

Environmental Assessment Scoping Report for:

*Townships Establishment of
Uukwalumbe A Extension 1;
Uukwalumbe A Extension 2
and Uukwalumbe A Proper,
Okahao, Omusati Region*

APP- 002887

February 2024

Prepared for: Okahao Town Council
Po Box: PO Box 699, Okahao
Contact Number: +264 65 252 204
Contact Person: Simon Shinguto
Email: s.shinguto@okahaotc.com.na



Prepared by: Stubenrauch Planning Consultants
P.O. Box 41404, Windhoek
Contact Person: Bronwynn Basson
Contact Number: +264 (61) 25 11 89
Fax Number: +264 (61) 25 11 89
Email: bronwynn@spc.com.na



PROJECT DETAILS

Title	Environmental Scoping Report for the: <ul style="list-style-type: none"> Townships Establishment of Uukwalumbe A Extension 1, Uukwalumbe A Extension 2 and Uukwalumbe A Proper in Okahao, Omusati Region. 		
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Proponent	Prepared for: Okahao Town Council Po Box: PO Box 699, Okahao Contact Number: +264 65 252 204 Contact Person: Simon Shinguto Email: s.shinguto@okahaotc.com.na		
Environmental Assessment Practitioner	Stubenrauch Planning Consultants P.O. Box 41404, Windhoek Contact Person: Bronwynn Basson Contact Number: +264 (61) 25 11 89 Fax Number: +264 (61) 25 11 89 Email: bronwynn@spc.com.na		
Report date	February 2024		
	Name	Signature	Date
Authors	Elina SP Vakuwile		February 2024

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EXECUTIVE SUMMARY

Introduction

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

- **Subdivision of the Remainder of the Farm Okahao Townlands No. 989 into Portion A (now Portion 16) and Remainder;**
- **Subdivision of the Remainder of the Farm Okahao Townlands Extension No. 1213 into Portions B, C, D (now Portion 17, 18 and 19) and Remainder;**
- **Consolidation of Portion A (now Portion 16) of the Remainder of the Farm Okahao Townlands No. 989 and Portion B (now Portion 17) of Remainder of the Farm Okahao Townlands Extension No. 1213 into Consolidated Portion E (now Portion 20);**
- **Layout approval and township establishment on Portion C (now Portion 18) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Extension 1;**
- **Layout approval and township establishment on Portion D (now Portion 19) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Extension 2;**
- **Layout approval and township establishment on Portion E (now Portion 20) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Proper;**
- **Inclusion of Uukwalumbe A Extension 1, Uukwalumbe A Extension 2, and Uukwalumbe A Proper, in the next Zoning Scheme to be prepared for Okahao.**

During the initial Public Participation Process, the advert was written Layout approval and township establishment on Portion A and B of the Farm Okahao Townlands Extension No. 1213 to be known as Okahao Extension 15 and 16. During the public meeting held at Okahao Fire Brigade Hall on the **07 July 2023**, the Council resolved to change the layout of the initial proposed townships and split the proposed townships into three townships to be known as Uukwalumbe A Extension 1, Uukwalumbe A Extension 2 and Uukwalumbe A Proper.

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).

As such 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 Okahao Town Council intends to establish three (3) townships in Okahao to be known as Uukwalumbe A Extension 1, Uukwalumbe A Extension 2 and Uukwalumbe A Proper in order to create additional properties that will cater to the varying property needs for the residents of Okahao. The Proposed Uukwalumbe A Extension 1 measures **89.85ha** while the Uukwalumbe A Extension 2 measures **50.89ha** and the Uukwalumbe A Proper measures **77.55ha**.

The area which is to be subdivided for the proposed townships' establishment of the Uukwalumbe A Extension 1, Uukwalumbe A Extension 2 and Uukwalumbe A Proper, is partially occupied by traditional homesteads which have been fairly incorporated into the layout plans for the proposed townships. The area is mainly located on higher ground, limiting the effects of inundations. However, the area also comprises of natural storm water ponds which have been fairly respected and accommodated on erven zoned for "Public Open Spaces" in the layout plans for the proposed three (3) townships.

The establishment of the proposed townships on the proposed Portions 18, 19 and 20 of the Farm Okahao Townlands Extension No. 1213 is a response to the need for additional properties such as; Residential, General Residential, Business, Office, Industrial, Light Industrial, Institutional, Local Authority, Private and Public Open Spaces in the town of Okahao as identified by the Okahao Town Council. The Town Council has thus resolved to simultaneously establish one Industrial township to be known as Uukwalumbe A Extension 2 that will cater to mainly the industrial and Light Industrial erven in Okahao.

The development is needed and desired as it will help boost the local economy of the town and it will also enable the residents of Okahao to own land under freehold land tenure, empowering them towards wealth generation and economic upliftment.

The Reminders of the proposed Portion 19, 18 and 20 of the Farm Okahao Townlands Extension No. 1213 will serve as "Streets" providing access to the various erven within the proposed townships of the Uukwalumbe A Extension 1, Uukwalumbe A Extension 2 and Uukwalumbe A Proper, ensuring ease of movement and connectivity within the neighborhoods and the surrounding areas.

Public Participation

Communication with Interested and Affected Parties (I&APs) about the proposed development was facilitated through 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 **22 June 2023**;
- Notices were placed in the New Era newspapers and the Namibian newspapers dated **22 June 2023 and 29 June 2023**, 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 **Friday, 14 July 2023 this was extended to 31 July 2023**). The comment period will remain open until the final scoping report is submitted to MEFT.

The Draft Scoping Report was circulated from the **13 February 2024 until the 27 February 2024** so that the public could review and comment on it. The comment period will remain open until the final scoping report is submitted to MEFT..

Conclusions and Recommendations

With reference to **Table 7**, none of the negative construction phase impacts were deemed to have a high 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)**.

With reference to **Table 7**, none of the negative operational phase impacts were deemed to have a high significance impact on the environment. The operational impacts were assessed to a **Medium (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 because should the development not proceed the subject area will remain vacant and mostly undeveloped. From a social perspective, the development will provide for the establishment of three new townships which will offer residents the opportunity to acquire residential property. Furthermore, the land uses provided for within the proposed townships will offer economic and tourism opportunities to local businesspeople in the town or from outside investors.

A small number of residents from Okahao could benefit from the development because of the potential job opportunities during construction as well as the increased development within the area. Furthermore, the community of Okahao are further expected to benefit from the "Business" zoned erven that will creates employment opportunities for the locals. The significance of the social impact was therefore deemed to be **Medium (positive)**.

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
MET	Ministry of Environment and Tourism
MET: DEA	Ministry of Environment and Tourism: Department of Environmental Affairs
MURD	Ministry of Urban and Rural Development
MWTC	Ministry of Works Transport and Communication
NAMPAB	Namibia Planning Advisory Board
NPC	Namibia Planning Commission
OTC	Okahao Town Council
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 Okahao Town Council hereinafter referred to as the proponent intends to undertake the following activities:

- **Subdivision of the Remainder of the Farm Okahao Townlands No. 989 into Portion A (now Portion 16) and Remainder;**
- **Subdivision of the Remainder of the Farm Okahao Townlands Extension No. 1213 into Portions B, C, D (now Portion 17, 18 and 19) and Remainder;**
- **Consolidation of Portion A (now Portion 16) of the Remainder of the Farm Okahao Townlands No. 989 and Portion B (now Portion 17) of Remainder of the Farm Okahao Townlands Extension No. 1213 into Consolidated Portion E (now Portion 20);**
- **Layout approval and township establishment on Portion C (now Portion 18) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Extension 1;**
- **Layout approval and township establishment on Portion D (now Portion 19) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Extension 2;**
- **Layout approval and township establishment on Portion E (now Portion 20) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Proper;**
- **Inclusion of Uukwalumbe A Extension 1, Uukwalumbe A Extension 2, and Uukwalumbe A Proper, in the next Zoning Scheme to be prepared for Okahao.**

The above are 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 (a) Infrastructure	The construction of oil, water, gas and petrochemical and other bulk supply pipelines;	The proposed project involves the installation of bulk services.
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 construction of a public 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 and Tourism: Department of Environmental Affairs (MET: DEA).

The process will be undertaken in terms of the 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 potential 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

The area that is to be subdivided for the proposed townships establishment developments is located West of Okahao Proper and South of the M0123 (C41) Road to Tsandi as depicted in **Figure 1** below and is currently zoned for “Undetermined” purposes in terms of the Okahao Town Planning Scheme. The subject area is owned by the Okahao Town Council.

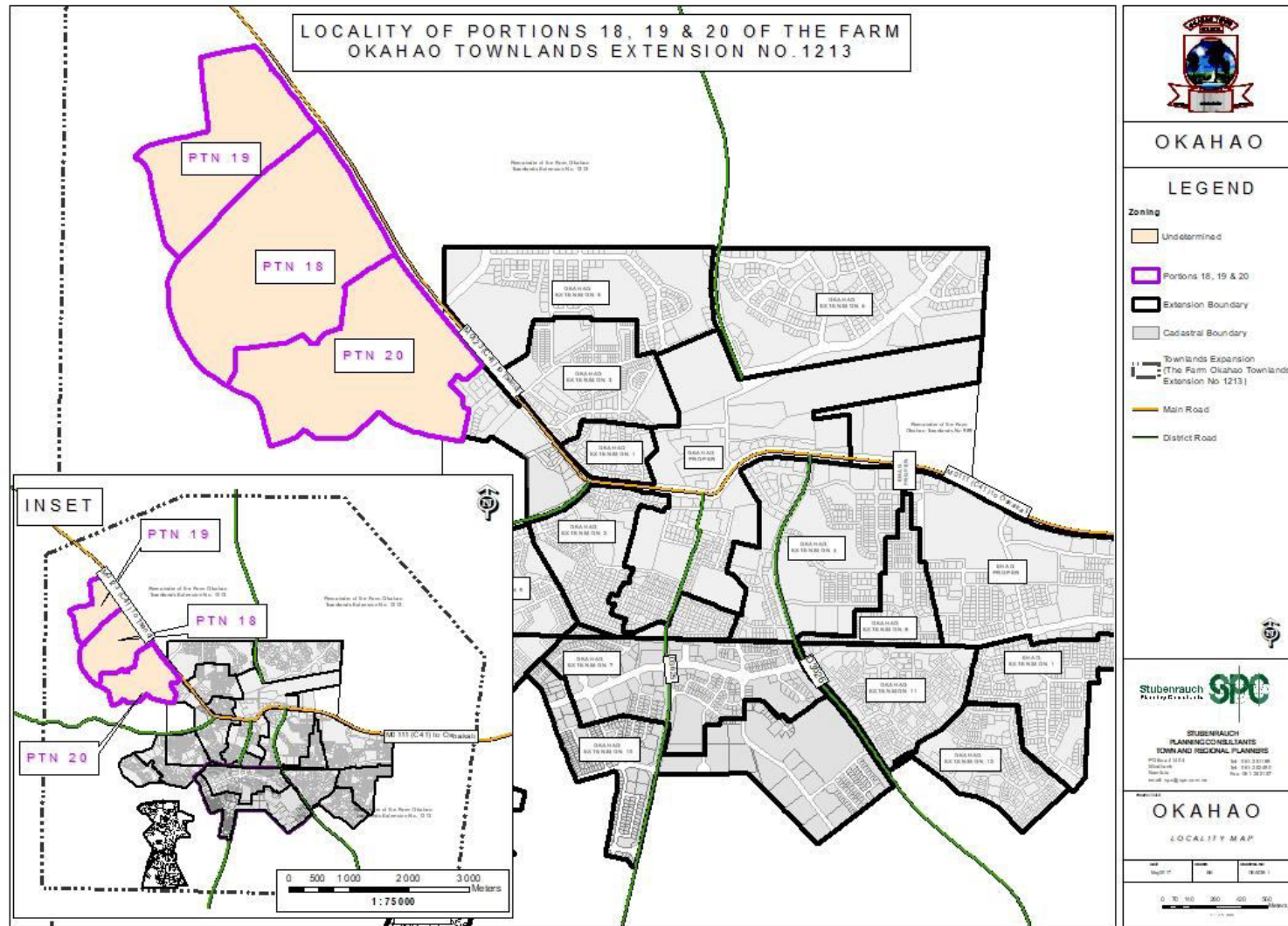


Figure 1: Locality of proposed development in Okahao

1.3 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 Okahao Townlands No. 989 into Portion A (now Portion 16) and Remainder;**
- **Subdivision of the Remainder of the Farm Okahao Townlands Extension No. 1213 into Portions B, C, D (now Portion 17, 18 and 19) and Remainder;**
- **Consolidation of Portion A (now Portion 16) of the Remainder of the Farm Okahao Townlands No. 989 and Portion B (now Portion 17) of Remainder of the Farm Okahao Townlands Extension No. 1213 into Consolidated Portion E (now Portion 20);**
- **Layout approval and township establishment on Portion C (now Portion 18) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Extension 1;**
- **Layout approval and township establishment on Portion D (now Portion 19) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Extension 2;**
- **Layout approval and township establishment on Portion E (now Portion 20) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Proper;**
- **Inclusion of Uukwalumbe A Extension 1, Uukwalumbe A Extension 2, and Uukwalumbe A Proper, in the next Zoning Scheme to be prepared for Okahao.**

1.4 ASSUMPTIONS AND LIMITATIONS

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

- Assumes the information provided by the proponent is accurate and discloses all information available.
- The limitation that no alternative except for the preferred layout plans and the 'no-go' option was considered during this assessment. The unique character and appeal of Okahao were however taken into consideration with the design perspective. Various layout alternatives were initially considered by the proponent, also taking terrain and environmental constraints into account, thus the current design plans being the most feasible result.

1.5 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 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
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	Refer to Annexure C

Section	Description	Section of FESR/ Annexure
	interested and affected parties, the date of receipt of and the response of the EAP to those issues;	
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 community that may be affected by the activity;	Refer to Chapter 4
8 (h)	A description and assessment of the significance of any significant 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 10.1 (a) Infrastructure 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 should be considered by the proponent in the scoping process.	The EA process should incorporate the aspects outlined in the guidelines.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
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.
Township and Division of Land Ordinance 11 of 1963	The Townships and Division of Land Ordinance regulates subdivisions of portions of land falling within a Local Authority area	In terms of Section 19 such applications are to be submitted to NAMPAB and Townships Board respectively.
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.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Roads Ordinance 17 of 1972	<ul style="list-style-type: none"> • 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 • Section 37.1 deals with Infringements and obstructions on and interference with proclaimed roads. 	Adhere to all applicable provisions of the Roads Ordinance.
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	The Policy seeks to ensure that the environmental consequences of development projects and policies	This EIA considers this term of Environment.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Namibia (1995)	are considered, understood and incorporated into the planning process, and that the term ENVIRONMENT is broadly interpreted to include biophysical, 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. 1 of 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 Ministry of Agriculture, Water and 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	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
	emitted by vehicles.	
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.

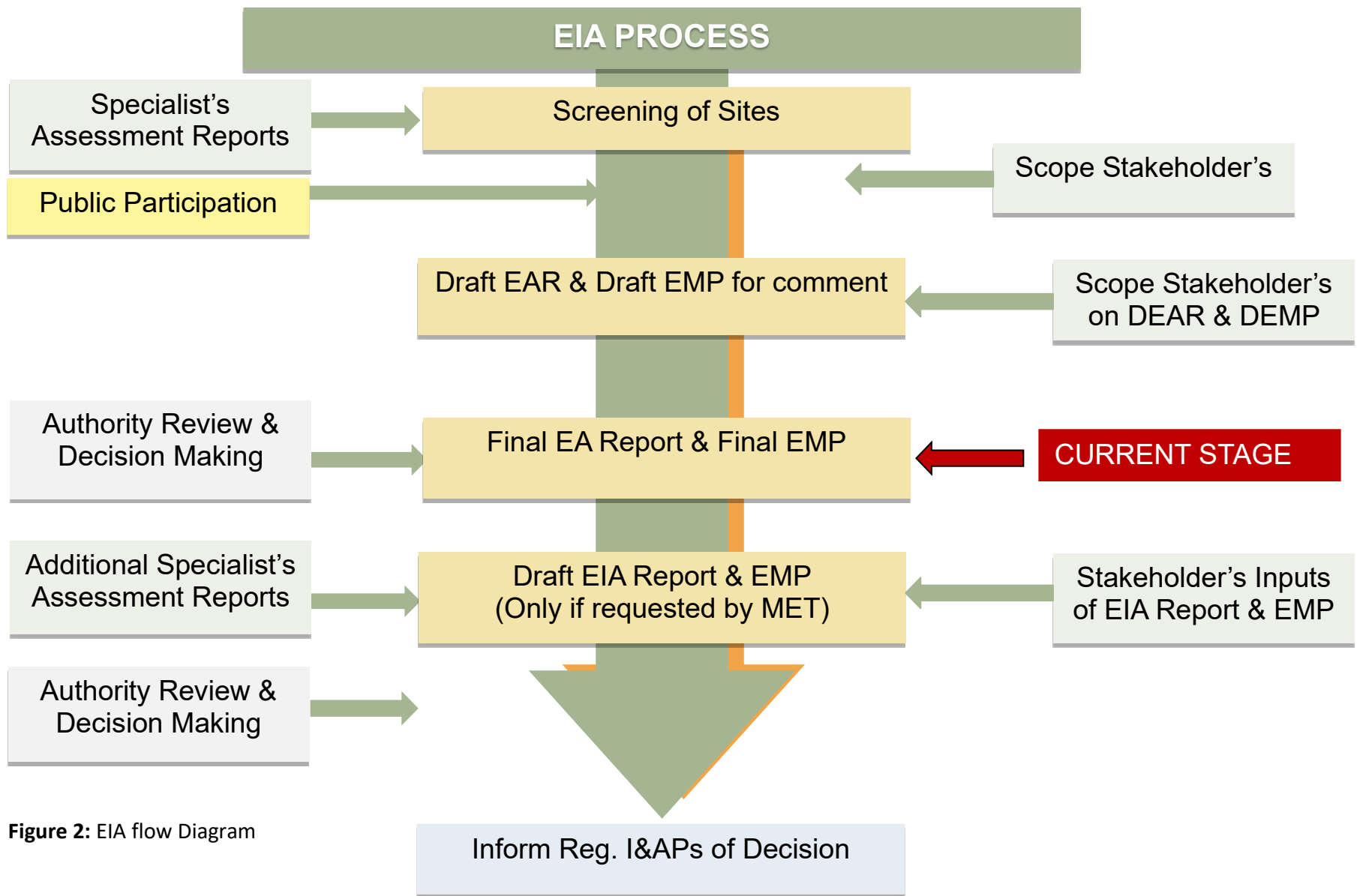


Figure 2: EIA flow Diagram

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 2011 Namibia Population and Housing Census (Namibia Statistics Agency, 2013), and presented from a local and regional perspective.

Table 4: Statistics of the Okahao Constituency and Omusati Region (Namibia Statistics Agency, 2014)

OKAHAO CONSTITUENCY	
ATTRIBUTE	INDICATOR
Population	17 548
Females	9 529
Males	8 019
Population under 5 years	13%
Population aged 5 to 14 years	24%
Population aged 15 to 59 years	51%
Population aged 60 years and above	12%
Female: male ratio	84:100
Literacy rate of 15 years old and above	84%
People above 15 years who have never attended school	12%
People above 15 years who are currently attending school	19%
People above 15 years who have left school	65%
People aged 15 years and above who belong to the labour force	50%
Population employed	63%
Homemakers	15%
Students	43%
Retired or old age income recipients	42%
Income from pension	32%
Income from business and non-farming activities	28%
Income from farming	9%
Income from cash remittance	6%
Wages and salaries	27%
Main Language	Oshiwambo Languages- 96%
OMUSATI REGION	
ATTRIBUTE	INDICATOR
Population	243 166
Population aged 60 years and above	11%
Population aged 5 to 14 years	26%
Population aged 15 to 59 years	49%

3.1.2 Archaeological and Heritage Context

No archaeological and heritage sites are known to be located within the proposed development area.

3.2 BIO-PHYSICAL ENVIRONMENT

3.2.1 Climate

The climate of the subject area can be described as semi-arid. Average annual temperatures are usually more than 22 °C, with average maximum temperatures between 34°C and 36 °C and average minimum temperatures between 6°C and 8 °C (Mendelsohn, Jarvis, Roberts & Roberston, 2002).

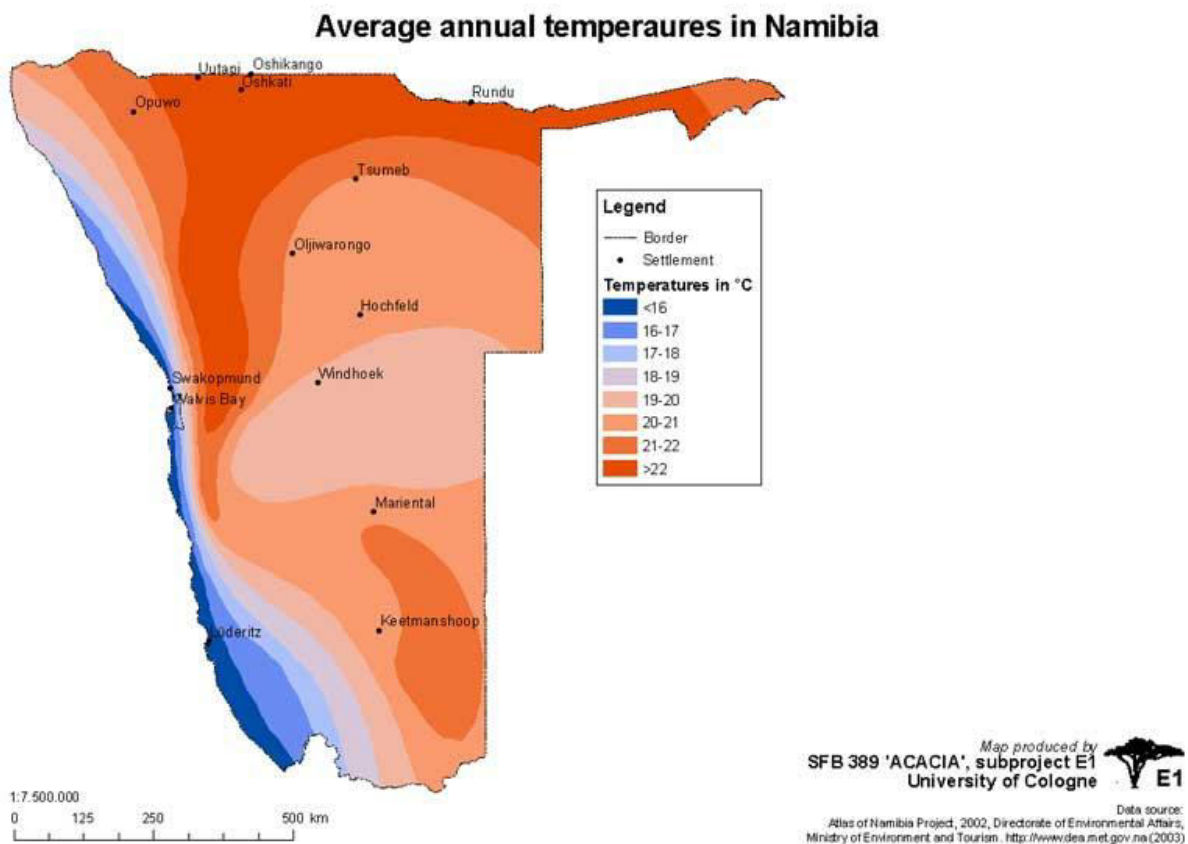


Figure 3: Annual average temperature (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/e1_download_climate_e.htm#temperature_annual)

The subject area generally experiences more rainfall than the south and west of the country with an average rainfall of 350 to 550 mm as indicated in **Figure 4** below.

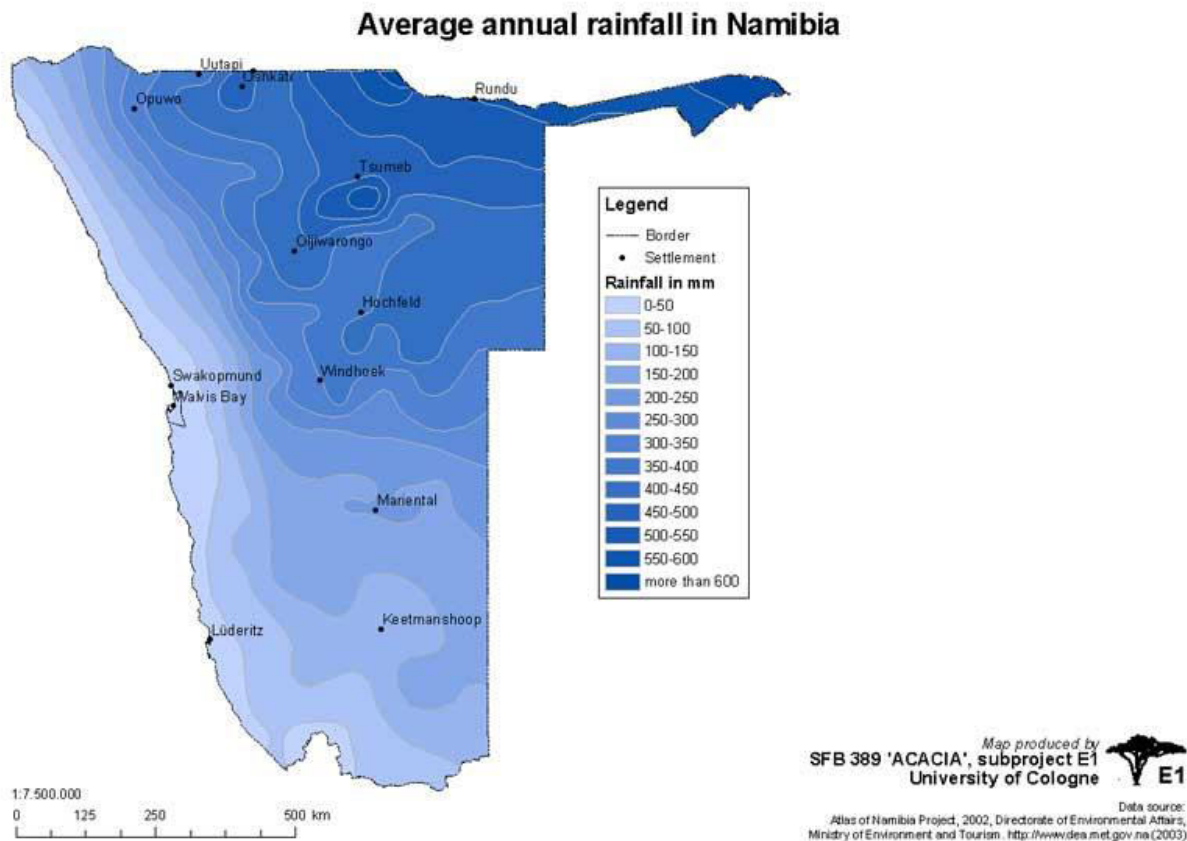


Figure 4: Average annual Rainfall (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/climate/rainfall-annual.jpg)

3.2.2 Topography, Geology and Soils

The Omusati Region forms part of the Kalahari Group Geological division depicted in pale yellow in **Figure 5** below. The dominant soils within the area are mainly sands and clays (Mendelsohn et al., 2002).

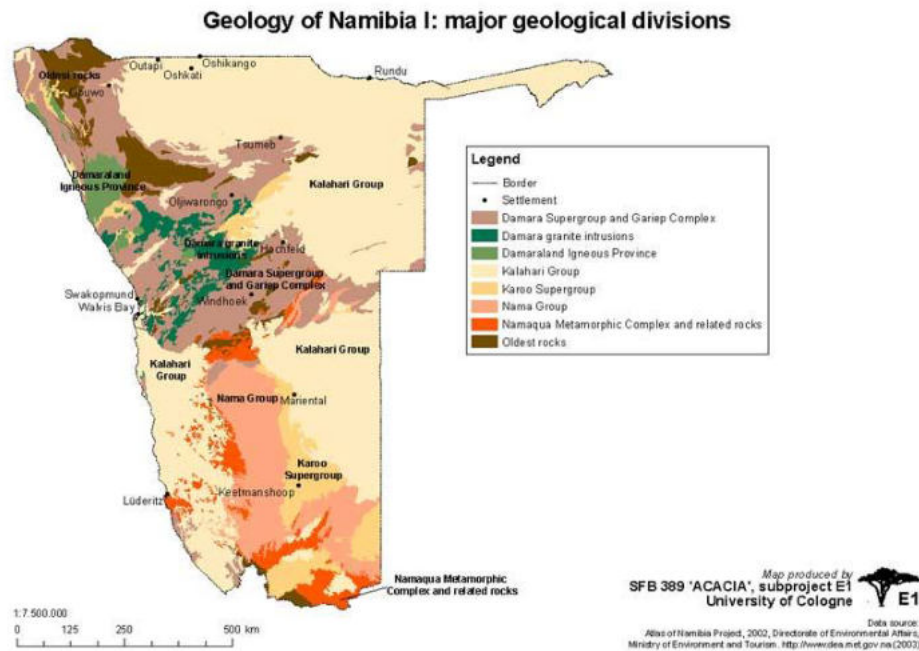


Figure 5: Geology of Namibia (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/physical/geology.jpg)

3.2.3 Hydrology and Hydrogeology

In terms of groundwater, the area falls within the Cuvelai-Etoshia groundwater basin depicted in **Figure 6** below. The hydrogeological Cuvelai Basin comprises the Omusati, Oshana, Ohangwena, and Oshikoto Regions and parts of the Kunene Region (Ministry of Agriculture Water and Rural Development, 2011).

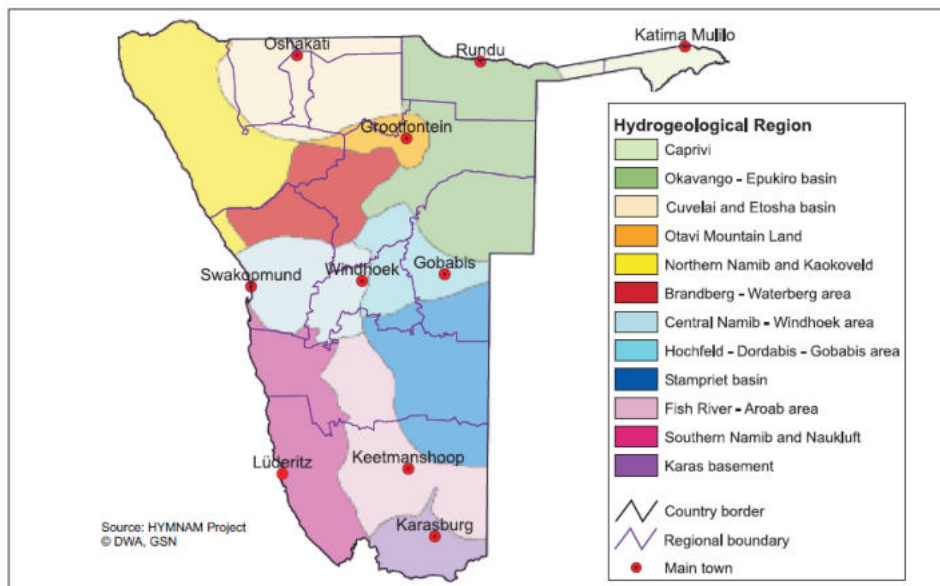


Figure 6: Groundwater basins and hydrogeological regions in Namibia

The Cuvelai Basin consists of thousands of drainage channels or oshanas which flow during the rainy season. The oshanas are “shallow, often vegetated and poorly defined, interconnected flood channels and pans through which surface water flows slowly or may form pools depending on the intensity of the floods (“efundja”)” (Ministry of Agriculture Water and Rural Development, 2011).

The Cuvelai Basin is the most densely populated areas in the country with most communities living in rural areas largely dependent on agriculture (Ministry of Agriculture Water and Rural Development, 2011). The villages and towns located within the Cuvelai Basin are supplied with water from the Calueque Dam, north of the Angolan border, via an extensive system of canals and pipelines. “Water stored in the Calueque Dam on the Kunene River just north of the border is pumped via a canal to the Olushandja Dam in Namibia, from where it is gravity fed via a concrete-lined canal to Oshakati” (Ministry of Agriculture Water and Rural Development, 2011).

Because surface water is only available during the rainy season, people rely on other water sources during the dry season. As such groundwater is sourced in the region through dug wells and boreholes.

3.3 TERRESTRIAL ECOLOGY

3.3.1 Flora and Fauna

The Omusati Region falls within the broader Tree-and-Shrub Savanna biome and forms part of the Acacia Tree-and -shrub Savanna sub-biome. The Acacia Tree-and -shrub Savanna sub-biome is characterized by large, open expanses of grasslands dotted with Acacia trees (Mendelsohn *et al.*, 2002). The trees within this biome are tallest in the east where they grow in deeper sands and become more shrub-like to the west where they grow in shallower soils.

The indigenous trees found within the region include Makalani Palm Trees (*Hyphaene petersiana*) and Mopane Trees (*Colophospermum mopane*). The Makalani Palm and Mopane trees are protected tree species and should thus not be removed. If removal is required a permit needs to be obtained from the Ministry of Agriculture Water and Forestry prior to removal. Trees protected under the Forestry Act 12 of 2001 should be protected within the layout of the proposed development.

There are no significant fauna and flora found to be located within the development area.

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 Okahao Townlands No. 989 into Portion A (now Portion 16) and Remainder;**
- **Subdivision of the Remainder of the Farm Okahao Townlands Extension No. 1213 into Portions B, C, D (now Portion 17, 18 and 19) and Remainder;**
- **Consolidation of Portion A (now Portion 16) of the Remainder of the Farm Okahao Townlands No. 989 and Portion B (now Portion 17) of Remainder of the Farm Okahao Townlands Extension No. 1213 into Consolidated Portion E (now Portion 20);**
- **Layout approval and township establishment on Portion C (now Portion 18) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Extension 1;**
- **Layout approval and township establishment on Portion D (now Portion 19) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Extension 2;**
- **Layout approval and township establishment on Portion E (now Portion 20) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Proper;**
- **Inclusion of Uukwalumbe A Extension 1, Uukwalumbe A Extension 2, and Uukwalumbe A Proper, in the next Zoning Scheme to be prepared for Okahao.**

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

4.2 ALTERNATIVES

As pointed out in Section 1.4 above various layout alternatives were initially considered by the proponent, ultimately resulting in the final layouts. As such only the no-go alternative will be discussed below.

4.2.1 No – Go Alternative

The no-go alternative is the baseline against which all alternatives are assessed. The no-go alternative would essentially entail maintaining the current situation, whereby the Farm Okahao Townlands Extension No. 1213 would not be subdivided, and the proposed townships would not be

developed. Thus, the Town Council and the residents will not be able to receive the benefits which may result from the construction and operational phase of the development.

4.3 THE PROPOSED DEVELOPMENT

The Okahao Town Council intends to establish three (3) townships in Okahao to be known as Uukwalumbe A Extension 1, Uukwalumbe A Extension 2 and Uukwalumbe A Proper in order to create additional properties that will cater to the varying property needs for the residents of Okahao. The Proposed Uukwalumbe A Extension 1 measures **89.85ha** while the Uukwalumbe A Extension 2 measures **50.89ha** and the Uukwalumbe A Proper measures **77.55ha**.

The area which is to be subdivided for the proposed townships' establishment of the Uukwalumbe A Extension 1, Uukwalumbe A Extension 2 and Uukwalumbe A Proper, is partially occupied by traditional homesteads which have been fairly incorporated into the layout plans for the proposed townships. The area is mainly located on higher ground, limiting the effects of inundations. However, the area also comprises of natural storm water ponds which have been fairly respected and accommodated on erven zoned for "Public Open Spaces" in the layout plans for the proposed three (3) townships.

The establishment of the proposed townships on the proposed Portions 18, 19 and 20 of the Farm Okahao Townlands Extension No. 1213 is a response to the need for additional properties such as; Residential, General Residential, Business, Office, Industrial, Light Industrial, Institutional, Local Authority, Private and Public Open Spaces in the town of Okahao as identified by the Okahao Town Council. The Town Council has thus resolved to simultaneously establish one Industrial township to be known as Uukwalumbe A Extension 2 that will cater to mainly the industrial and Light Industrial erven in Okahao.

The development is needed and desired as it will help boost the local economy of the town and it will also enable the residents of Okahao to own land under freehold land tenure, empowering them towards wealth generation and economic upliftment.

The Reminders of the proposed Portion 19, 18 and 20 of the Farm Okahao Townlands Extension No. 1213 will serve as "Streets" providing access to the various erven within the proposed townships of the Uukwalumbe A Extension 1, Uukwalumbe A Extension 2 and Uukwalumbe A Proper, ensuring ease of movement and connectivity within the neighborhoods and the surrounding areas.

The following town planning steps are required to facilitate the intended development:

- **Subdivision of the Remainder of the Farm Okahao Townlands No. 989 into Portion A (now Portion 16) and Remainder;**
- **Subdivision of the Remainder of the Farm Okahao Townlands Extension No. 1213 into Portions B, C, D (now Portion 17, 18 and 19) and Remainder;**
- **Consolidation of Portion A (now Portion 16) of the Remainder of the Farm Okahao Townlands No. 989 and Portion B (now Portion 17) of Remainder of the Farm Okahao Townlands Extension No. 1213 into Consolidated Portion E (now Portion 20);**
- **Layout approval and township establishment on Portion C (now Portion 18) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Extension 1;**
- **Layout approval and township establishment on Portion D (now Portion 19) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Extension 2;**
- **Layout approval and township establishment on Portion E (now Portion 20) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Proper;**
- **Inclusion of Uukwalumbe A Extension 1, Uukwalumbe A Extension 2, and Uukwalumbe A Proper, in the next Zoning Scheme to be prepared for Okahao.**

According to the Okahao Town Planning Scheme, "Undetermined Use" refers to *land reserved for future urban development, further provided that any consent, inclusive of uses by Council and the Competent Authority, on an erf shall be subject to the regulations of Clause 7 of the scheme.*

4.3.1 Subdivision

The proposed Portion C (Portion 18) is envisioned for the township establishment of Uukwalumbe A Extension 1 and the proposed Portion D (Portion 19) is earmarked for the Industrial township establishment of the Uukwalumbe A Extension 2 whereas the proposed Portion B (Portion 17) which is now a consolidated Portion 20 is earmarked for the township establishment of the Uukwalumbe A Proper.

There are two subdivisions to be made in this proposed development as discussed and as depicted on **Figure 7 and 8** below.

- Subdivision of the Remainder of the Farm Okahao Townlands No. 989 into Portion 16 and Remainder.
- Subdivision of the Remainder of the Farm Okahao Townlands Extension No. 1213 into Portions B, C, D (now Portion 17, 18 and 19) and Remainder.

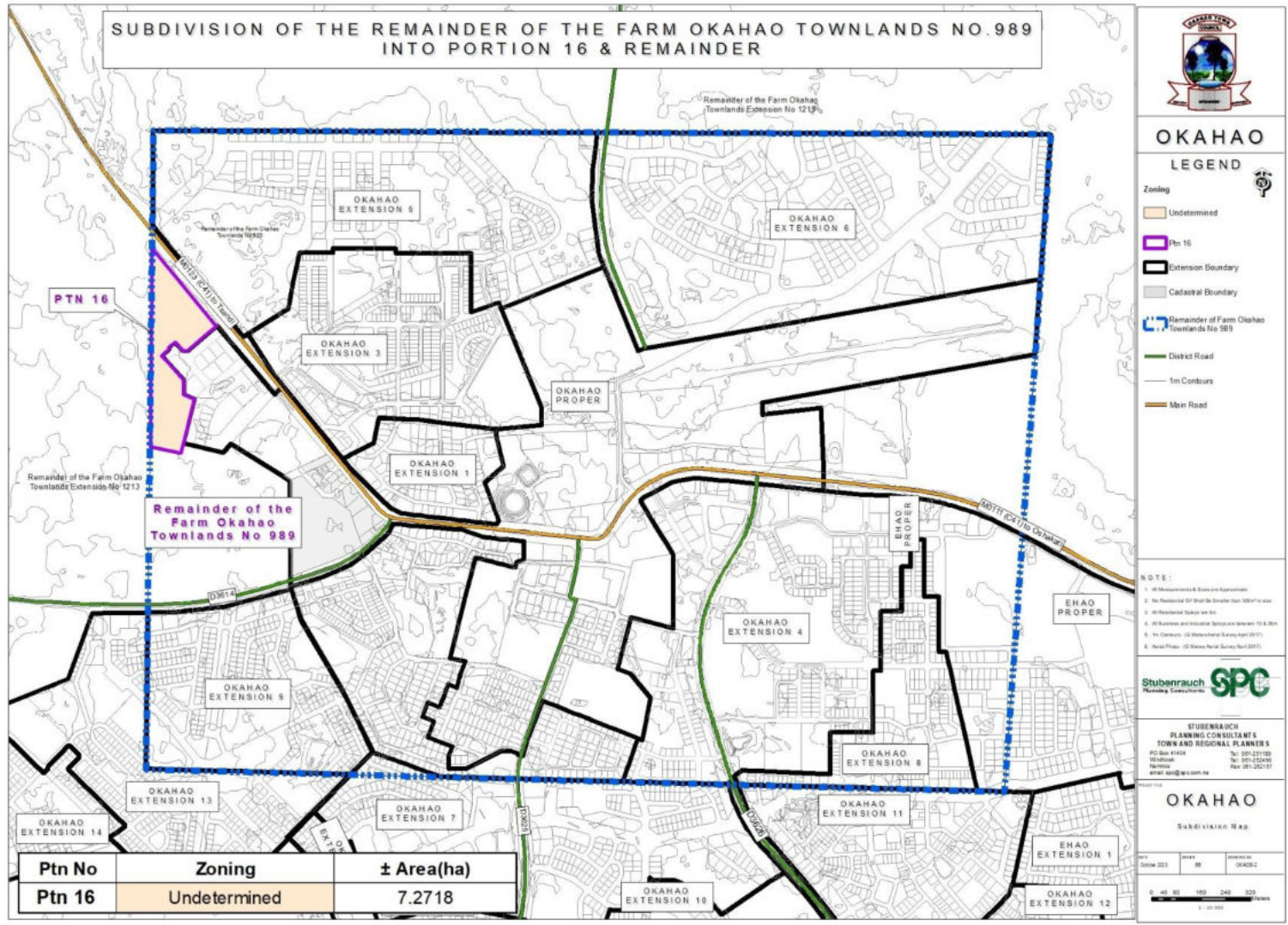


Figure 7: Subdivision of the Remainder of the Farm Okahao Townlands No. 989 into Portion 16 and Remainder

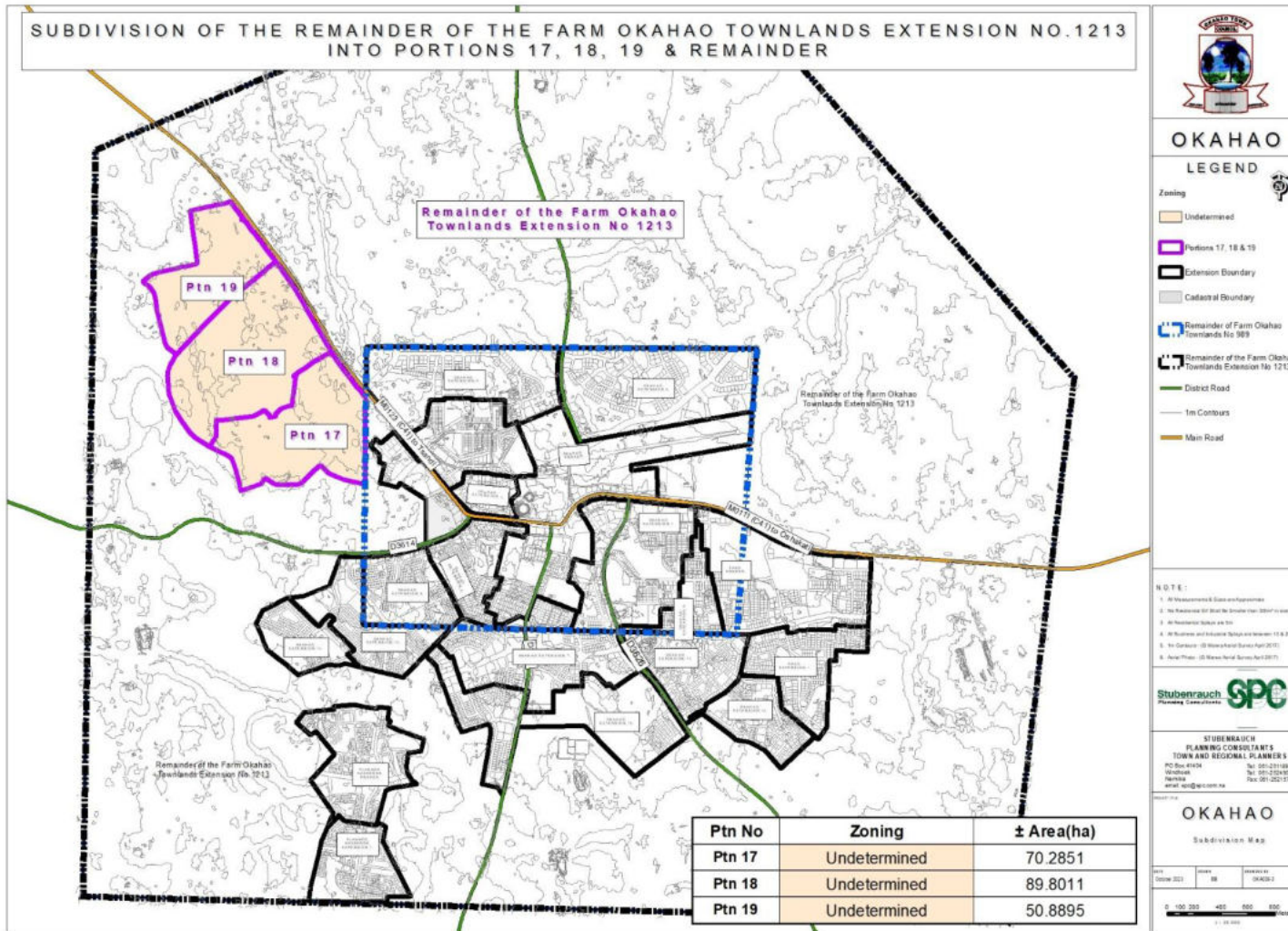


Figure 8: Subdivision of the Remainder of the Farm Okahao Townlands Extension No. 1213 into Portions B, C, D (now Portion 17, 18 and 19) and Remainder.

4.3.2 Consolidation

Consolidation of Portion A (now Portion 16) of the Remainder of the Farm Okahao Townlands No. 989 and Portion B (now Portion 17) of Remainder of the Farm Okahao Townlands Extension No. 1213 into Consolidated Portion E (now Portion 20).

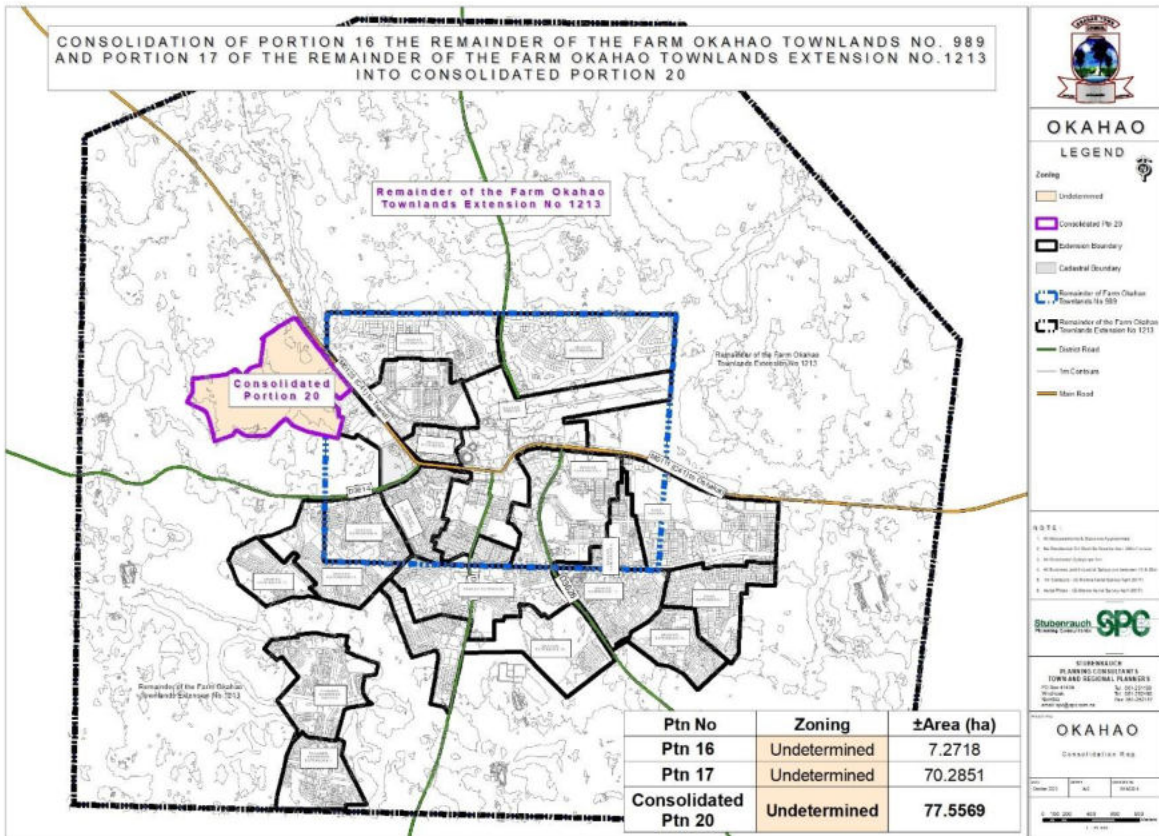


Figure 9: Consolidated Portion 20

4.3.3 Layout plan for Uukwalumbe A Extension 1

Layout approval and township establishment on Portion C (now Portion 18) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Extension 1

The proposed Uukwalumbe A Extension 1 which is to be established on Portion 18 of the Remainder of the Farm Okahao Townlands Extension No. 1213 is envisioned for the development of mainly residential and commercial land use activities, supported by other various land uses which are essential for the efficient functioning of a township. The proposed Uukwalumbe A Extension 1 comprises of 330 erven and the Remainder.

The draft layout plan proposed for the Uukwalumbe A Extension 1 to be established on Portion 18 of the Remainder of the Farm Okahao Townlands Extension No. 1213 has the following distinct features:

- The draft layout plan for Uukwalumbe A Extension 1 makes provision for 202 erven zoned for “Residential” purposes to help address the increasing demand for residential properties in the town of Okahao. These residential properties are created with a vision that the future owners and employees of the intended commercial development will benefit from staying closer to their places of work/business, saving on transport costs.
- Thirty-one (31) “General Residential” erven have been provided for in the draft layout plan and are located closer to the main traffic routes to ensure convenience of the future residents and closer to other land uses for the reinforcement of one another.
- Forty-seven (47) erven zoned “Business” have been provided for in the draft layout plan for Uukwalumbe A Extension 1. These erven are mainly located in close proximity to one another, creating a commercial node that is expected to help boost the local economy of Okahao.
- Twenty-Two (22) “Office” erven provided for in the layout plan are located in close proximity to the “Business” erven to help strengthen the future commercial node of Okahao and serve as a new central business district of (CBD) Okahao.
- There are two (2) erven zoned “Light Industrial” provided for in the layout.
- There are three (3) erven zoned “Institutional” provided for in the layout.
- Twenty-Three (23) erven have been zoned for “Public Open Space” (POS) purposes, mainly to accommodate the existing storm water ponds and drainage channels, the existing electricity powerlines as well as the water pipeline. Some other POS provided have a potential to be developed into community recreational leisure parks and playgrounds to enhance the social and mental well-being of the community.
- The Remainder of the proposed Portion C (Portion 18) of the Farm Okahao Townlands Extension No. 1213 will be reserved as “Street” which will provide access to the various erven within the proposed Uukwalumbe A Extension 1 and ensuring ease of movement and connectivity within the neighbourhood and the surrounding areas. The “Street” will also serve as a stormwater management channel within the neighbourhood of the Uukwalumbe A Extension 1. The width of the roads in the proposed township ranges between 18m to 40m.

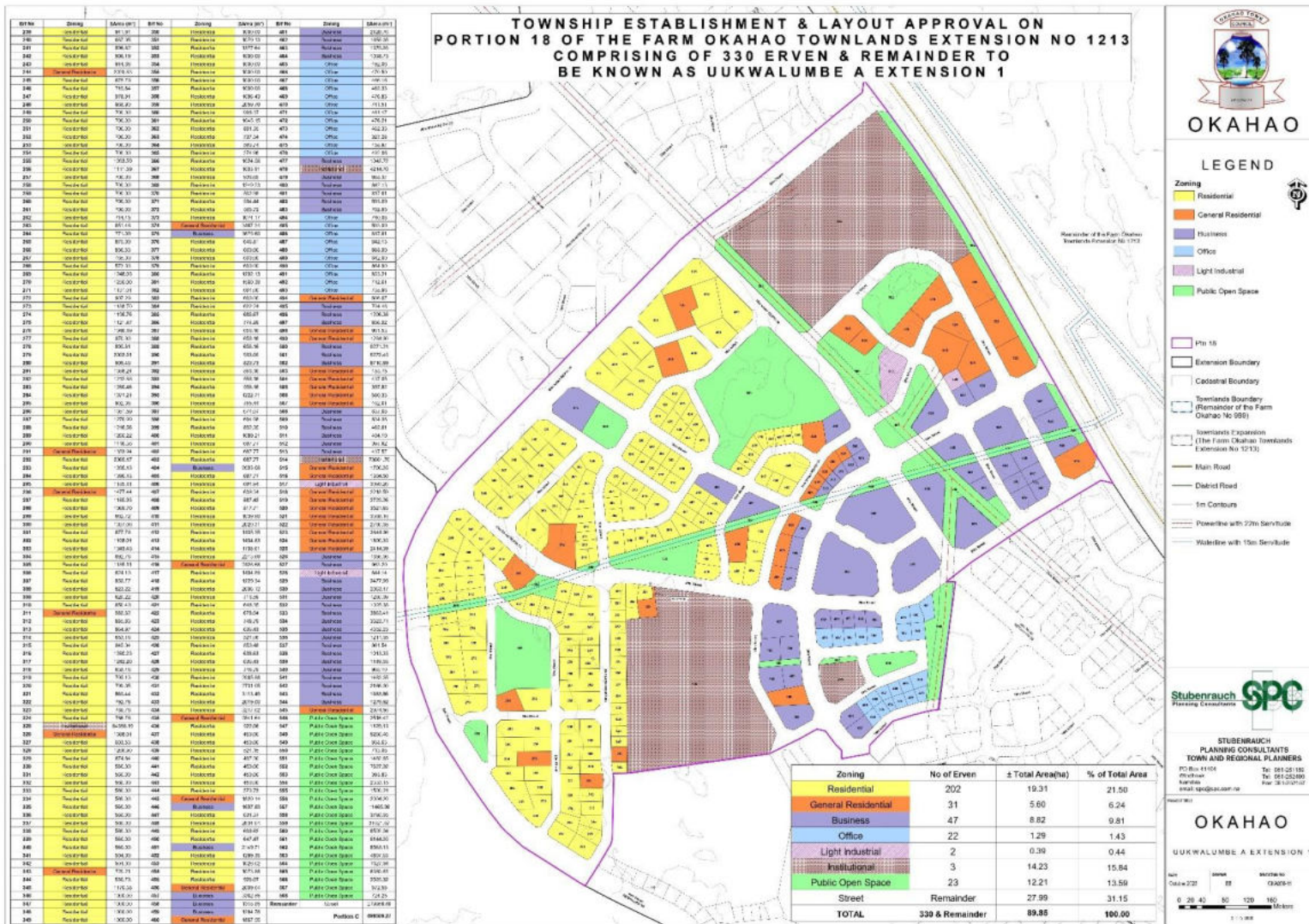


Figure 10: Layout map of Portion 18 of Uukwalumbe A Extension 1

4.3.4 Layout plan for Uukwalumbe A Extension 2

Layout approval and township establishment on Portion D (now Portion 19) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Extension 2.

The proposed Uukwalumbe A Extension 2 which comprises of 101 erven and the Remainder is envisioned for the Industrial Township for the development and operation of mainly industrial and commercial business activities, supported by other various land uses which are essential for the efficient functioning of the Industrial township. The proposed commercial and industrial development on Uukwalumbe A Extension 2 are in line with the development proposals as outlined in the Okahao Structure Plan 2022–2024.

The draft layout plan proposed for the Uukwalumbe A Extension 2 to be established on Portion 19 of the Remainder of the Farm Okahao Townlands Extension No. 1213 has the following distinct features:

- The draft layout plan for Uukwalumbe A Extension 2 makes provision for 78 erven zoned for “Industrial” to help accommodate the various industrial activities within the town of Okahao.
- There are eight (8) erven zoned “Light Industrial” provided for in the layout
- Five (5) erven zoned “Business” have been provided for in the draft layout plan for Uukwalumbe A Extension 2. These erven are mainly located in close proximity to one another.
- There is one (1) erf that has been zoned for “Local Authority” purposes provided for in the layout.
- The nine (9) “Public Open Spaces” erven provided for in the layout plan mainly to accommodate the existing storm water ponds and drainage channels and the existing electricity powerlines. Some other POS provided have a potential to be developed into community recreational leisure parks and playgrounds to enhance the social and mental well-being of the community.
- The Remainder of the proposed Portion D of the Farm Okahao Townlands Extension No. 1213 will be reserved as “Street” which will provide access to the various erven within the proposed Uukwalumbe A Extension 2 and ensuring ease of movement and connectivity within the neighbourhood and the surrounding areas. The “Street” will also serve as a stormwater management channel within the neighbourhood of Uukwalumbe A Extension 2.

**TOWNSHIP ESTABLISHMENT & LAYOUT APPROVAL ON
PORTION 19 OF THE FARM OKAHAO TOWNLANDS EXTENSION NO 1213
COMPRISING OF 101 ERVEN & REMAINDER TO BE KNOWN AS UUKWALUMBE A EXTENSION 2**

Zoning	No of Erven	± Total Area(ha)	% of Total Area
Business	5	1.54	3.02
Light Industrial	8	4.78	9.35
Industrial	78	27.03	53.12
Public Open Space	1	0.54	1.05
Street	9	5.12	10.05
Street	Remainder	11.91	23.40
TOTAL	101 & Remainder	50.89	100.00

Erft No	Zoning	±Area (m ²)	Erft No	Zoning	±Area (m ²)
569	Industrial	4143.46	621	Industrial	1836.02
570	Industrial	3507.11	622	Industrial	2702.62
571	Industrial	7809.57	623	Industrial	3389.12
572	Industrial	5440.65	624	Industrial	7638.66
573	Industrial	7155.17	625	Industrial	1391.89
574	Light Industrial	8950.69	626	Industrial	1395.25
575	Light Industrial	13623.22	627	Industrial	4219.85
576	Industrial	13868.30	628	Industrial	6262.39
577	Industrial	8941.33	629	Industrial	2377.63
578	Industrial	7370.11	630	Industrial	4876.00
579	Industrial	5650.28	631	Industrial	2474.44
580	Industrial	6301.52	632	Industrial	2491.16
581	Industrial	4823.32	633	Industrial	1842.70
582	Industrial	3604.04	634	Industrial	1815.44
583	Industrial	5578.14	635	Industrial	2228.70
584	Industrial	3685.87	636	Industrial	2865.09
585	Industrial	4158.29	637	Industrial	1832.65
586	Light Industrial	5258.34	638	Industrial	2460.62
587	Light Industrial	5688.75	639	Industrial	1942.47
588	Industrial	3791.00	640	Industrial	1870.05
589	Business	3795.30	641	Industrial	2525.15
590	Light Industrial	4165.77	642	Industrial	1765.71
591	Light Industrial	4551.18	643	Industrial	1818.31
592	Business	5188.02	644	Industrial	3801.65
593	Business	2553.24	645	Industrial	4394.43
594	Business	1870.82	646	Industrial	5397.20
595	Business	1867.64	647	Industrial	4494.43
596	Industrial	7076.03	648	Industrial	4463.61
597	Industrial	3427.40	649	Industrial	5059.80
598	Light Industrial	1640.05	650	Industrial	4360.71
599	Light Industrial	4370.98	651	Industrial	5089.85
600	Industrial	3767.67	652	Industrial	2113.47
601	Industrial	2715.26	653	Industrial	1720.61
602	Industrial	2080.61	654	Industrial	1748.00
603	Industrial	2235.39	655	Industrial	1789.83
604	Industrial	3618.10	656	Industrial	2817.20
605	Industrial	2158.07	657	Industrial	1948.40
606	Industrial	2083.52	658	Industrial	1853.51
607	Industrial	2916.41	659	Industrial	1850.26
608	Industrial	2712.36	660	Industrial	6695.12
609	Industrial	1881.18	661	Public Open Space	5790.25
610	Industrial	1471.58	662	Public Open Space	183.13
611	Industrial	1471.40	663	Public Open Space	25259.57
612	Industrial	1220.91	664	Public Open Space	1468.55
613	Industrial	1157.73	665	Public Open Space	2655.29
614	Industrial	1084.54	666	Public Open Space	2600.76
615	Industrial	1031.30	667	Public Open Space	6008.12
616	Industrial	1391.18	668	Public Open Space	3458.54
617	Industrial	1762.82	669	Public Open Space	4962.20
618	Industrial	3289.20	Remainder	Street	119087.37
619	Industrial	1605.25			
620	Industrial	1880.92	Portion 19		508896.49





OKAHAO

LEGEND

Zoning

- Business
- Industrial
- Light Industrial
- Public Open Space

Boundaries

- Port 19
- Extension Boundary
- Cathedral Boundary
- Townlands Boundary (Remainder of the Farm Okahao No 989)
- Townlands Extension (The Farm Okahao Townlands Extension No 1213)
- Townlands Extension (The Farm Okahao Townlands Extension No 1213)

Roads

- Main Road
- District Road
- 1m Corbours
- Posteline with 20m Servitude
- Waterline with 10m Servitude

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PLANNING CONSULTANTS
TOWN AND REGIONAL PLANNERS

PO Box 4044 Tel: 00-20189
Windhoek Fax: 00-20189
Namibia Tel: 00-20189
Email: spc@stuba.com.na

OKAHAO

UUKWALUMBE A EXTENSION 2

DATE: 09/09/2017 DRAWN: 06/09/2017 CHECKED: 01/10/2017

0 20 40 80 120 160 METERS

1:1750

Figure 11: Layout map of Portion 19 of Uukwalumbe A Extension 2

4.3.5 Layout plan for Uukwalumbe A Proper

Layout approval and township establishment on Portion E (now Portion 20) of the Remainder of the Farm Okahao Townlands Extension No. 1213 to become known as Uukwalumbe A Proper.

The proposed Uukwalumbe A Proper which is to be established on Portion 20 of the Farm Okahao Townlands Extension No. 1213 is envisioned for the development of mainly commercial and residential land use activities, supported by other various land uses which are essential for the efficient functioning of a township. The proposed Uukwalumbe A Proper comprises of 238 erven and the Remainder.

The draft layout plan proposed for the Uukwalumbe A Proper to be established on the consolidated Portion 20 of the Farm Okahao Townlands Extension No. 1213 has the following distinct features:

- The draft layout plan for Uukwalumbe A Proper makes provision for 62 erven zoned for “Residential” purposes to help address the increasing demand for residential properties in the town of Okahao. These residential properties are created with a vision that the future owners and employees of the intended commercial development will benefit from staying closer to their places of work/business, saving on transport costs.
- Thirty-five (35) “General Residential” erven have been provided for in the draft layout plan and are located closer to the main traffic routes to ensure convenience of the future residents and closer to other land uses for the reinforcement of one another.
- A total of 116 erven zoned “Business” have been provided for in the draft layout plan for Uukwalumbe A Proper. These erven are mainly located in close proximity to one another, creating a commercial node that is expected to help boost the local economy of Okahao. The proposed “Business” erven are mainly located along the main movement network connecting Uukwalumbe A Proper to the Office and Business erven on Uukwalumbe A Extension 1, enhancing the commercial vibrancy of the town.
- Three (3) erven have been zoned for “Institutional” purposes in the draft layout plan for Uukwalumbe A Proper which are envisioned for the development of a vocational training institution to help empower the youth of Okahao with the technical skills that are required as the world transitions into the Fourth Industrial Revolution. Other erven zoned “Institutional” will be used for the relevant land uses to be identified by Council based on the hierarchy of institutional needs and as permitted by the Okahao Zoning Scheme.
- Two (2) erven have been zoned for “Local Authority” provided for in the layout.
- There is one (1) erf zoned “Private Open Spaces” provided for in the layout.
- Nineteen (19) erven have been zoned for “Public Open Space” (POS) purposes,
- The Remainder of the proposed Portion E (Portion 20) of the Farm Okahao Townlands Extension No. 1213 will be reserved as “Street” which will provide access to the various erven within the proposed Uukwalumbe A Proper and ensuring ease of movement and connectivity within the neighbourhood and the surrounding areas.

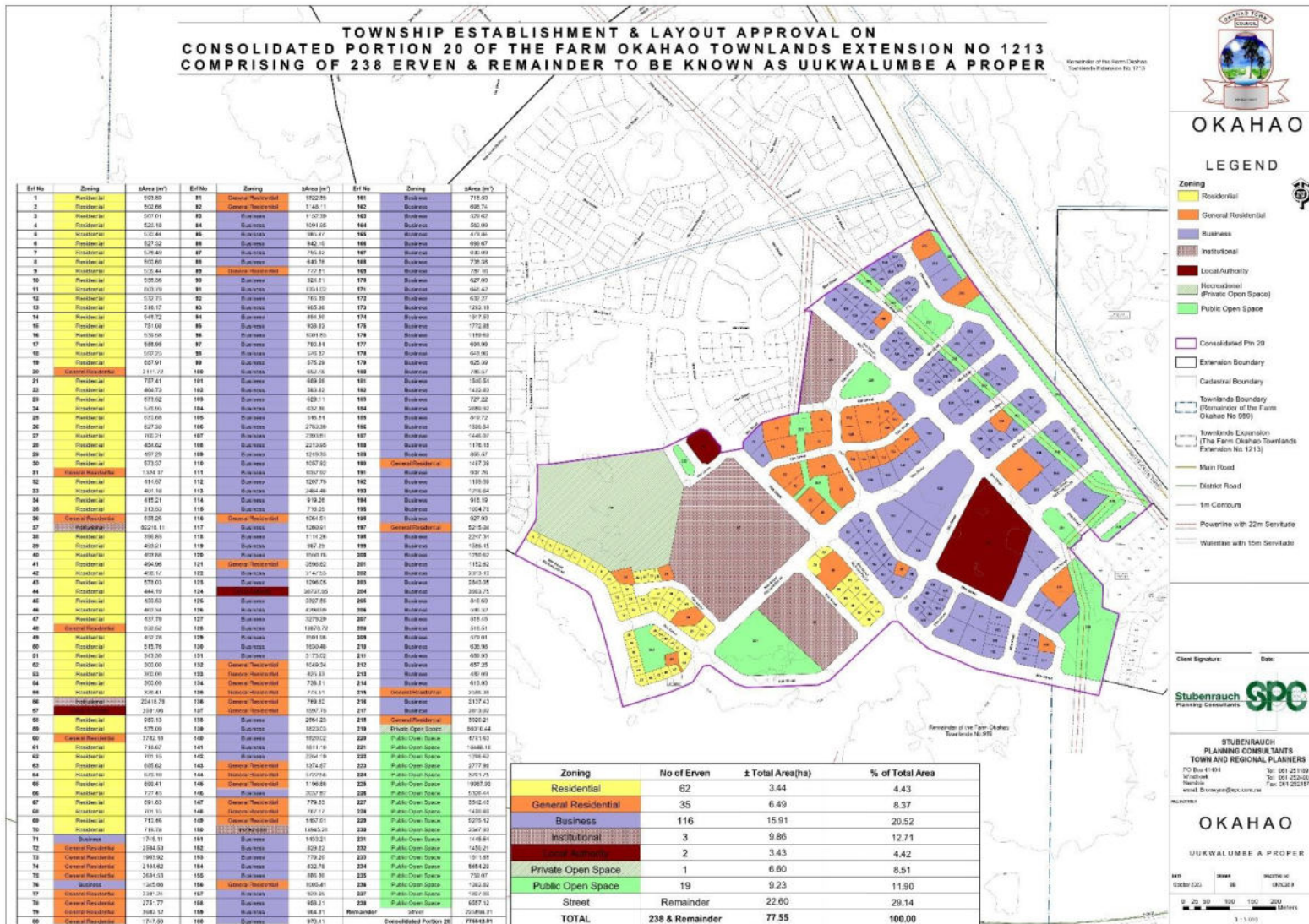


Figure 12: Layout map of Portion 20 of Uukwalumbe A Proper

4.3.6 Engineering Services and Access Provision

It should be noted that the area envisioned for the establishment Uukwalumbe A Extension 1, Uukwalumbe A Extension 2, and Uukwalumbe A Proper is affected by seasonal inundation due to its fairly flat terrain. Thus, the Okahao Town Council need to engage the relevant professional engineers at an early to develop a local stormwater master plan and other engineering masterplans relevant for the development before the roads and all other constructions can take place.

Electricity, water, and sewer

The proposed Uukwalumbe A Extension 1, Uukwalumbe A Extension 2, and Uukwalumbe A Proper to be established on Portion 19, 18 and 20 of the Farm Okahao Townlands Extension No. 1213 will be connected to the existing Municipal reticulation network of the Okahao Town Council which comprises of water, electricity and sewer systems. The extension of the electricity connection to the proposed townships will be done in accordance and to the satisfaction of NORED which currently provides electrical power to the town of Okahao. The design for the extension of water and sewer services will be done in accordance and to the satisfaction of the Engineering and Technical Services Department of the Okahao Town Council.

Storm Water

Stormwater is drained as per the natural drainage system on the site and additional storm water drainage and management measures will be employed in accordance with the Okahao Town Council Drainage System.

Registration of servitudes

A 15m wide waterline servitude should be registered in favour of NamWater against the affected erven in the proposed Uukwalumbe A Extension 1, Uukwalumbe A Extension 2, and Uukwalumbe A Proper to avoid any disruptions from the proposed development.

Furthermore, a 22m wide powerline servitude should be registered in favour of NORED against the affected erven in the proposed Uukwalumbe A Extension 1, Uukwalumbe A Extension 2, and Uukwalumbe A Proper.

Access

Access to the proposed townships will be obtained from the M0123 (C41) Road to Tsandi.

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 5** below for the activities undertaken as part of the public participation process. The I&APs were given time to comment from **22 June 2023 to 31 July 2023**.

Table 5: Table of Public Participation Activities

ACTIVITY	REMARKS
Placement of site notices/posters in Okahao	See Annexure A
Placing advertisements in two newspapers namely the New Era and The Namibian (22 June 2023 and 29 June 2023)	See Annexure B
Written notice to surrounding property owners and Interested and Affected Parties via Email (22 June 2023)	See Annexure C
A public meeting held on 7 July 2023 at 10h00 at Okahao Fire Brigade Hall.	See Annexure C

The public meeting was attended by the consultants, representatives of the proponent, the Okahao Town Councillors as well as other affected parties. Mr. Shinguto welcomed the consultant and all present. The meeting was opened with a prayer whereafter Mr. Shinguto and Ms. lipumbu explained the layout design and the supporting land uses. Ms. lipumbu further went on to explain the environmental impact assessment process and present the identified environmental concerns to date, whereafter those present were given the opportunity to ask questions, provide inputs/comments as well as register as an interested and affected person.

Summary of comments/Input on proposed Layout and Land Uses received during public meeting:

- Public Open Space reference 9936 should be subdivided into residential erven to accommodate an existing house.
- All existing traditional homesteads to be zoned general residential.

- Government zoned plots to be zoned business.
- Private Public Open Space reference 20948 and 9876 be subdivided and zoned business plots.
- Public Open Space reference 1297 to be consolidated with the Market and Taxi rank.
- Consolidate block of erven reference 4594, 3895, 5520,12124,41976,2906,2061,2245 and 2221 into a Institutional zone for a primary school.
- Erf reference 63409 shall be established for a secondary school.
- The block of erven 2986, 2930,3217,2019 and 3469 should be single residential.
- All erven with existing homesteads should be zoned General Residential except in the Industrial Extension 2.
- The powerline should be diverted from Point A to D to run parallel to the main road and delete servitude for the powerline.
- Council to engage Nored to relocate the powerline to run parallel to the main road.
- The Erf reference 2455 (existing house should be properly accommodated into an erf), the road reserve can be reduced to 15m from the centreline to save this house.
- All Industrial erven shall be a minimum size of 1000 m²
- The undetermined land (Reference 78126) shall be subdivided into industrial erven with a minimum size of 1000 m²
- The Public Open Space Reference 30766 should be subdivided into Industrial erven with a minimum size of 1000 m²
- The block of Erven reference 3792,1983, 2553,4598, 5169 should be zoned business because it is closer to a an Erf zoned local Authority established for an open market.
- Erf 1871 should be General Residential.
- The two proposed extensions should be split into 3 extensions with the names Uukwalumbe A Proper, Uukwalumbe A Extension 1 and Uukwalumbe A Extension 2.
- The above changes were in principle endorsed by the Okahao Town Council officials present and Council is to conduct some fieldwork and site verifications whereafter sketch out the above changes which is to be provided to SPC for amendments to the layout.
- Uukwalumbe A Extension 2 will should be the Industrial township.

The following comments/inputs on Environmental Impact Assessment were provided during the public meeting:

- The public requested that more time be granted for the public to further consult those that they are representing as well as the respective elders for any environmental concerns which might be present around the subject area to be planned.
- SPC and the Okahao Town Council granted an extension of time for any comments to be submitted from the initial closing date of Friday, 14 July 2023 to Monday, 31 July 2023.

5.1.1 Environmental Assessment Phase 2

The second phase of the PPP involves the lodging of the Draft Environmental Scoping Report (DESR) to all registered I&APs for comment. Registered and potential I&APs were informed of the availability of the DESR for public comment *via* a letter/email dated **09 February 2024**. An Executive Summary of the DESR was also included in the letters to the registered I&APs. I&APs had until **23 February 2024** to submit comments or raise any issues or concerns they may have with regard to the proposed project.

6 ASSESSMENT METHODOLOGY

The purpose of this chapter is to describe the assessment methodology utilized in determining the significance of the construction and operational impacts of the proposed project, and where applicable the possible 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 6**.

Table 6: 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

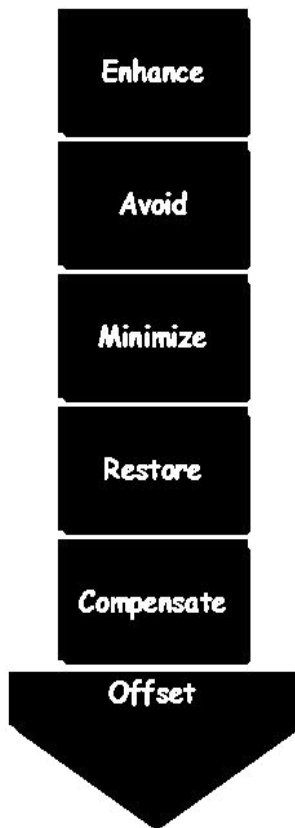
CRITERIA	CATEGORY
	<p>Low: Natural and/or social functions/processes are slightly altered</p> <p>Medium: Natural and/or social functions/processes are notably altered in a modified way</p> <p>High: Natural and/or social functions/processes are severely altered and may temporarily or permanently cease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

*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 EXTENT (spatial scale), MAGNITUDE (size or degree scale) and DURATION (time scale) are described. These criteria are used 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. The decision as to which combination of alternatives and mitigation measures to apply lies with the proponent, and their acceptance and approval ultimately with the relevant environmental authority.

The SIGNIFICANCE of an impact is derived by taking into account the temporal and spatial scales and magnitude. 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



There is a mitigation hierarchy of actions which can be undertaken to respond to any proposed project or activity (See **Figure 13** below). These cover avoidance, minimization, restoration and compensation. 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.

Figure 13: Mitigation Hierarchy

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

7.1 INTRODUCTION

This Chapter describes the potential impacts on the biophysical and socio-economic environments, which may occur due to the proposed activities described in Chapter 4. These include potential impacts, which may arise during the operation of the proposed development (i.e. long-term impacts) as well as the potential construction related impacts (i.e. short to medium term). The assessment of potential impacts will help to inform and confirm the selection of the preferred layouts to be submitted to MET: DEA for consideration. In turn, MET: DEA's decision on the environmental acceptability of the proposed project and the setting of conditions of authorisation (should the project be authorised) will be informed by this chapter, amongst other information, contained in this EA Report.

The baseline and potential impacts that could result from the proposed development are described and assessed with potential mitigation measures recommended. Finally, comment is provided on the potential cumulative impacts which could result should this development, and others like it in the area, be approved.

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 Flora and Fauna Impacts (Biodiversity)

Trees protected under the Forestry Act 12 of 2001 should be protected within the development. The trees located on the subject site should be accommodated in the layout and proposed use for the erf.

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.

7.2.2 Surface and Ground Water Impacts

Surface and groundwater impacts may be encountered during the construction and operation phase, especially if development takes place within the rainy season. The risk of contaminating such water sources can be increased by accidental spillage of oils and fuels and any other equipment used during construction. This risk is minimised by the fact that the construction phase will be a short-term activity.

7.2.3 Soil Erosion Impacts

Given the characteristics of the proposed site, soil erosion is likely to be encountered especially if construction will take place during the rainy season, the removal of vegetation will render the soil vulnerable to erosion as they also serve the purpose of keeping the soils compacted.

7.3 CONSTRUCTION PHASE IMPACTS ON THE SOCIO-ECONOMIC 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. Section 3.1.2 provides an overview of the archaeological and heritage context of the town and region.

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 so as to reduce the need to migrant workforce. Health and Safety requirements need to comply with the Labour Act no. 11 of 2007 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. A number of trucks and other heavy machinery will be required 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, 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.

7.3.5 Dust and Emission Impacts

Excavation and stockpiles during the construction phase could 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 Visual Impacts

The subject site is currently undeveloped as such there may thus be a change in visual characteristics of the site once it becomes developed particularly for those areas which are currently undeveloped. The extent of this disturbance will depend on how highly the interested and affected parties valued the initial aesthetic quality of the site.

7.4.2 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.

7.4.3 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.

7.4.4 Social Impacts

From a social perspective, the development will provide for the establishment of three new townships which will offer residents the opportunity to acquire residential property. Furthermore, the land uses provided for within the proposed townships will offer economic and tourism opportunities to local businesspeople in the town or from outside investors.

A small number of residents from Okahao could benefit from the development because of the potential job opportunities during construction as well as the increased development within the area. Furthermore, the community of Okahao are further expected to benefit from the "Business" zoned erven that will create employment opportunities for the locals. The significance of the social impact was therefore deemed to be **Medium (positive)**.

7.5 CUMULATIVE IMPACTS

The cumulative impact of the proposed developments in regard to the 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)** for the proposed developments.

7.1 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.

7.2 SUMMARY OF POTENTIAL IMPACTS

A summary of all the potential impacts from the proposed project assessed above is included in **Table 7**. The **Tables 8 – 9** provide a summary of the mitigation measures proposed for the impacts. While some difference in magnitude of the potential impacts would result from the proposed alternatives this difference was not considered to be significant for any of the potential impacts. As such, the table below applies to all proposed alternatives.

Table 7: 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
CONSTRUCTION PHASE										
1. Biodiversity (Fauna and Flora)	Okahao Uukwalumbe	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
2. Surface & ground water	Okahao Uukwalumbe	No mitigation	Local	Medium	Short term	Medium	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	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
3. Soil erosion	Okahao Uukwalumbe	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
4. Heritage	Okahao Uukwalumbe	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

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. Health, safety and security	Okahao Uukwalumbe	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
6. Traffic impacts	Okahao Uukwalumbe	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
7. Noise impacts	Okahao Uukwalumbe	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
8. Emissions impacts	Okahao Uukwalumbe	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
9. Municipal	Okahao	No	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
services	Uukwalumbe	mitigation								
		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
10. Waste	Okahao Uukwalumbe	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
11. Hazardous Substances	Okahao Uukwalumbe	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. Surface & ground water	Okahao Uukwalumbe	No mitigation	Local	Medium	Medium term	Medium	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Medium-Low	Medium term	Medium-Low	Probable	Certain	Reversible	Very-Low (-ve)
	No go	No mitigation	Local	Low	Medium term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Low	Medium	Neutral	Probable	Certain	Reversible	Neutral

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
					term					
2. Visual & sense of place	Okahao Uukwalumbe	No mitigation	Local	Medium	Medium term	Medium	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Medium-Low	Medium term	Medium-Low	Probable	Certain	Reversible	Medium-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. Noise	Okahao Uukwalumbe	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
4. Emissions	Okahao Uukwalumbe	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
5. Social impact	Okahao Uukwalumbe	No mitigation	Local	Medium	Long term	Low (+)	Probable	Probable	Reversible	Medium (+)
		Mitigation	Local	Medium	Long term	Low (+)	Probable	Probable	Reversible	Medium (+)

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
	No go	No mitigation	Local	Neutral	Long term	Neutral	Probable	Probable	Reversible	Neutral
		Mitigation	Local	Neutral	Long term	Neutral	Probable	Probable	Reversible	Neutral

Table 8: Proposed mitigation measures for the construction phase

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
Flora and Fauna	<ul style="list-style-type: none"> Adapt the proposed developments to the local environment – e.g. small adjustments to the site layout could avoid potential features such as water bodies and vegetation. Prevent the destruction of protected and endemic plant species. Prevent contractors from collecting wood, veld food, etc. during the construction phase. Do not clear cut the entire development site, but rather keep the few 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. Regular inspection of the marking tool should be carried out. Recommend the planting of local indigenous species of flora as part of the landscaping as these species would require less maintenance than exotic species. Transplant removed plants where possible, or plant new plants in lieu of those that have been removed. Prevent the introduction of potentially invasive alien ornamental plant species such as; <i>Lantana</i>, <i>Opuntia</i>, <i>Prosopis</i>, <i>Tecoma</i>, etc.; as part of the landscaping as these species could infest the area further over time.

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> Protected trees are not to be removed without a valid permit from the Ministry of Agriculture, Water and Forestry.
Surface and Ground Water Impacts	<ul style="list-style-type: none"> No dumping of waste products of any kind in or in close proximity to surface water bodies. Heavy construction vehicles should be kept out of any surface water bodies and the movement of construction vehicles should be limited where possible to the existing roads and tracks. Ensure that oil/ fuel spillages from construction vehicles and machinery are minimised and that where these occur, that they are appropriately dealt with. 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 the surface and ground water bodies. All materials on the construction site should be properly stored. Disposal of waste from the sites should be properly managed and taken to the designated landfill site. 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 these should be done at an area properly suited and prepared to receive and contain polluted waters.
Soil Erosion	<ul style="list-style-type: none"> 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 further erosion. 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.

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
Heritage	<ul style="list-style-type: none"> • The project management should be made aware of the provisions of the National Heritage Act regarding the prompt reporting of archaeological finds. • In the event of such finds, construction must stop, and the project management or contractors should notify the National Heritage Council of Namibia immediately.
Health, Safety and Security	<ul style="list-style-type: none"> • Construction personnel should not overnight at the site, except the security personnel. • 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. • Restrict unauthorised access to the site and implement access control measures. • Clearly demarcate the construction site boundaries along with signage of “no unauthorised access”. • 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	<ul style="list-style-type: none"> • 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 road worthy condition and maintained throughout the construction phase. • Transport the materials in the least number of trips as possible. • Adhere to the speed limit. • Implement traffic control measures where necessary.
Noise	<ul style="list-style-type: none"> • No amplified music should be allowed on site.

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> • Inform immediate neighbours of construction activities to commence prior to commencing and provide for continuous communication between the neighbours and contractor. • Limit construction times to acceptable daylight hours. • Install technology such as silencers on construction machinery. • Do not allow the use of horns as a general communication tool but use it only where necessary as a safety measure.
Dust and Emission	<ul style="list-style-type: none"> • It is recommended that dust suppressants such as Dustex be applied to all the construction clearing activities to ensure at least 50% control efficiency on all the unpaved roads and reduce water usage. • Construction vehicles to only use designated roads. • During high wind conditions the contractor must make the decision to cease works until the wind has calmed down. • Cover any stockpiles with plastic to minimise windblown dust. • Provide workers with dust masks where necessary.
Waste	<ul style="list-style-type: none"> • It is recommended that waste from the temporary toilets be disposed of at an approved Wastewater Treatment Works. • A sufficient number of waste bins should be placed around the site for the soft refuse. • A sufficient number of skip containers for the heavy waste and rubble should be provided for around the site. • Solid waste will be collected and disposed of at an appropriate local land fill or an alternative approved site, in consultation with the local authority.
Hazardous Substances	<ul style="list-style-type: none"> • Storage of the hazardous substances in a bunded area, with a volume of 120 % of the largest single storage container or 25 % of the total storage containers whichever is greater. • Refuel vehicles in designated areas that have a protective surface covering and utilise drip trays for

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	stationary plant.

Table 9: Proposed mitigation measures for the operational phase

OPERATIONAL PHASE IMPACTS	
Impact	Mitigation Measures
Surface and Ground Water	<ul style="list-style-type: none"> • A no-go buffer area of at least 15 m should be allocated to any water bodies in the area. • No dumping of waste products of any kind in or in close proximity to any surface water bodies. • Contaminated runoff from the various operational activities should be prevented from entering any surface or ground water bodies. • Ensure that surface water accumulating on-site are channeled and captured through a proper storm water management system to be treated in an appropriate manner before disposal into the environment. • Disposal of waste from the various activities should be properly managed.
Visual and Sense of Place	<ul style="list-style-type: none"> • It is recommended that more 'green' technologies be implemented within the architectural designs and building materials of the development where possible in order to minimise the visual prominence of such a development within the more natural surrounding landscape. • Natural colours and building materials such as wood and stone should be incorporated as well as the use of indigenous vegetation in order to help beautify the development. • Visual pollutants can further be prevented through mitigations (i.e. keep existing trees, introduce tall indigenous trees; keep structures unpainted and minimising large advertising billboards).
Noise	<ul style="list-style-type: none"> • Do not allow commercial activities that generate excessive noise levels. • Continuous monitoring of noise levels should be conducted to make sure the noise levels does not exceed acceptable limits. • No activity having a potential noise impact should be allowed after 18:00 hours if possible.

OPERATIONAL PHASE IMPACTS	
Impact	Mitigation Measures
Emissions	<ul style="list-style-type: none"> • Consider tarring of the internal road network. • Manage activities that generate emissions.
Social Impacts	No specific mitigation measures are required, only that the local community be consulted in terms of possible job creation opportunities and must be given first priority if unspecialised job vacancies are available.

8 CONCLUSION

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

8.1 CONSTRUCTION PHASE IMPACTS

With reference to **Table 8**, none of the negative construction phase impacts were deemed to have a high significance 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)**.

8.2 OPERATIONAL PHASE

With reference to **Table 9**, none of the negative operational phase impacts were deemed to have a high significance 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 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 MET: DEA 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.

8.4 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 further extremely important to include an Environmental Control Officer**

(ECO) 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 MET: DEA could be enforced as Conditions of Approval in the Environmental Authorisation, should MET: DEA issue a positive Environmental Authorisation.

8.5 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 subject erf will remain undeveloped. This would result in no additional residential erven being developed. If Erf 3108 is not subdivided it would have to be developed as a large Government zoned erf, which could result in the erf being underutilised.

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 an EMP should be included as a condition of approval.

8.6 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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