

Environmental Assessment Scoping Report for:

November 2021

*Township Establishment, Creation of
Street, and Installation of Bulk
Services on Portion 89 of the
Remainder of Ongwediva Town
and Townlands No 881, consisting
of 161 Erven and Remainder to be
known as Oidiva Extension 1*

MEFT APP - 003333

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PROJECT DETAILS

Title	Environmental Scoping Report for the: <ul style="list-style-type: none"> Township Establishment, Creation of Street, and Installation of Bulk Services on Portion 89 of the Remainder of Ongwediva Town and Townlands No 881, consisting of 161 Erven and Remainder to be known as Oidiva Extension 1. 		
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EXECUTIVE SUMMARY

Introduction

The Ongwediva Town Council (hereinafter known as the proponent) intends to formalise the existing area which is located to the east of Ongwediva Extensions 1 and 2 and within proximity of the Unam Engineering campus. The proponent thus intends to undertake the following activity:

- **Township Establishment, Creation of Street, and Installation of Bulk Services on Portion 89 of the Remainder of Ongwediva Town and Townlands No 881, consisting of 161 Erven and Remainder to be known as Oidiva Extension 1.**

The proposed township was initially referred to as Zola Proper and was thus referred to it as Zola Proper during the initial public participation. The Ongwediva Town Council at their Council Meeting dated 1 September 2021 resolved to change the name of the proposed township to Oidiva Extension 1. The layout remains unchanged.

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) which may not be undertaken without an Environmental Clearance Certificate (ECC).

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 (MEFT: DEA).

Project Description

The proponent intends to formalize the township Oidiva Extension 1 on Portion 89 of the Remainder of Ongwediva Town and Townlands No 881. The township is proposed to consist of 161 Erven and Remainder.

The area currently accommodates informal structures/homes and as such the proponent wishes to formalize the area to allow each structure to be located on an erf.

The following statutory steps need to be undertaken in order to establish the proposed township:

- Subdivision of the Remainder of the Farm Ongwediva Townlands No 881 into Portion 89 and Remainder (**Figure 8**);
- Township Establishment on Portion 89 of the Remainder of Ongwediva Town and Townlands No 881, consisting of 161 Erven and Remainder to be known as Oidiva Extension 1 (**Figure 9 and 10**).

The proposed township aims to provide mostly Single Residential erven supported by one Business zoned erf as depicted in **Figure 9**.

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 **15 March 2021**;
- Notices were placed in The New Era and The Sun newspapers dated **15 March 2021 and 25 March 2021**, briefly explaining the activity and its locality, inviting members of the public to register as I&APs (**Appendix B**);
- A notice was fixed at the project site (see **Appendix A**); and
- A public meeting was held on **28 March 2021** in Ongwediva (see **Appendix C**).

Public consultation was carried out according to the Environmental Management Act's EIA Regulations. After the initial notification, I&APs were given two weeks to submit their comments on the project (until **6 April 2021**).

The Draft Scoping Report was circulated from the **25 October 2021 until 8 November 2021** 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 8**, 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)**.

The most significant **Medium (positive)** impact is the social impact directly associated with the intended formalisation of the township which aims to offer residential opportunities for the residents in Ongwediva.

It is recommended that this project be authorised because should the development not proceed the subject area will remain unformalised. Potential job opportunities may be available to the local people of Ongwediva during construction. 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 an 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	Ongwediva 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 Ongwediva Town Council (hereinafter known as the proponent) intends to formalise the existing area which is located to the east of Ongwediva Extensions 1 and 2 and within proximity of the Unam Engineering campus. The proponent thus intends to undertake the following activity:

- **Township Establishment, Creation of Street, and Installation of Bulk Services on Portion 89 of the Remainder of Ongwediva Town and Townlands No 881, consisting of 161 Erven and Remainder to be known as Oidiva Extension 1.**

The proposed township was initially referred to as Zola Proper and was thus referred to it as Zola Proper during the initial public participation. The Ongwediva Town Council at their Council Meeting dated 1 September 2021 (**Annexure D**) resolved to change the name of the proposed township to Oidiva Extension 1. The layout remains unchanged.

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) which may not be undertaken without an Environmental Clearance Certificate (ECC).

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 roads.
Activity 10.2 (a) Infrastructure	The route determination of roads and design of associated physical infrastructure where –it is a public road	The proposed project includes the route determination of roads.

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

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 township Oidiva Extension 1 is located in the northeastern part of Ongwediva, to the south of Ongwediva Extension 10. Please refer to **Figure 1** below for the locality of the subject site.

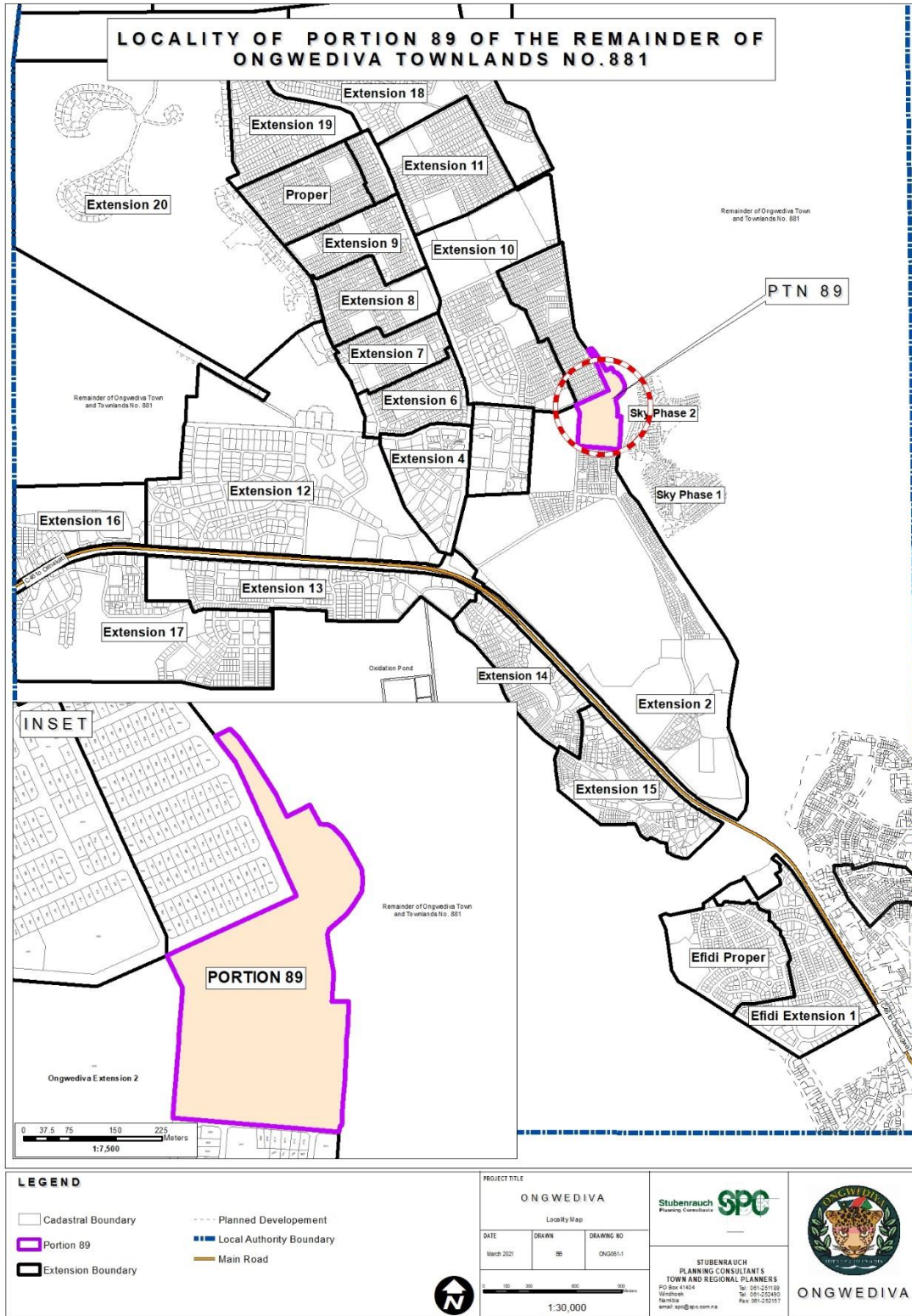


Figure 1: Locality of Portion 89 of the Remainder of Ongwediva Town and Townlands No 881

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:

- **Township Establishment, Creation of Street, and Installation of Bulk Services on Portion 89 of the Remainder of Ongwediva Town and Townlands No 881, consisting of 161 Erven and Remainder to be known as Oidiva Extension 1.**

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 Ongwediva 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	Refer to Chapter 3

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

Section	Description	Section of FESR/ Annexure
	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;	
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	<p>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.”</p> <p>Article 95(l) deals with the “maintenance of ecosystems, essential ecological processes and biological diversity” and sustainable use of the country’s natural resources.</p>	Sustainable development should be at the forefront of this development.
Environmental Management Act No. 7 of 2007 (EMA)	<p>Section 2 outlines the objective of the Act and the means to achieve that.</p> <p>Section 3 details the principle of Environmental Management</p>	The development should be informed by the EMA.
EIA Regulations GN 28, 29, and 30 of EMA (2012)	<p>GN 29 Identifies and lists certain activities that cannot be undertaken without an environmental clearance certificate.</p> <p>GN 30 provides the regulations governing the environmental assessment (EA) process.</p>	<p>The following listed activity was triggered by the proposed development:</p> <p>Activity 10.1 (a) Infrastructure Activity 10.1 (b) Infrastructure Activity 10.2 (a) Infrastructure</p>
Convention on Biological Diversity (1992)	Article 1 lists the conservation of biological diversity amongst the objectives of the convention.	The project should consider the impact it will have on the biodiversity of the area.
Draft Procedures and Guidelines for conducting EIAs and compiling EMPs (2008)	Part 1, Stage 8 of the guidelines states that if a proposal is likely to affect people, certain guidelines	The EA process should incorporate the aspects outlined in the guidelines.

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

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

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	<ul style="list-style-type: none"> Section 37.1 deals with Infringements and obstructions on and interference with proclaimed roads. 	
Public and Environmental Health Act of 2015	This Act (GG 5740) provides a framework for a structured uniform public and environmental health system in Namibia. It covers notification, prevention and control of diseases and sexually transmitted infections; maternal, ante-natal and neo-natal care; water and food supplies; infant nutrition; waste management; health nuisances; public and environmental health planning and reporting. It repeals the Public Health Act 36 of 1919 (SA GG 979).	Contractors and users of the proposed development are to comply with these legal requirements.
Nature Conservation Ordinance no. 4 of 1975	Chapter 6 provides for legislation regarding the protection of indigenous plants	Indigenous and protected plants must be managed within the legal confines.
Water Quality Guidelines for Drinking Water and Wastewater Treatment	Details specific quantities in terms of water quality determinants, which wastewater should be treated to before being discharged into the environment	These guidelines are to be applied when dealing with water and waste treatment.
Environmental Assessment Policy of Namibia (1995)	The Policy seeks to ensure that the environmental consequences of development projects and policies are considered, understood and incorporated into the planning process, and that the term ENVIRONMENT is broadly interpreted to include biophysical, social, economic, cultural,	This EIA considers this term of Environment.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	historical and political components.	
Water Resources Management Act No. 11 of 2013	Part 12 deals with the control and protection of groundwater Part 13 deals with water pollution control	The pollution of water resources should be avoided during construction and operation of the development. Should water need to be abstracted, a water abstraction permit will be required from the Ministry of Agriculture, Water and Land Reform.
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 Land Reform.
Atmospheric Pollution Prevention Ordinance No 45 of 1965	Part II - control of noxious or offensive gases, Part III - atmospheric pollution by smoke, Part IV - dust control, and Part V - air pollution by fumes emitted by vehicles.	The development should consider the provisions outlined in the act. The proponent should apply for an Air Emissions permit from the Ministry of Health and Social Services (if needed).

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

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

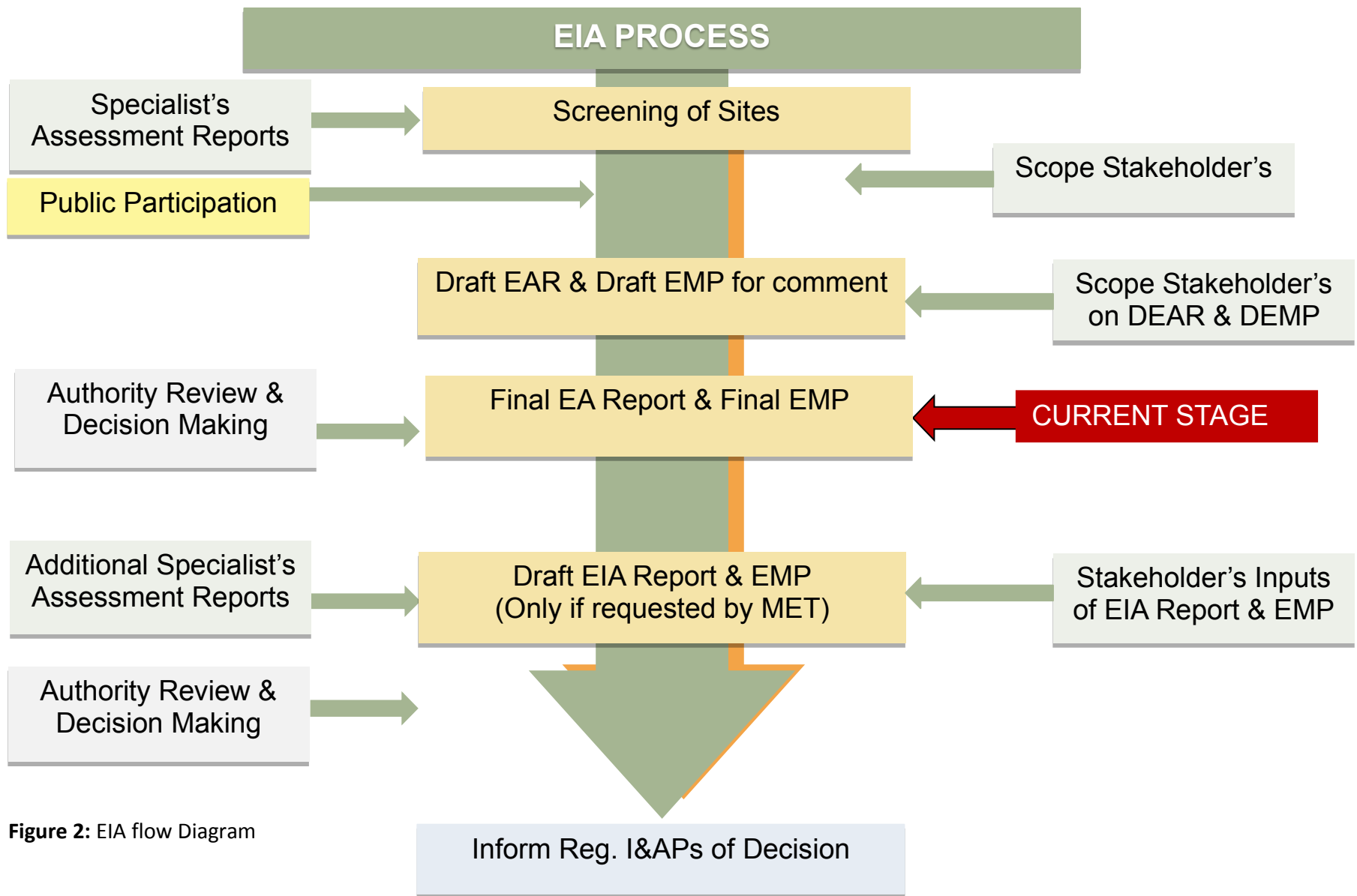


Figure 2: EIA flow Diagram

3 ENVIRONMENTAL BASELINE DESCRIPTION

3.1 SOCIAL ENVIRONMENT

3.1.1 Socio-Economic Context

The statistics shown in **Table 4** below are derived from the 2011 Namibia Population and Housing Census (Namibia Statistics Agency, 2011), and presented from a local and regional perspective.

Table 4: Statistics of the Ongwediva Constituency and Oshana Region (Namibia Statistics Agency, 2013)

ONGWEDIVA CONSTITUENCY	
ATTRIBUTE	INDICATOR
Population	34 065
Females	18 835
Males	15 230
Population under 5 years	12%
Population aged 5 to 14 years	21%
Population aged 15 to 59 years	60%
Population aged 60 years and above	7%
Female: male ratio	81:100
Literacy rate of 15 years old and above	97%
People above 15 years who have never attended school	6%
People above 15 years who are currently attending school	27%
People above 15 years who have left school	63%
People aged 15 years and above who belong to the labour force	58%
Population employed	69%
Homemakers	5%
Students	71%
Retired or old age income recipients	23%
Income from pension	15%
Income from business and non-farming activities	14%
Income from farming	14%
Income from cash remittance	3%
Wages and salaries	51%
Main Language	Oshiwambo Languages- 89%
OSHANA REGION	
ATTRIBUTE	INDICATOR
Population	176 674
Population aged 60 years and above	8%
Population aged 5 to 14 years	21%
Population aged 15 to 59 years	59%

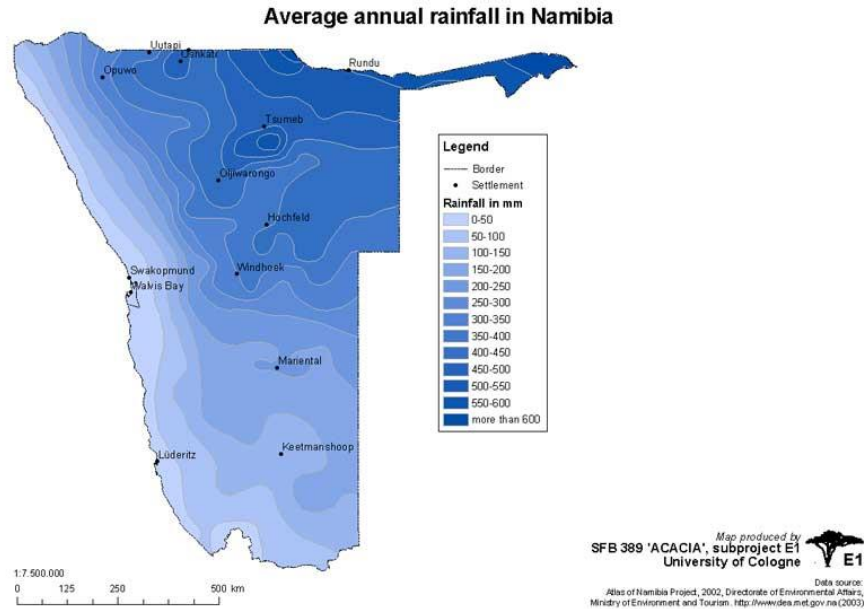


Figure 4: Average annual Rainfall (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/climate/rainfall-annual.jpg)

3.2.2 Topography, Geology and Soils

The Oshana Region forms part of the Kalahari Group Geological division depicted in pale yellow in **Figure 5** below. The dominant soils within the area are predominantly deep Kalahari and Namib sand that mostly occur in the formation of sands and other sedimentary materials, while the clay sodic sands dominate in the Oshanas (Mendelsohn et al., 2002).

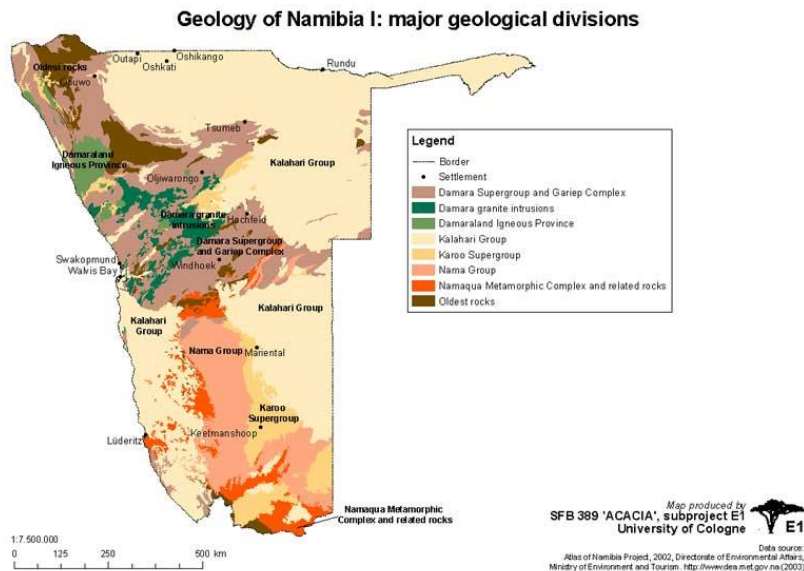


Figure 5: Geology of Namibia (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/physical/geology.jpg)

The subject area is characterised by mainly higher lying ground found within the central and western areas of the site. The eastern part however falling within an area which may be flooded during seasonal flood occurrences.

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, Oshana, Oshana, and Oshikoto Regions and parts of the Kunene Region (Ministry of Agriculture Water and Rural Development, 2011). The groundwater of the Cuvelai Basin is relatively shallow but mostly brackish or saline. All groundwater within the basin flows towards the Etosha Pan (Ministry of Agriculture Water and Rural Development, 2011).

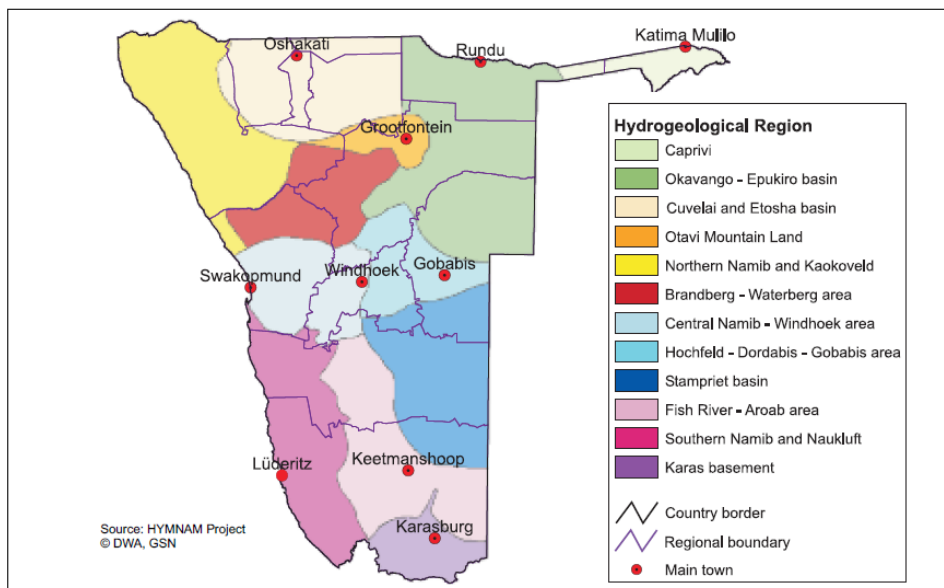


Figure 6: Groundwater basins and hydrogeological regions in Namibia

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 one of 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.

Most of the settlements within the Cuvelai basin experience flooding during the rainy season. Ongwediva is no exception, however the developed part of the town generally is not severely affected by these seasonal flood occurrences as it is developed on higher ground than the surrounding Oshana areas (Stubenrauch Planning Consultants, 2016). This however cannot be said for the extended Townlands which experiences greater flooding challenges (Lithon Project Consultants, 2016).

Lower lying areas within town coupled with increasing run-off during flood occurrences pose a challenge for stormwater management. As such it is essential that stormwater management systems be implemented within town. Flooding occurring in Ongwediva results mainly from local run-off that cannot drain away to the nearby *iishana* (Lithon Project Consultants, 2016).

The subject area generally drains from west to east into the sub-regional *iishana* network which passes through the Ongwediva Townlands. For the proposed development it is essential that the proponent put adequate flood prevention measures in place prior to the erven being alienated and transferred. Mitigation measures with regards to stormwater management and flooding which need to be implemented for the development are provided in the EMP.

3.3 TERRESTRIAL ECOLOGY

3.3.1 Flora and Fauna

The Oshana 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 region falls within the Cuvelai Drainage vegetation type. Within north-central Namibia, Mopane is a very common tree species in the Cuvelai Drainage where grassy channels of oshana carry floodwater during heavy rains from the higher areas in the north of Angola (Mendelsohn & el Obeid, 2005). The indigenous trees found within the region include the Makalani Palm Trees (*Hyphaene*

petersiana) and Mopane Trees (*Colophospermum mopane*). If removal of protected tree species is required a permit needs to be obtained from the Department of Forestry prior to removal. Trees protected under the Forestry Act 12 of 2001 should be protected within the layout of the proposed development.

Most wildlife is located within the Etosha National Park and thus it is mostly animals such as cattle, donkeys and goats which are dominant within the subject area.

The proposed development is located within the urban locality of Ongwediva as such the area has already been developed and can therefore not be considered to be pristine. The subject area accommodates informal structures which are intended to be formalized as such. Large trees are scattered throughout the site and should remain as part of the development.

4 PROJECT DESCRIPTION

4.1 PROJECT COMPONENTS

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

- **Township Establishment, Creation of Street, and Installation of Bulk Services on Portion 89 of the Remainder of Ongwediva Town and Townlands No 881, consisting of 161 Erven and Remainder to be known as Oidiva Extension 1.**

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

4.2 ALTERNATIVES

Due to the development being a formalisation of an existing situation no alternatives could be assessed for the development, except for the no-go alternative.

4.2.1 No – Go Alternative

The no-go alternative is the baseline against which all alternatives are assessed. The no-go alternative would essentially entail maintaining the current situation, whereby the existing site would remain unformalised and residents would not have the option of owning their piece of land. The proposed township would thus not be formalised, and the town would thus not be able to benefit from the proposed development.

4.3 THE PROPOSED DEVELOPMENT

The residential area proposed to be Oidiva Extension 1 is an established and well-structured residential neighbourhood which has not been formalised through the normal planning, survey, and registration process. The area currently accommodates informal structures/homes and as such the proponent wishes to formalize the area to allow each structure to be located on an erf.

The proponent intends to formalize the township Oidiva Extension 1 on Portion 89 of the Remainder of Ongwediva Town and Townlands No 881. The township is proposed to consist of 161 Erven and Remainder. The formalisation will result in the creation of 159 residential erven which range mostly between 300m² and 400m² in size. A number of larger residential properties are randomly located throughout the extension, these are included in the 159 residential erven.

One Business zoned erf is being formalised within the extension and is located on Erf 31. The street along this erf has wide street reserve (18.5 meters) while also being strategically positioned to serve the larger urban area.

Two erven are to be reserved as Street, access to the individual properties gained from the existing streets having street reserves ranging from 7 to 18.5 meters. The street network serves to drain local stormwater out of the neighbourhood into the sub-regional drainage channel forming part of the larger iishana system. The eastern fringe of the Ongwediva Urban area is however suitable for urban infill and formalisation also informed by the Ongwediva Integrated Spatial Development Framework Plan (ISDFP) as approved by the Town Council in 2016.

Due to the development being a formalisation of an existing situation no provision is made for Public Open Space zoned erven within the layout. Council has been advised to investigate the possibility of providing play parks or neighbourhood parks along the eastern boundary of the extension which is to be reclaimed by infill and excluded from the iishana drainage line and inundation area and subsequently included into Portion 89 as reserved for the development of Oidiva Extension 1. It should however be cautioned that this would require input from a professional engineer as care must be taken during infill and raising of ground level as that may result in a change in direction of water flow which in turn may result in a situation where urban areas previously not affected by inundation may become subject to inundation as a result of the raised land. Alternatively informal sport fields or parks can be created along the western embankments of the iishana system.

The following statutory steps need to be undertaken in order to establish the proposed township:

- Subdivision of the Remainder of the Farm Ongwediva Townlands No 881 into Portion 89 and Remainder (**Figure 8**);
- Township Establishment on Portion 89 of the Remainder of Ongwediva Town and Townlands No 881, consisting of 161 Erven and Remainder to be known as Oidiva Extension 1 (**Figure 9 and 10**).

The proposed township aims to provide mostly Single Residential erven supported by one Business zoned erf as depicted in **Figure 9**.

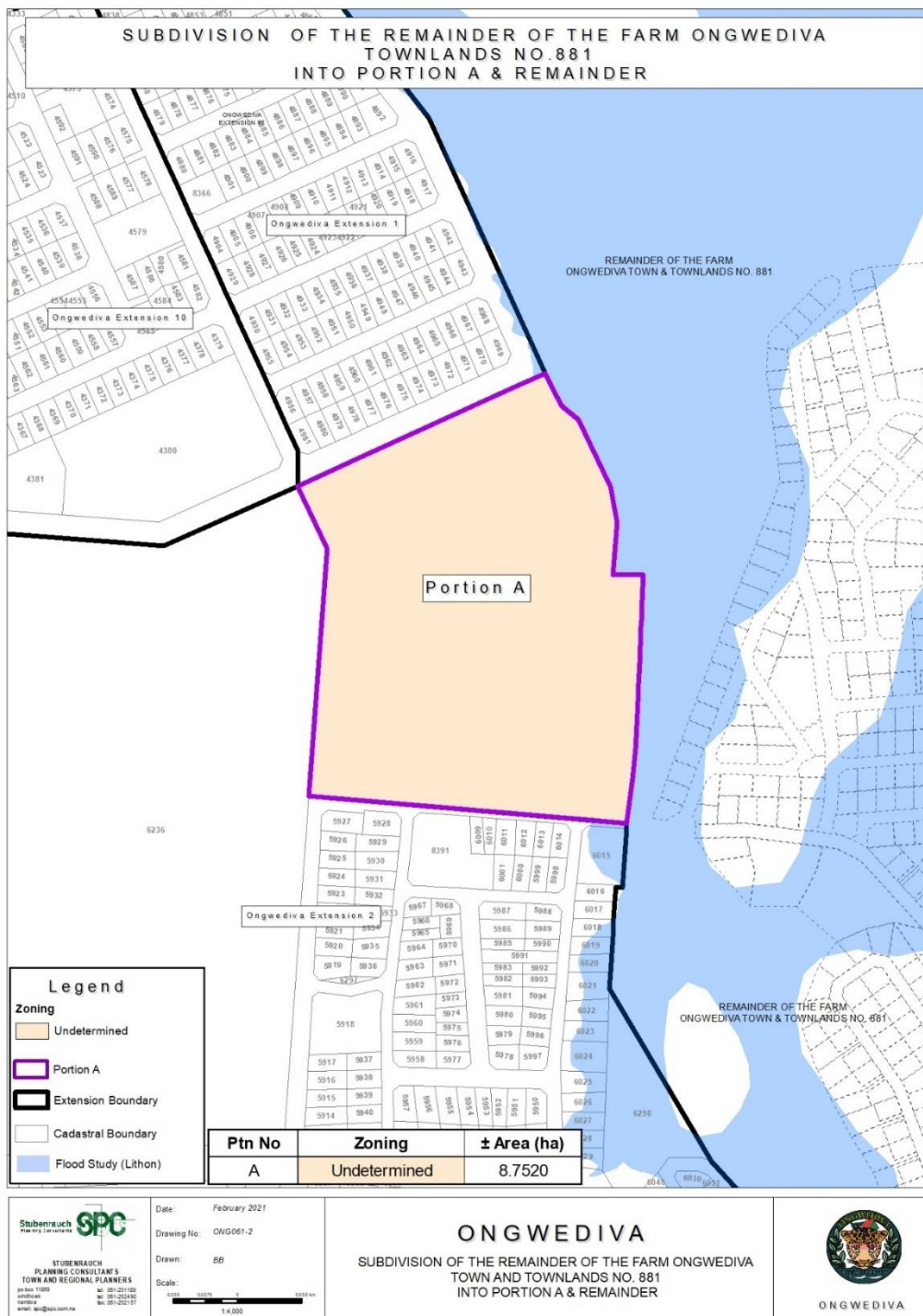


Figure 7: Subdivision of the Remainder of the Farm Ongwediva Townlands No 881 into Portion A and Remainder

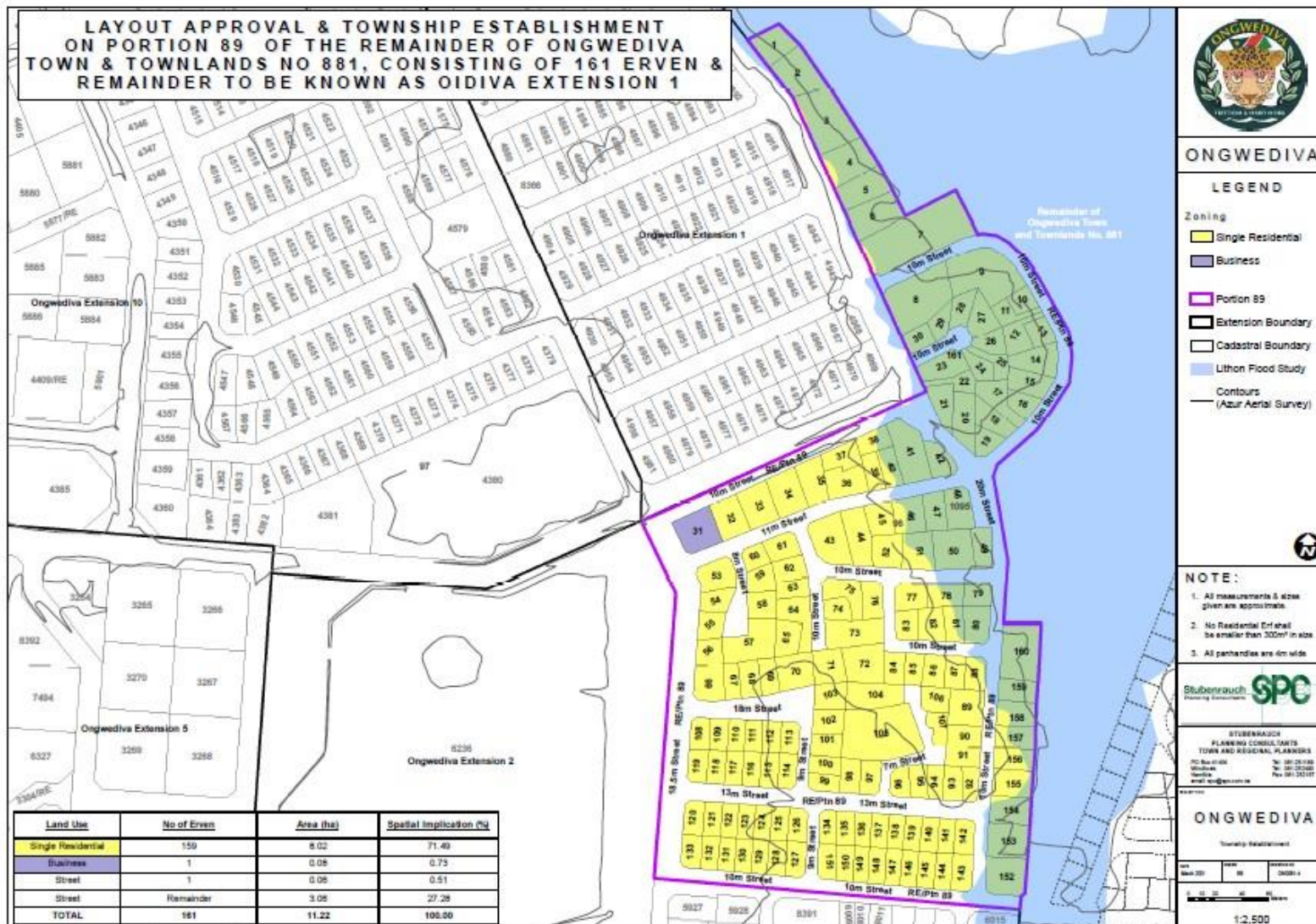


Figure 8: Layout of Proposed Oidiva Extension 1

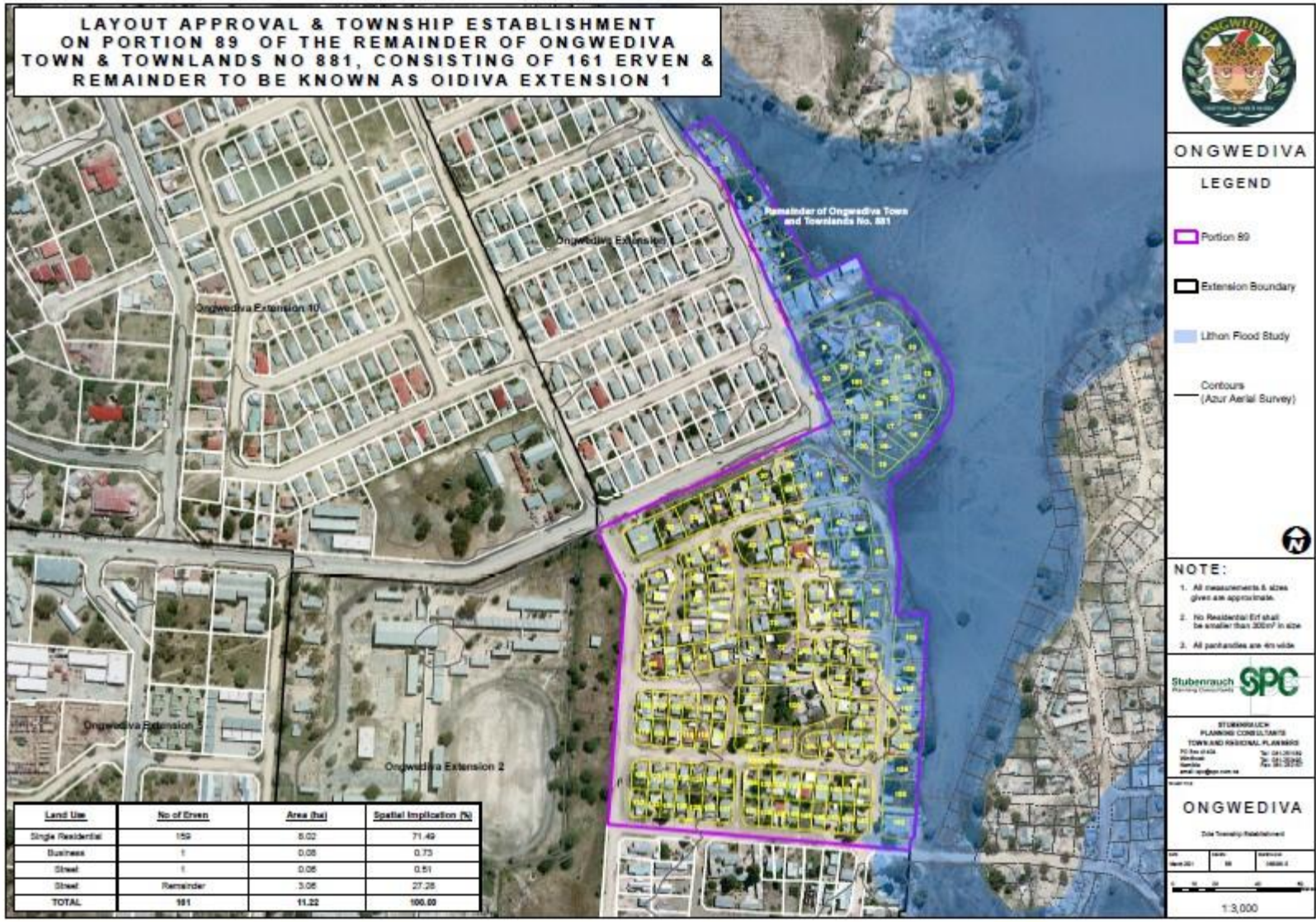


Figure 9: Aerial Map of the Proposed Oidiva Extension 1

The table below provides an overview of the land uses provided within Oidiva Extension 1.

Table 5: Land Use Summary Table for Oidiva Extension 1

Land Use	No of Erven	Area (Ha)	Spatial Implication (%)
Residential	159	8.02	71.49
Local Business	1	0.08	0.73
Street	1	0.06	0.51
Street	Remainder	3.06	27.28
Total	161	11.22	100.00

4.3.1 Engineering Services and Access Provision

The subject area is provided with rudimentary municipal service. Once the new township becomes proclaimed the Town Council is to upgrade the municipal services network to meet the requirements of the general municipal service standards of the local authority.

The proponent should appoint an engineer to investigate the capacity of the bulk service network to determine if the development can be connected to the bulk municipal infrastructure network, or if the existing network requires upgrading.

Access to the households is obtained from the informal but structured road system serving the area. The extension will be connected to the existing street/road network serving Ongwediva Extensions 1 and 2.

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 **15 March 2021 to 6 April 2021**.

Table 6: Table of Public Participation Activities

ACTIVITY	REMARKS
Placement of site notices/posters in Ongwediva	See Annexure A
Placing advertisements in two newspapers namely the New Era and The Sun (15 March 2021 and 25 March 2021)	See Annexure B
Written notice to surrounding property owners and Interested and Affected Parties via Email (15 March 2021)	See Annexure C
A public meeting held on 28 March 2021 at 10h00 at the Sam Nujoma Multi-Purpose Center Hall in Ongwediva	See Annexure C

The following comments were received during the public meeting:

- There are certain water catchment areas (ondobe) that normally has a lot of water and can affect surrounding properties.
- It was reported that there is a channel that brings water to oshana which also affects properties when it becomes full.
- There is a manhole around the area of Michelin Bar that always overflows. Council informed the participants that they are aware of the situation and that they are working on the matter.

5.1.1 Environmental Assessment Phase 2

The second phase of the PPP involved 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 **25 October 2021**. An Executive Summary of the DESR was also included in the letters to the registered I&APs. I&APs had until **8 November 2021** 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 7**.

Table 7: Impact Assessment Criteria

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

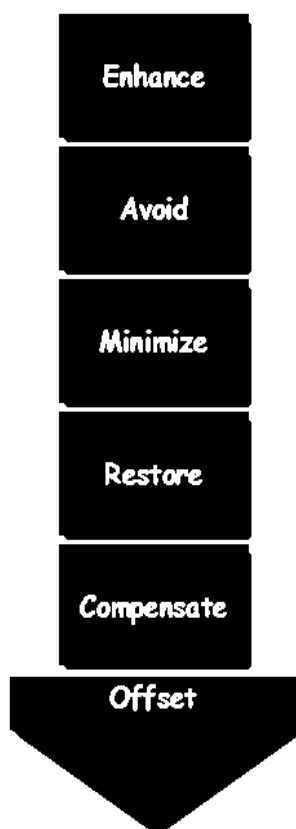
CRITERIA	CATEGORY
	<p>Low: Natural and/or social functions/processes are slightly altered</p> <p>Medium: Natural and/or social functions/processes are notably altered in a modified way</p> <p>High: Natural and/or social functions/processes are severely altered and may temporarily or permanently cease</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 10** 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 10: 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 MEFT: DEA for consideration. In turn, MEFT: 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.

7.1 PLANNING AND DESIGN PHASE IMPACTS

7.1.1 Stormwater Management and Flooding

A portion of the subject site is located within an area that experiences seasonal flooding during periods of rain. For the proposed development it is essential that the proponent put adequate flood prevention measures in place prior to the erven being alienated and transferred. Stormwater management on site will ensure that the impacts of flooding are reduced on site. Stormwater should be channelled into the designated water drainage system.

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)

There are a few scattered trees located on the subject erf which are mainly located within existing erven. The trees located on the subject site are thus mostly accommodated in the proposed use for the erf. Trees protected under the Forestry Act 12 of 2001 should be protected within the development and may not be removed without a permit from the Department of Forestry.

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.

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 to reduce the need for migrant workforce. Health and Safety requirements need to comply with the Labour Act No. 11 of 2007, local and international health and safety legislation and standards during construction.

7.3.3 Traffic Impacts

Traffic can be expected to increase slightly during the construction phase 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, but it will also impact on the roads in the area.

7.3.4 Noise Impacts

Construction may result in associated noise impacts. These noise impacts will mainly be associated with construction machinery and construction vehicles. The impact is however limited mainly to the construction period only.

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. As such the mitigation measures outlined in the EMP are to be adhered to minimise these impacts.

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.

7.3.8 Waste Impacts

During construction waste may be generated on site. Waste generated during construction must be disposed of at the nearest approved landfill site.

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. A general overview of potential impacts will be discussed.

7.4.1 Social Impacts

From a social perspective, once the area is formalised each household will be located on a separate erf which they could potentially purchase and own in future. Furthermore, during construction temporary jobs may be created for the construction phase of the development. This impact is expected to be positive and medium in significance.

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 8**. The **Tables 9 – 11** provide a summary of the mitigation measures proposed for the impacts. While some difference in magnitude of the potential impacts would result from the 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 8: Summary of the significance of the potential impacts

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
PLANNING AND DESIGN PHASE										
1. Stormwater and Flooding	Oidiva Extension 1	No mitigation	Local	Medium-Low	Short term	Medium	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
CONSTRUCTION PHASE										
2. Biodiversity (Fauna and Flora)	Oidiva Extension 1	No mitigation	Local	Medium-Low	Short term	Low	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Low	Short term	Very Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
3. Surface & ground water	Oidiva Extension 1	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
4. Soil erosion	Oidiva Extension 1	No mitigation	Local	Medium	Short term	Medium - low	Probable	Certain	Reversible	Medium - low (-ve)
		Mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
5. Heritage	Oidiva Extension 1	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
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
6. Health, safety and security	Oidiva Extension 1	No mitigation	Local	Medium-Low	Short term	Medium-Low	Probable	Certain	Reversible	Medium-Low (-ve)
		Mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
7. Traffic impacts	Oidiva Extension 1	No mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Very low	Short term	Very low	Probable	Certain	Reversible	Very low
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
8. Noise impacts	Oidiva Extension 1	No mitigation	Local	Medium	Short term	Medium - low	Probable	Certain	Reversible	Medium - Low (-ve)
		Mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Very low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
9. Emissions impacts	Odiva Extension 1	No mitigation	Local	Medium	Short term	Low	Probable	Certain	Reversible	Medium - Low (-ve)
		Mitigation	Local	Low	Short term	Very Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
10. Municipal services	Odiva Extension 1	No mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Very low	Short term	Very low	Probable	Certain	Reversible	Very low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
11. Waste	Odiva Extension 1	No mitigation	Local	Low	Short term	Medium	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Very low	Short term	Low	Probable	Certain	Reversible	Very low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
12. Hazardous Substances	Odiva Extension 1	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

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
1. Surface & ground water	Oidiva Extension 1	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 term	Neutral	Probable	Certain	Reversible	Neutral
2. Social impact	Oidiva Extension 1	No mitigation	Local	Medium	Long term	Medium (+)	Probable	Probable	Reversible	Medium (+)
		Mitigation	Local	Medium	Long term	Medium (+)	Probable	Probable	Reversible	Medium (+)
	No go	No mitigation	Local	Neutral	Long term	Neutral	Probable	Probable	Reversible	Neutral
		Mitigation	Local	Neutral	Long term	Neutral	Probable	Probable	Reversible	Neutral

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

PLANNING AND DESIGN PHASE IMPACTS	
Impact	Mitigation Measures
Stormwater Management and Flooding	<ul style="list-style-type: none"> • Incorporate the local depressions and areas inundated by flood waters into open spaces. • Do not construct structures within the flood prone areas which blocks off the natural flow of water. • Appoint professional engineers to develop a detailed storm water management design as part of the infrastructure service provision of the developments.

Table 10: Proposed mitigation measures for the construction phase

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
Flora and Fauna	<ul style="list-style-type: none"> • 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. • Regular inspection of the marking tool should be carried out. • The very important plants should be “camped off” to prevent the unintended removal or damage to these trees. • 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.

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> • 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.
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"> • Appropriate erosion control structures must be put in place where soil may be prone to erosion. • Checks must be carried out at regular intervals to identify areas where erosion is occurring. • Appropriate remedial actions are to be undertaken wherever erosion is evident.
Heritage	

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	<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. • A wellness program should be initiated to raise awareness on health issues, especially the impact of sexually transmitted diseases as described above. • Provide free condoms in the workplace and to local community throughout the construction period and promote their usage. • Facilitate access to Antiretroviral (ARV) medication. • Encourage HIV counselling and testing. • Encourage Voluntary Medical Male Circumcision (VMMC). • Provide awareness on the prevention of mother to child HIV Transmission. • 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.

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
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. • Inform immediate neighbours of construction activities to commence 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.

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
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 stationary plant.

Table 11: 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.
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 DESR 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 significant impact on the environment. The construction impacts were assessed to a **Medium to Low (negative)** significance, without mitigation measures. With the implementation of the recommended mitigation measures in Chapter 7 as well as in the EMP, the significance of the construction phase impacts is likely to be reduced to a **Low (negative)**.

8.2 OPERATIONAL PHASE

The most significant **Medium (positive)** impact is the social impact directly associated with the intended formalisation of the township which aims to offer formal residential opportunities for the residents in Ongwediva.

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 MEFT: 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 MEFT: DEA could be enforced as Conditions of Approval in the Environmental Authorisation, should MEFT: 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 area will remain unformalised. Potential job opportunities may be available to the local people of Ongwediva during construction. 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 an EMP should be included as a condition of approval.

8.6 WAY FORWARD

The FESR is herewith submitted to MEFT: DEA for consideration and decision making. If MEFT: DEA 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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