment process.

Table 4: 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 10.1 (b) Infrastructure** **Activity 10.2(a) Infrastructure**
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.
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	The EA process should incorporate the aspects outlined in the guidelines.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	should be considered by the proponent in the scoping process.	
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 provide for the establishment of townships; to provide for the alteration of boundaries of	The proposed development must adhere to the provisions regarding the subdivision and rezoning of land.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	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, subways or culverts across or under proclaimed roads	Adhere to all applicable provisions of the Roads Ordinance.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	• 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, social, economic, cultural,	This EIA considers this term of Environment.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	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.

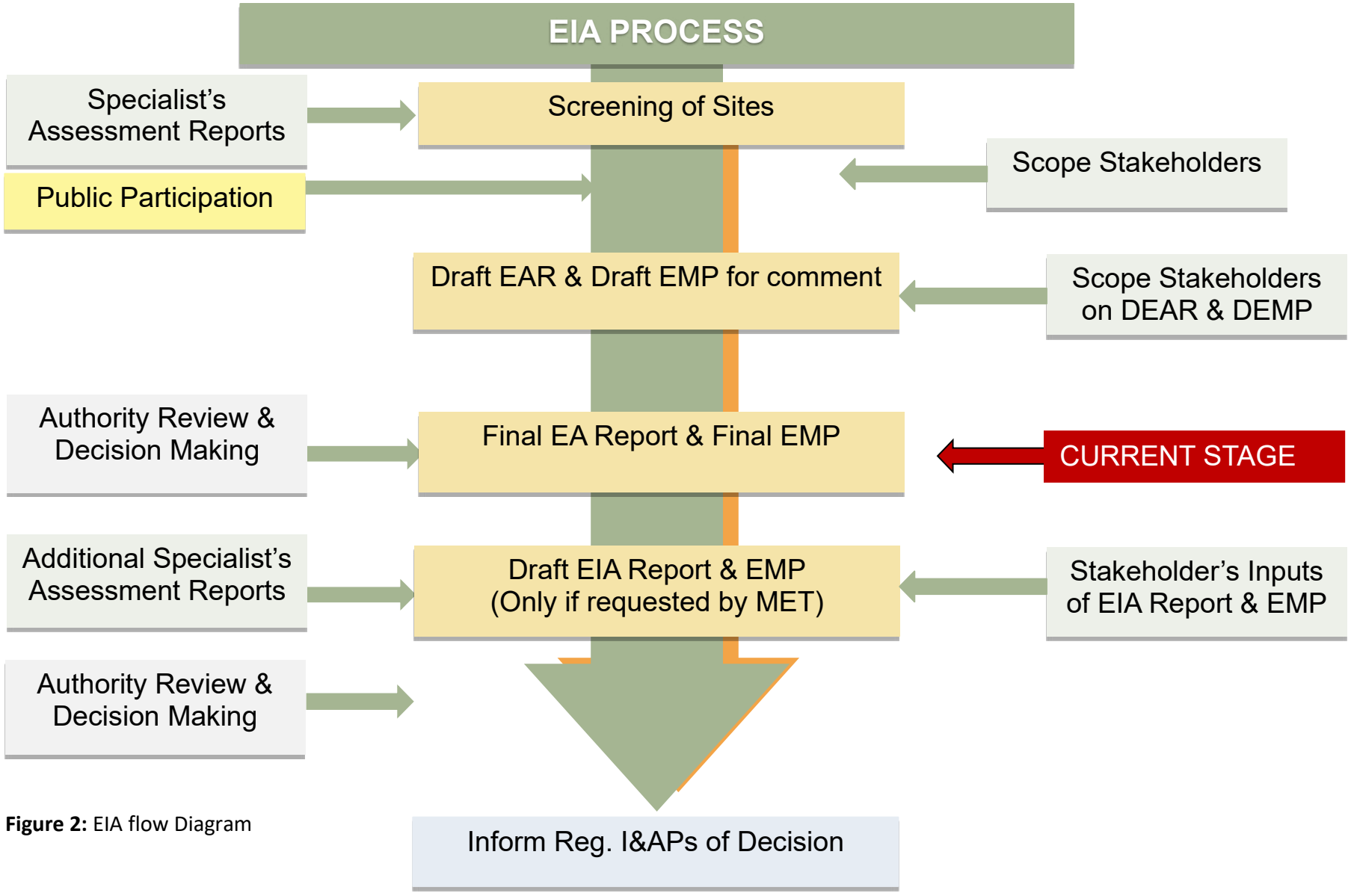

Figure 2: EIA flow Diagram

3 ENVIRONMENTAL BASELINE DESCRIPTION

3.1 SOCIAL ENVIRONMENT

3.1.1 Socio-Economic Context

The statistics shown in **Table 5** below are derived from the 2023 Namibia Population and Housing Census (Namibia Statistics Agency, 2023), and presented from a local and regional perspective.

Table 5: Statistics of the Windhoek Constituency and Khomas Region (Namibia Statistics Agency, 2023)

WINDHOEK EAST CONSTITUENCY	
ATTRIBUTE	**INDICATOR**
Population	30 054
Females	15 814
Males	14 213
Population under 5 years	8%
Population aged 5 to 14 years	15%
Population aged 15 to 59 years	72%
Population aged 60 years and above	5%
Female: male ratio	100:92
Literacy rate of 15 years old and above	99%
People above 15 years who have never attended school	2%
People above 15 years who are currently attending school	30%
People above 15 years who have left school	66%
People aged 15 years and above who belong to the labour force	61%
Population employed	53%
Homemakers	2%
Students	23%
Retired or old age income recipients	6%
Income from pension	4%
Income from business and non-farming activities	10%
Income from farming	1%
Income from cash remittance	8%
Wages and salaries	74%
Main Language	Oshiwambo languages (40.7%) Afrikaans-18.5%
KHOMAS REGION	
ATTRIBUTE	**INDICATOR**
Population	494 605
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

Windhoek and surroundings in general are characterized with a semi-arid highland savannah climate typified as very hot in summer and moderate dry in winter. The highest temperatures are measured in December with an average daily temperature of maximum 31ºC and a minimum of 18ºC. The coldest temperatures, conversely, are measured in July with an average daily maximum of 20ºC and minimum 3ºC as depicted in **Figure 3** below. The area therefore has low frost potential. The predominant wind in the region is easterly, with westerly winds from September to December. Extreme winds are experienced in the months of August and September when significant wind erosion in disturbed areas is visible (Robertson, Jarvis, Mendelsohn, & Swart, 2012).

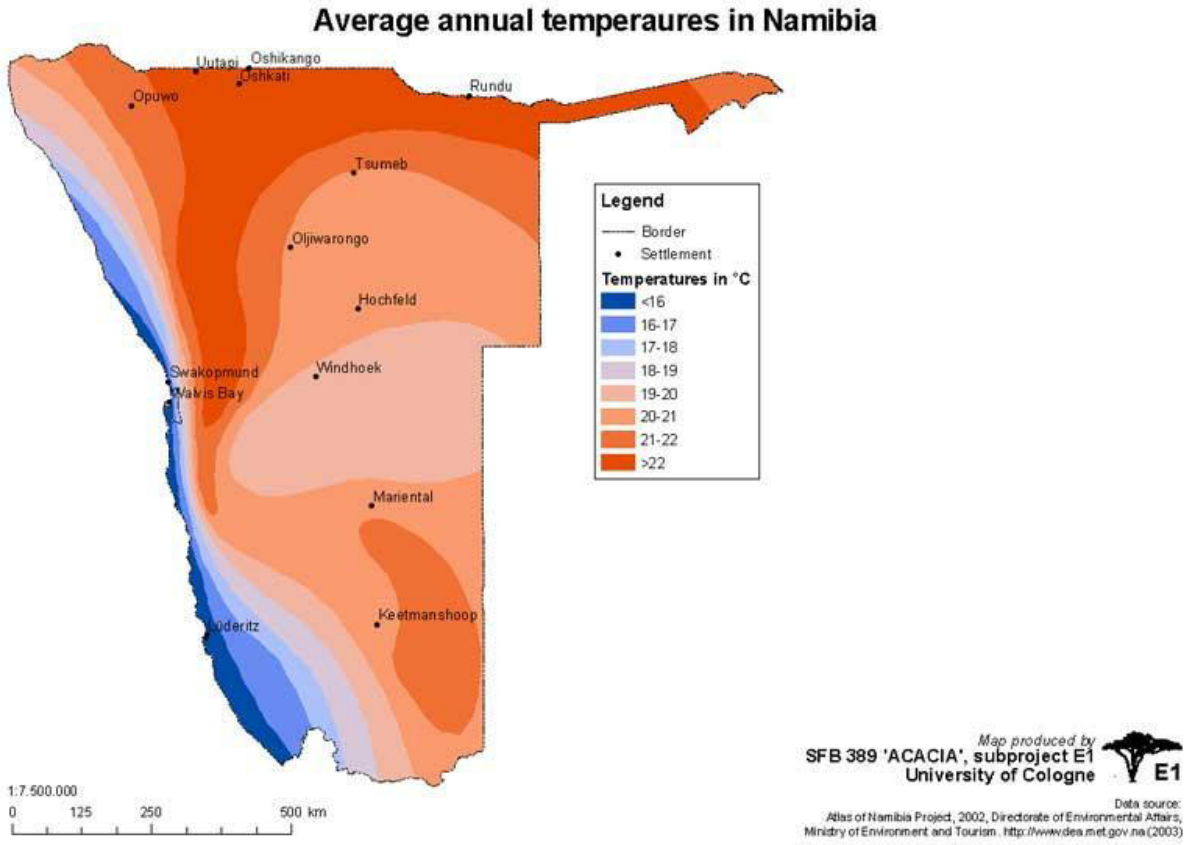

Figure 3: Annual average temperature (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/e1_download_climate_e.htm#temperature_annual)

Rainfall in the form of thunderstorms is experienced in the area during the summer months between October and April. The annual average rainfall for the area is 350 mm to 40 0mm. Over 70% of the

rainfall occurs in the summer months' period between November and March. Rainfall in the area is typically sporadic and unpredictable however the average highest rainfall months are January to March. However, the average evaporation rate is 3 400 mm a year, as indicated on **Figure 4** below, which means that this is a water deficit area, that is, evaporation exceeds rainfall (in this case, by orders of magnitude).

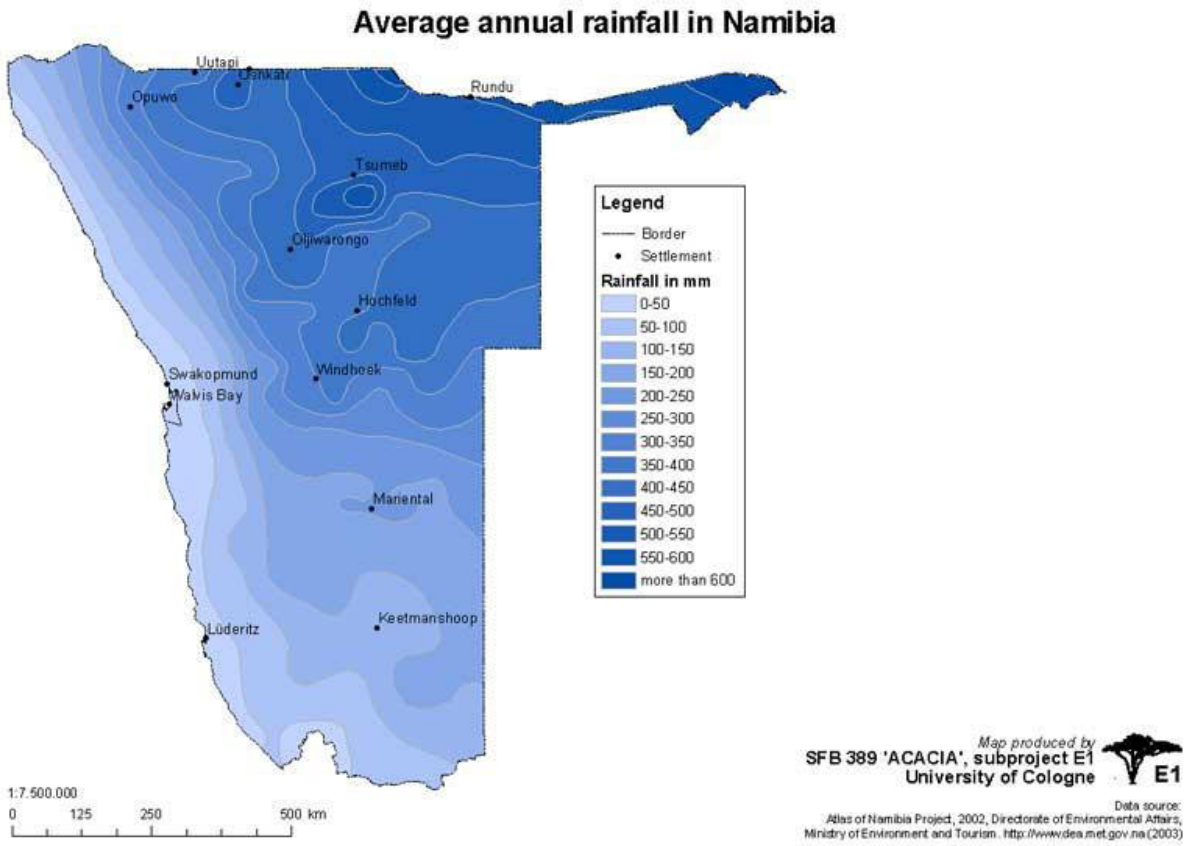

Figure 4: Average annual Rainfall (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/climate/rainfall-annual.jpg)

3.2.2 Topography, Geology and Soils

The region is in the central highlands of the country and is bordered by the Erongo region to the west and the northwest and by the Otjozondjupa region to the north and Omaheke region to the east and Hardap region to the south. The landscape in the Khomas Region is classified as being in the Khomas Hochland, high Plateau, which is characterized by rolling hills and many valleys. The Khomas Hochland is a deeply dissected mountain land of intermediate elevation, where the geomorphology is closely related to the underlying geology (Christelis and Struckmeier, 2001).

The soil cover in the study area is the lithic leptosols referring to shallow soil cover over hard rocks. The main rock type is identified as biotite schist, but with minor strata of micaceous quartzite, feldspathic schist and amphibole schist (Labuschagne, 2004; Mendelsohn *et al*, 2002).

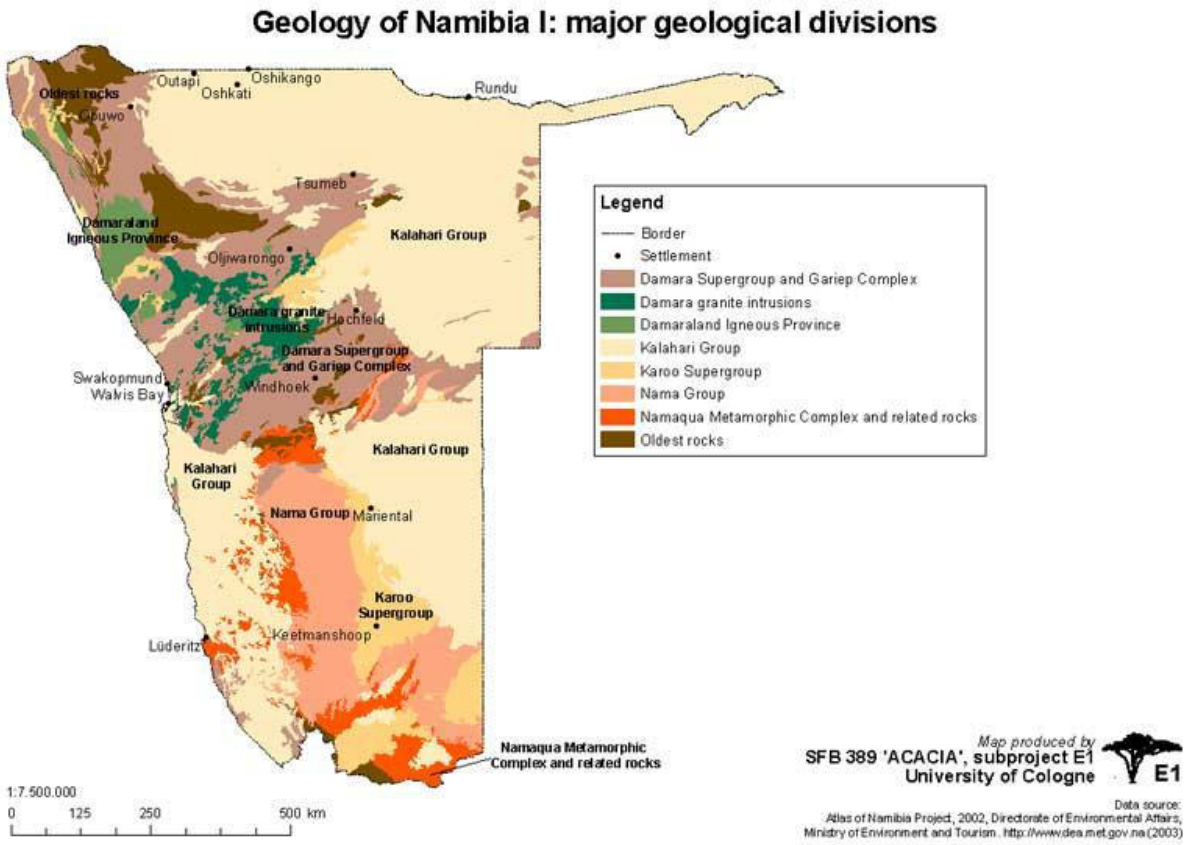

Figure 5: Geology of Namibia (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/physical/geology.jpg)

3.2.3 Hydrology and Hydrogeology

Water is a scarce and valuable resource in Namibia, and the extreme variability in seasonal rainfall makes water an extremely vulnerable resource (Mendelsohn *et al*, 2002; Christelis & Struckmeier, 2011). A number of north-southerly striking faults and joints found in Windhoek form the major underground water conduits of the Windhoek Aquifer and hence determine the conditions of the aquifer (City of Windhoek, 2006; Christelis & Struckmeier, 2011). Groundwater flow is northwards towards the Swakop River, in a similar direction to the surface water flow (Christelis & Struckmeier, 2011). Taking a range of hydraulic conductivity values for igneous and metamorphic rocks from literature and groundwater levels from the DWA database, approximate ranges of groundwater flow rates have been calculated from the project area to the Swakop River. The groundwater flow time for this distance (approximately 40 km) through the Kuiseb schist is large—in the order of several hundred years to a thousand years (DWA, 2000; City of Windhoek, 2006). Flow through fractured schist and in the alluvial sediments is likely to be more rapid.

In terms of groundwater, the area falls within the Central Namib-Windhoek area as depicted in **Figure 6** below.

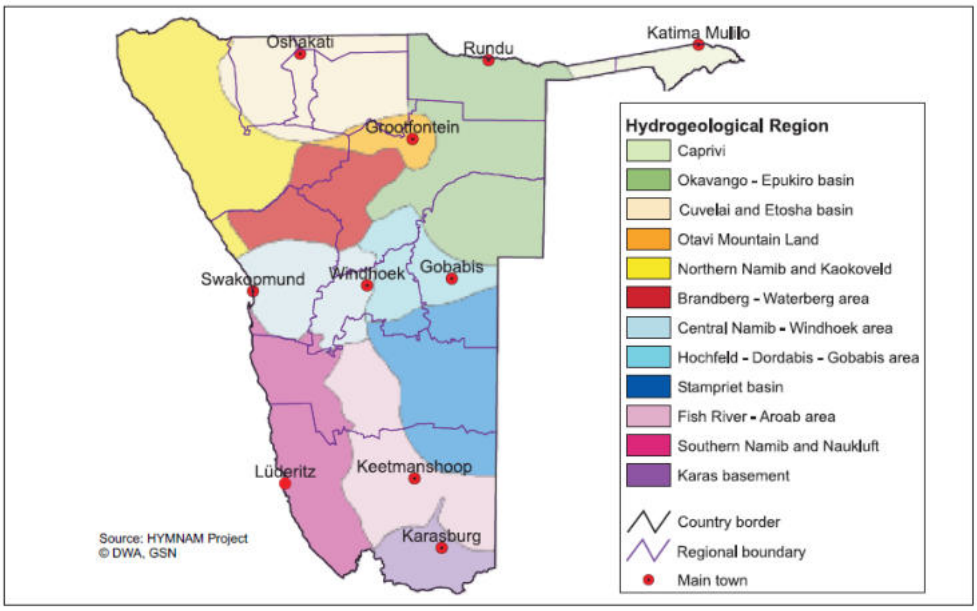

Figure 6: Groundwater basins and hydrogeological regions in Namibia

The general topography of the land, with the City of Windhoek falling within a valley, forms a natural catchment basin where all the water is collected and from which it is transported to the north (City of Windhoek, 2006).

According to the Brakwater Bulk Services Master Plan (2010), the Klein Windhoek River alluvium was found to contain saline groundwater in past studies by the City of Windhoek; and this is confirmed by water quality information in the DWAF borehole records. There are few drilling records or water chemistry data of the alluvial deposits to assess the distribution or origin of the saline water Department of Water Affairs and Forestry (DWAF), 2010.

3.3 TERRESTRIAL ECOLOGY

3.3.1 Flora and Fauna

Flora associated with the general area is commonly referred to as the Thornbush Savanna – Tree and Shrub Savanna – (Giess 1971) or Thornbush Shrubland (Mendelsohn et al. 2002). This is the dominant vegetation type in Namibia and, although it varies, the typical form is grassveld interspersed with trees and large shrubs (Giess 1971). The savanna is characterized by scattered trees, shrubs, and grasses, while the thornbush is dominated by woody shrubs with thorns. Scattered short grass and shrubs are also present in the area. According to Lawrence (1971), the vegetation of the region is

classified as highland savanna and comprises several Vachellia species and numerous species of perennial thorn trees in the valleys, with shrubs and grass on the steep slopes.

The subject area falls within the Tree and Shrub Savanna biome. It is characterised by Highland Shrubland where the vegetation structure is dense shrubland. The area has medium terrestrial diversity in terms of animal and plant life. Plant diversity is recorded to be between 300-399 species. The area has high plant endemism with between 26-35 endemic species believed to be found within the area. In terms of animals, the bird diversity of the region is recorded to be between 171-200 species, mammal diversity between 61 -75 species and reptile diversity between 61- 70 species. However, there is limited wildlife in the Windhoek area due to urbanization. Common bird species that can be spotted include the Namibian Crow (*Corvus edithae*), the Crimson-breasted Shrike (*Laniarius atrococcineus*), and the Black-chested Prinia (*Prinia flavicans*). Reptiles that can be found in the area include the Black-headed Python (*Aspidites melanocephalus*) and the Spotted Skaapsteker (*Psammophylax rhombeatus*). Small mammals that can be found in the area include the Rock Dassie (*Procavia capensis*) and the Striped Mouse (*Rhabdomys pumilio*).

The subject site is currently developed and extensively disturbed.

4 PROJECT DESCRIPTION

4.1 PROJECT COMPONENTS

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

- **Subdivision of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 into 3 (A, B & C) portions and the Remainder;**
- **Consolidation of Portion C/163 (a portion of Portion 14) of the Farm Nubuamis No. 37 with Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37, into Consolidated Portion "X"; and**
- **Registration of a 20m Right of Way Servitude over the Remainder of Portion 163 (A Portion of Portion 14) of the Farm Nubuamis No. 37 in favor of Portions A, B and C of the Farm Nubuamis No. 37.**

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 is the baseline against which all alternatives are assessed. The No-Go Alternative means the development will not proceed, none of the proposed benefits such as improved land use management, tenure security for occupants, or enhanced accessibility will be realized. However, this option would also avoid potential environmental impacts associated with subdivision or minor construction activities, preserving the current physical environment and natural vegetation within the area.

4.3 THE PROPOSED DEVELOPMENT

Industrial land uses are typically located on the outskirts of urban areas to provide sufficient space for operations while minimizing disturbances to residents. With limited industrial land remaining in Windhoek's built-up areas—such as Prosperita, Southern Industrial, Lafrenz, and Northern Industrial—investors are increasingly turning to Brakwater, which offers ample space for activities like construction, assembly, and vehicle repair.

Portion 163 (a portion of Portion 14) of Farm Nubuamis No. 37 in Brakwater, zoned for industrial use, is currently leased by several occupants who wish to purchase the areas they occupy. To accommodate this, the property owner proposes subdividing the land into smaller industrial portions, allowing tenants to secure ownership, continue their operations, and invest in site improvements.

The application also seeks to rectify an existing encroachment onto Portion 158 by creating and rezoning Portion C/163 to "Industrial," which will then be consolidated with Portion 158. Additionally, a 20m Right of Way Servitude will be registered to formalize the existing access road used by occupants.

This proposal promotes orderly land use, tenure security, and sustainable industrial development in Brakwater while resolving boundary issues and improving site accessibility. Therefore, it is the proponent's intention to undertake the following activities:

- **Subdivision of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 into 3 (A,B & C) portions and the Remainder;**
- **Consolidation of Portion C/163 (a portion of Portion 14) of the Farm Nubuamis No. 37 with Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37, into Consolidated Portion "X"; and**
- **Registration of a 20m Right of Way Servitude over the Remainder of Portion 163 (A Portion of Portion 14) of the Farm Nubuamis No. 37 in favor of Portions A, B and C of the Farm Nubuamis No. 37.**

4.3.1 Subdivision of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 into 3 (A,B & C) portions and the Remainder;

Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 is to be subdivided into 4 Portions and the Remainder as depicted in **Table 6** below.

Proposed Portion C/163 (a portion of Portion 14) of the Farm Nubuamis has been created for consolidation with Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37 in order to rectify the encroachment as seen in **Figure 7.**

Table 6: Subdivision of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37

Portion No.	Current Zoning	Proposed Zoning	Size (±ha)
A/163	Industrial with a bulk of 0.4	Industrial with a bulk of 0.4	0.3044

B/163	Industrial with a bulk of 0.4	Industrial with a bulk of 0.4	0.3036
C/163	Industrial with a bulk of 0.4	Industrial with a bulk of 0.4	0.1814
RE/163	Industrial with a bulk of 0.4	Industrial with a bulk of 0.4	2.9639

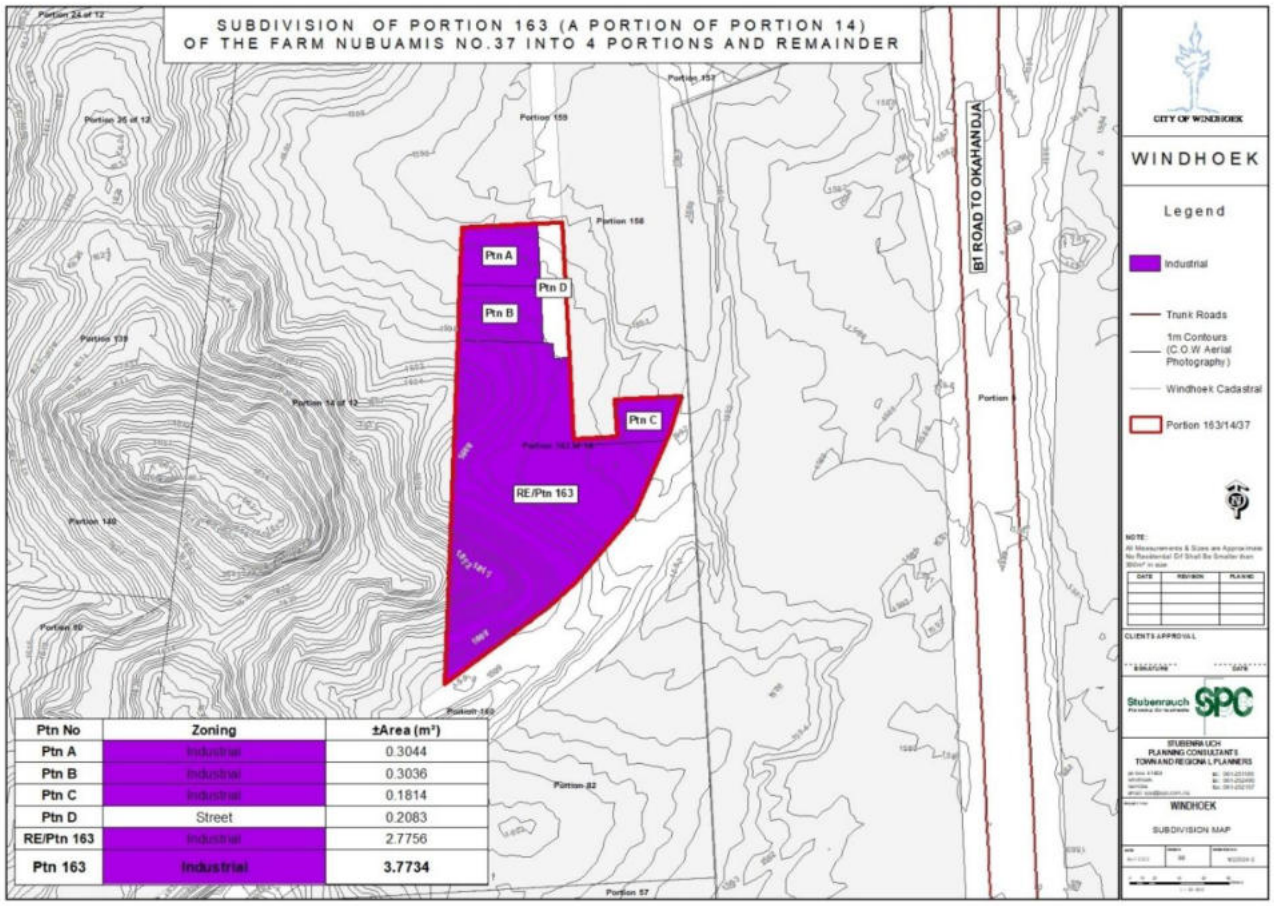

Figure 7: Subdivision of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 into 3 (A, B & C) portions and the Remainder

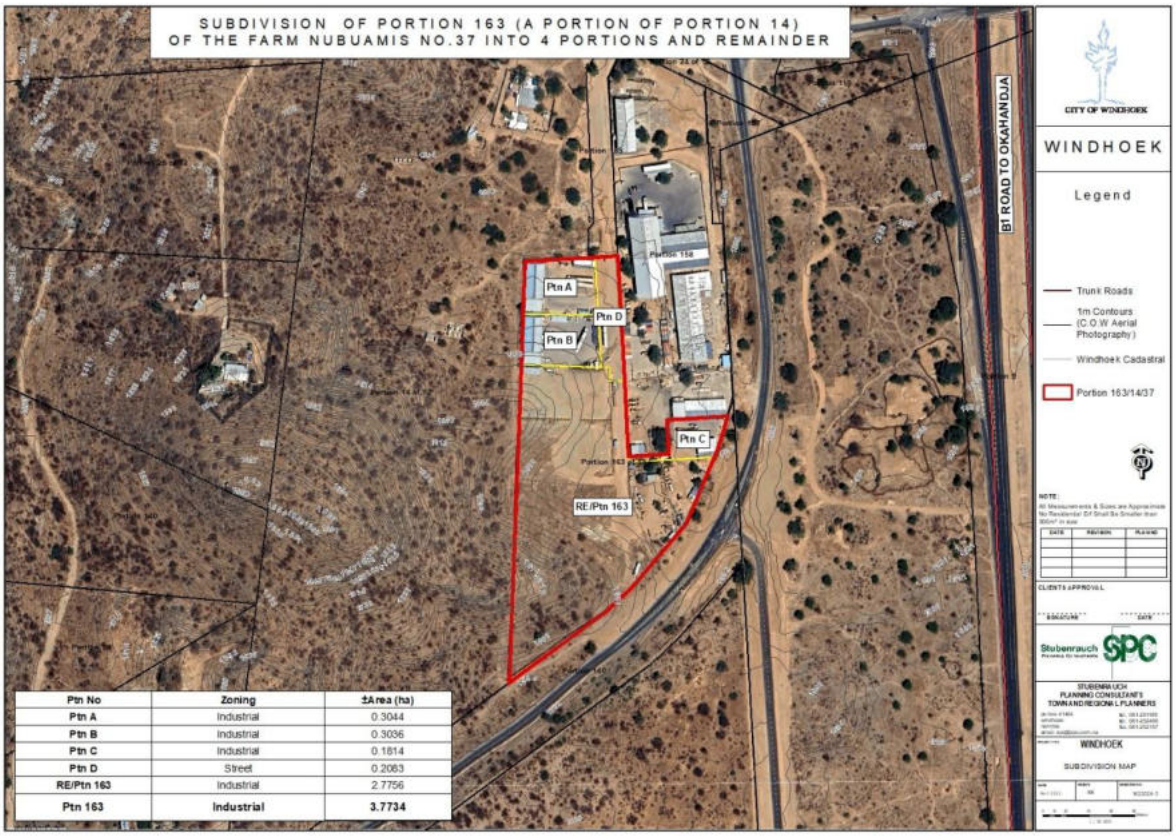

Figure 8: Aerial photo of the Subdivision of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 into 3 (A, B & C) portions and the Remainder

4.3.2 Consolidation of Portion C/163 (a portion of Portion 14) of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 with Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37 into "Consolidated Portion X

In order to rectify the above-mentioned encroachment, proposed Portion C/163 (a portion of Portion 14) of Portion 163 (a portion of portion 14) of the Farm Nubuamis No. 37 must be consolidated on with Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37 as seen on **Figure 9** and **Table 7** below.

Table 7: Consolidation Table

Erf No.	Current Zoning	Proposed Zoning	Size (±ha)
C/163	Industrial with a bulk of 0.4	Industrial with a bulk of 0.4	0.1814
Portion 158	Industrial with a bulk of 0.4	Industrial with a bulk of 0.4	2. 832

Consolidated Portion "X"		**Industrial with a bulk of 0.4**	**3.0134**

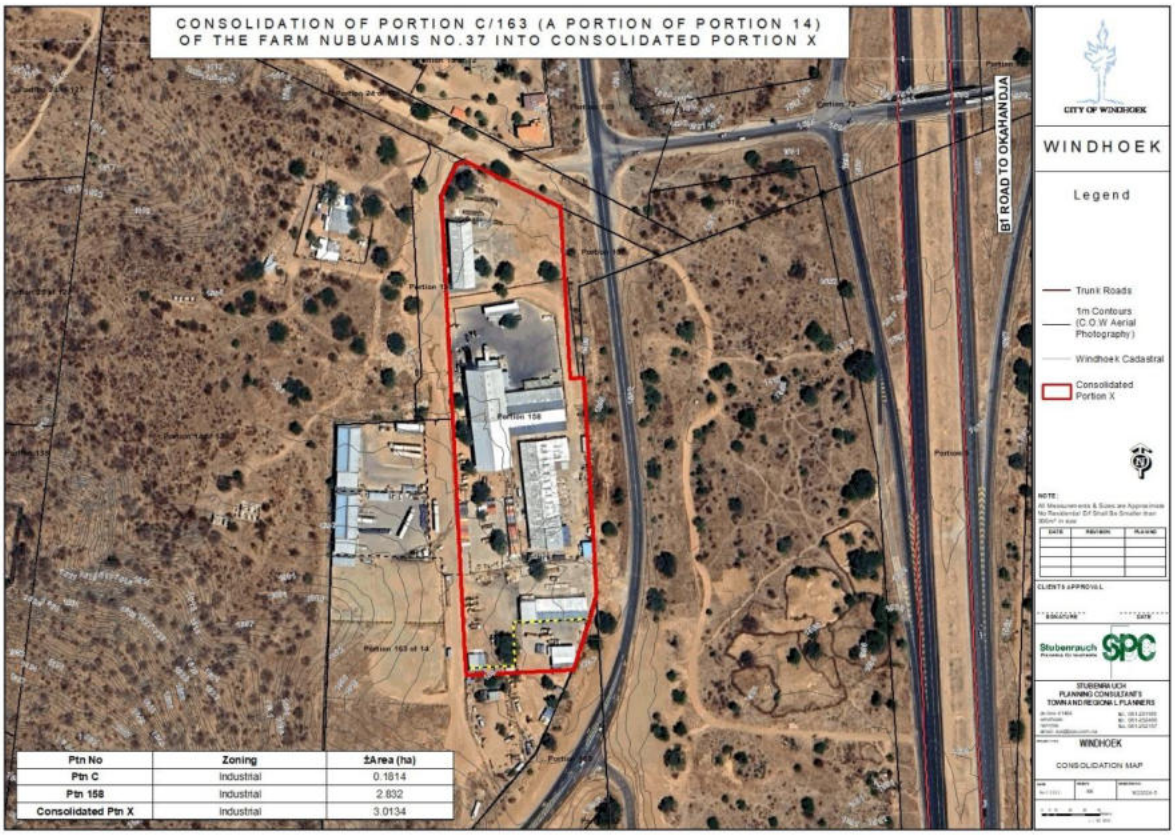

Figure 9: Consolidation Map

4.3.3 **Registration of a 20m Right of Way Servitude over the Remainder of Portion 163 (A Portion of Portion 14) of the Farm Nubuamis No. 37 in favor of Portions A, B and C of the Farm Nubuamis No. 37**

The proposed 20m Right of Way servitude will formalize the existing informal road, providing access to the newly created portions resulting from the subdivision of Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37.

4.3.4 Engineering Services and Access provision

4.3.4.1 Water, Electricity, stormwater and Sewer

Portion 163 (a portion of Portion 14) of the Farm Nubuamis No. 37 and Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37 are fully connected to the municipal service network of the Municipal Council of Windhoek.

The newly created erven will retain these connections, and any additional connection are to be done in accordance with the engineering standards and requirements of Municipal Council of Windhoek.

4.3.4.2 Access Provision

Access to Portion 163 (a portion of Portion 14) of Farm Nubuamis No. 37 and Portion 158 (a portion of Portion 14) of the Farm Nubuamis No. 37 is obtained from the internal road network of Windhoek.

Access to the newly created portions will be obtained from the proposed 20m Right of Way Servitude.

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 8** below for the activities undertaken as part of the public participation process. The I&APs were given time to comment from **18 September 2025 to 17 October 2025.**

Table 8: Table of Public Participation Activities

ACTIVITY	REMARKS
Placement of site notice/poster in Windhoek	See **Annexure A**
Placing advertisements in two newspapers namely the New Era and The Namibian Sun (**18 September 2025 and 25 September 2025**)	See **Annexure B**
Written notice to surrounding property owners and Interested and Affected Parties via Email (**18 September 2025**)	See **Annexure C**

5.1.1 Environmental Assessment Phase 2

The second phase of the PPP involved the lodging of the Draft Environmental Scoping Report (DESR) for comment by all registered I&APs. Registered and potential I&APs was informed of the availability of the DESR for public comment via a letter/email dated **07 November 2025**. An Executive Summary of the DESR was also included in the letters to the registered I&APs. I&APs had until **28 November 2025** to submit comments or raise any issues or concerns they may have regarding the proposed project.

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 9**.

Table 9: 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, theNATURE, 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

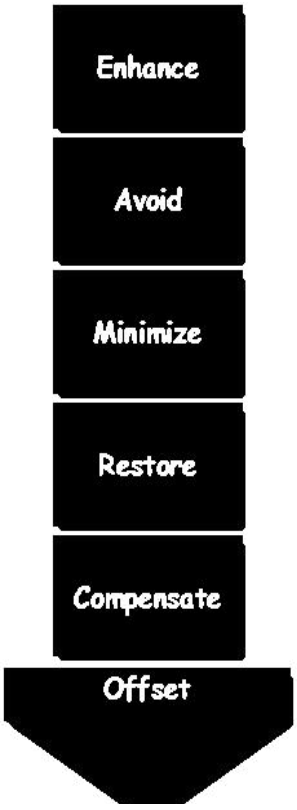

Figure 10: Mitigation Hierarchy

There is a mitigation hierarchy of actions which can be undertaken to respond to any proposed project or activity (See **Figure 13**). 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 3. 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

The subject erven are fully connected to the municipal reticulation system of the City of Windhoek, which consists of water, electricity and sewer connections. This connection will be maintained. Stormwater run-off will follow the natural drainage paths on site. Further measures necessary to manage stormwater within the area are to be employed in accordance with the City of Windhoek's stormwater drainage system.

7.2 CONSTRUCTION PHASE IMPACTS ON THE BIOPHYSICAL ENVIRONMENT

The activities generating the impacts are temporary in duration but may have long lasting effects/ impacts on the receiving environment.

7.2.1 Air quality: gaseous pollution and dust

During construction, air quality may be negatively affected by dust generation from excavation, vehicle movement, and material handling, especially in dry and windy conditions. Additionally, gaseous pollutants such as carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM) may be emitted from construction machinery and vehicles powered by diesel or petrol. These emissions can pose health risks to workers and nearby residents and contribute to short-term air pollution in the area. Proper dust suppression and equipment maintenance are essential to minimize these impacts.

7.2.2 Topography and Soil Erosion Impacts

Urban development inevitably involves levelling land, that is, altering its contours. This in turn may affect surface water drainage patterns. The 'sense of place' impacts linked to changing topography are in this case likely to be negligible, because this is a desirable development and the changes to topography will be minor ie no major alterations of landscape character. Surface water drainage will be accommodated in the design of the development, in accordance with the City of Windhoek's stormwater drainage guidelines/ specifications.

Given the characteristics of the proposed site, waterborne soil erosion is likely to be encountered if construction takes place during the rainy season, while wind erosion may occur during the intensely windy periods of the dry season. The clearing of vegetation for roads and building construction will render the exposed soils vulnerable to erosion. However, effective measures to mitigate this impact are well established.

Loss of topsoil is an important potential consequence of civil engineering and residential construction, 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 be encountered during the construction phase, especially if development takes place within the rainy season, particularly elevated particulate pollution (due to soil erosion) of surface water bodies, notably the Avis Dam. Accidental spillage of oils and fuels from vehicles and equipment used during construction may affect both surface water and groundwater. This risk is reduced by the fact that the construction phase will be a short-term activity, spillages are likely to be occasional and of low intensity/ magnitude.

7.2.4 Flora and Fauna Impacts (Biodiversity)

The site is already fairly intensively developed for housing and stabling, and vegetation occurs as patches isolated as gardens and grazing fields.. It is anticipated that the proposed development area and associated infrastructure (e.g. water, sewage, access route, etc.) would result in some losses of flora and fauna, thus have localized negative implications on the associated fauna and flora should the proposed mitigation measures as outlined in the EMP be enforced.

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

Traffic is expected to increase slightly during the construction phase of the project in areas where construction will take place. Several trucks and other heavy machinery will need to deliver, handle and position construction materials as well as to remove spoil material. Not only will the increase in traffic result in associated noise impacts, but it will also impact on the roads in the area.

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

The proposed development, may result in short-term dust and emission impacts primarily during the construction phase. Activities such as site clearing, demolition of existing structures, earthworks, and the movement of construction vehicles are expected to generate dust, which could reduce air quality and cause a nuisance to nearby residents, particularly given the site's proximity to the Avis Dam Nature Reserve. In addition, emissions from construction machinery and transport vehicles may contribute to localized air pollution, releasing pollutants such as nitrogen oxides, carbon monoxide, and particulate matter. Although these impacts are temporary, they could affect sensitive individuals and the surrounding environment. However, once operational, the estate is expected to produce minimal emissions due to its low-density, residential nature and limited traffic, with the inclusion of green spaces potentially helping to mitigate long-term air quality concerns.

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 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.

7.4.2 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, which is mostly Residential.

7.4.3 Social Impacts

The proposed subdivision enables the occupants of Portion 163 of the Farm Nubuamis No. 37 to separate the existing industrial activities from the different activities. The proposed subdivision will further enable the occupants to have separate ownership of the portions under individual title deeds once they purchase the subdivided portions.

These title deeds may be utilized by the occupants as collateral with financial institutions for other socio-economic investments within the town. Additionally, individual ownership to the portions also enables occupants to enhance the aesthetics of their buildings should they desire such in the future. This revamping process has the potential to create employment opportunities for the Windhoek residents and overall improve the socio-economic status of the community.

The development would generate additional revenue for the Municipal Council of Windhoek through rates and taxes on the property. These additional funds could be used for community development projects such as parks and public transit systems.

Thus, it is put forward that the intended development will not have any negative socio-economic impacts but rather positively contributes to the development of Windhoek.

7.5 CUMULATIVE IMPACTS

The cumulative impacts of the proposed development include increased pressure on local infrastructure such as roads, water, and waste systems, especially when combined with other ongoing and future developments in Klein Windhoek. Traffic congestion and road wear may intensify due to construction and long-term residential activity, while the area's natural character and biodiversity, particularly near the Avis Dam Nature Reserve, could be gradually degraded through habitat loss and urban expansion. 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)***.

7.6 ENVIRONMENTAL MANAGEMENT PLAN

An Environmental Management Plan (EMP) is contained in **Annexure E** 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.

7.7 SUMMARY OF POTENTIAL IMPACTS

A summary of all the potential impacts from the proposed project assessed above is included in **Table 10**. The **Tables 11 – 13** 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 10: 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**	Nubuamis	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)**	Nubuamis	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**	Nubuamis	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
4. **Soil erosion**	Nubuamis	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

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
5. **Heritage**	Nubuamis	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**	Nubuamis	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**	Nubuamis	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
	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**	Nubuamis	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

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
9. **Airborne emissions impacts**	Nubuamis	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**	Nubuamis	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
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
11. **Waste**	Nubuamis	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**	Nubuamis	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

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
OPERATIONAL PHASE										
1. **Noise**	Nubuamis	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
2. **Emissions**	Nubuamis	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**	Nubuamis	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 11: 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 12: 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 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 13: 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 local community specifically residents of townships within Windhoek 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 FESR 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 FESR 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 FESR 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 none of the proposed benefits such as improved land use management, tenure security for occupants, or enhanced accessibility will 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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