

Environmental Assessment Scoping Report for:

March 2022

*Township Establishment, creation of street
and installation of bulk services for
Omdel Extensions 8 and 10, Henties
Bay, Erongo Region.*

APP-003633

Prepared for: Henties Bay Municipality

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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 for Omdel Extensions 8 and 10, Henties Bay, Erongo Region 		
Report Status	Final		
SPC Reference	HEN/004		
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EXECUTIVE SUMMARY

Introduction

The Henties Bay Municipality hereinafter referred to as the proponent intends to undertake the following activities:

- **Layout approval and township establishment on Portion 92 of the Remainder of Farm Hentiesbaai Townlands No. 133 to become known as Omdel Extension 8;**
- **Subdivision of the Remainder of Farm Hentiesbaai Townlands No 133 into Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 and the Remainder Farm Hentiesbaai Townlands No 133;**
- **Layout approval and township establishment on Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 to become known as Omdel Extension 10;**
- **Inclusion of Omdel Extensions 8 and 10 in the next 5 year revision scheme prepared for Henties Bay.**

The proposed township to be established on Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 was initially referred to as Omdel Extension 9. However it has come to the attention of the Henties Bay Municipality that the extension number had already been reserved as such the extension number is to be amended to Omdel Extension 10. 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).

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 Henties Bay urban areas are experiencing an increasing number of informal developments taking place as households are migrating to urban areas in seek of employment, access to basic municipal services as well as access to Government services and facilities or employment within the developing private sector.

As a result of the accelerated in-migration Henties Bay, as one of the urban growth nodes in the Erongo Region, continues to experience an accelerated demand for serviced land to be made available to the private and public sectors.

The creation of Omdel Extension 8 and 10 is considered to be desirable as the extensions will be:

- a) A pro-active step in terms of enforcing development control on the relatively undeveloped areas along the 30 meter wide road east of the existing Omdel Extension 7, where easy

access onto the collector road is considered to be an opportunity for informal development initiatives unsanctioned.

- b) In support of facilitating and promoting the decongestion of Omdel 6 Quasi.
- c) Provides opportunities for the development of commercial, SME and start-up enterprises, institutional and residential offerings.
- d) Facilitates land ownership by making serviced erven available under Freehold Title ownership.

Namibia continues to experience an acute shortage of affordable housing, a situation that has reached a socio-economic crisis and hence warrants an extra-ordinary public policy response. Therefore the 408 erven in total for both extensions are an opportunity to address housing shortage in Henties Bay. As these properties are to be made available under the Freehold Title ownership system, property ownership and opportunity to access funding from financial institutions are considered to be a socio-economic benefit for the beneficiaries while the local authority will widen the asset and tax base of the town.

The following statutory steps need to be undertaken as part of the proposed development:

- **Layout approval and township establishment on Portion 92 of the Remainder of Farm Hentiesbaai Townlands No. 133 to become known as Omdel Extension 8;**
- **Subdivision of the Remainder of Farm Hentiesbaai Townlands No 133 into Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 and the Remainder Farm Hentiesbaai Townlands No 133;**
- **Layout approval and township establishment on Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 to become known as Omdel Extension 10;**
- **Inclusion of Omdel Extensions 8 and 10 in the next 5 year revision scheme prepared for Henties Bay.**

Omdel Extension 8 is to be established on Portion 92 of the Farm Hentiesbaai Townlands No 133 which was previously created and earmarked for the development of a sport stadium. The proponent resolved to rather use Portion 92 to meet the demand for serviced and affordable residential properties. The table below provides a breakdown of the erven to be established within the proposed township.

Zoning	No of Erven	± Total Area(ha)	% of Total Area
Single Residential	204	6.63	53.18
Local Authority	1	0.20	1.60
Parastatal	1	0.03	0.22
Public Open Space	6	1.29	10.35
Street	Remainder	4.32	34.65
TOTAL	212 & Remainder	12.47	100.00

It is the intention of the proponent to subdivide the Remainder of Farm Hentiesbaai Townlands No 133 into Portion A/133 and the Remainder of the Farm Hentiesbaai Townlands No 133. The proposed subdivision is to enable the Henties Bay Municipality to establish a new township to be known as Omdel Extension 10. The proposed Omdel Extension 10 provides predominantly residential erven. A total of 204 residential erven are provided in this extension. The table below provides a breakdown of the erven to be established within the proposed township.

Zoning	No of Erven	± Total Area(ha)	% of Total Area
Single Residential	204	6.88	53.92
Business	1	0.17	1.36
Parastatal	1	0.01	0.09
Institutional	1	0.18	1.41
Local Authority	1	0.20	1.60
Public Open Space	7	1.28	10.03
Street	Remainder	4.03	31.58
TOTAL	215 & Remainder	12.76	100.00

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 **1 November 2021**;
- Notices were placed in Namibian and the New Era newspapers dated **5 November 2021 and 10 November 2021**, 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**);
- A public meeting was held in Henties Bay on 11 November 2021 (**Appendix C**).

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 **26 November 2021**).

The Draft Scoping Report was circulated from **4 February 2022 until 18 February 2022** 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 10**, 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 10**, 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 undeveloped. The local community is expected to benefit from the development as a result of the potential job opportunities during construction as well as the increased development within the area. Furthermore, the community of Henties Bay is further expected to benefit from the new townships which will make available much needed low-cost residential erven. 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.

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	PROJECT BACKGROUND	1
1.2	PROJECT LOCATION	2
1.3	TERMS OF REFERENCE AND SCOPE OF PROJECT	5
1.4	ASSUMPTIONS AND LIMITATIONS	5
1.5	CONTENT OF ENVIRONMENTAL ASSESSMENT REPORT	5
2	LEGAL FRAMEWORK	8
2.1	LEGISLATION RELEVANT TO THE PROPOSED DEVELOPMENT	8
3	ENVIRONMENTAL BASELINE DESCRIPTION	15
3.1	SOCIAL ENVIRONMENT	15
3.1.1	Socio-Economic Context	15
3.1.2	Archaeological and Heritage Context	16
3.2	BIO-PHYSICAL ENVIRONMENT	16
3.2.1	Climate	16
3.2.2	Topography, Geology and Soils	17
3.2.3	Hydrology and Hydrogeology	18
3.3	TERRESTRIAL ECOLOGY	19
3.3.1	Flora and Fauna	19
4	PROJECT DESCRIPTION	21
4.1	PROJECT COMPONENTS	21
4.2	ALTERNATIVES	21
4.2.1	No – Go Alternative	21
4.3	THE PROPOSED DEVELOPMENT	21
4.3.1	Proposed Subdivision	23
4.3.2	The layout of Omdel Extension 8	23
4.3.3	The layout of Omdel Extension 10	27
4.3.4	Engineering Services and Access Provision	31
5	PUBLIC PARTICIPATION PROCESS	33
5.1	PUBLIC PARTICIPATION REQUIREMENTS	33
5.1.1	Environmental Assessment Phase 2	33
6	ASSESSMENT METHODOLOGY	34
6.1	MITIGATION MEASURES	36
7	ASSESSMENT OF POTENTIAL IMPACTS AND POSSIBLE MITIGATION MEASURES	38
7.1	INTRODUCTION	38
7.2	PLANNING AND DESIGN PHASE IMPACTS	38
7.2.1	Traffic Impacts	38

7.2.2	Existing Service Infrastructure Impacts.....	38
7.3	CONSTRUCTION PHASE IMPACTS ON THE BIOPHYSICAL ENVIRONMENT	39
7.3.1	Flora and Fauna Impacts (Biodiversity)	39
7.3.2	Surface and Ground Water Impacts.....	39
7.3.3	Soil Erosion Impacts	39
7.4	CONSTRUCTION PHASE IMPACTS ON THE SOCIO-ECONOMIC ENVIRONMENT.....	39
7.4.1	Heritage impacts	39
7.4.2	Health, Safety and Security Impacts	39
7.4.3	Traffic Impacts.....	40
7.4.4	Noise Impacts.....	40
7.4.5	Dust and Emission Impacts.....	40
7.4.6	Municipal Services	40
7.4.7	Storage and Utilisation of Hazardous Substances.....	41
7.5	OPERATIONAL PHASE IMPACTS.....	41
7.5.1	Visual and Sense of Place Impacts.....	41
7.5.2	Noise Impacts.....	41
7.5.3	Emission Impacts	41
7.5.4	Waste Impacts.....	41
7.5.5	Social Impacts	42
7.6	CUMULATIVE IMPACTS.....	42
7.1	ENVIRONMENTAL MANAGEMENT PLAN.....	42
7.2	SUMMARY OF POTENTIAL IMPACTS	42
8	CONCLUSION.....	54
8.1	CONSTRUCTION PHASE IMPACTS	54
8.2	OPERATIONAL PHASE	54
8.3	LEVEL OF CONFIDENCE IN ASSESSMENT.....	54
8.4	MITIGATION MEASURES	54
8.5	OPINION WITH RESPECT TO THE ENVIRONMENTAL AUTHORISATION	55
8.6	WAY FORWARD	55
9	REFERENCES.....	56

LIST OF FIGURES

Figure 1: Locality of Portion 92 of the Remainder of the Farm Hentiesbaai Townlands No 133	3
Figure 2: Locality of Portion A of the Remainder of the Farm Hentiesbaai Townlands No 133.....	4
Figure 3: EIA flow Diagram.....	14
Figure 4: Annual average temperature.....	16
Figure 5: Average annual Rainfall	17
Figure 6: Geology of Namibia.....	18
Figure 7: Hydrography of Namibia: Rivers, basins, pans and lakes	19
Figure 8: Biomes of Namibia	20
Figure 9: Township Establishment of Omdel Extension 8.....	25
Figure 10: Aerial Map of proposed Omdel Extension 8.....	26
Figure 11: Proposed Township Establishment of Omdel Extension 10	29
Figure 12: Aerial Map of Proposed Township Establishment of Omdel Extension 10	30
Figure 13: Mitigation Hierarchy	36

LIST OF TABLES

Table 1: List of triggered activities identified in the EIA Regulations which apply to the proposed project.....	1
Table 2: Contents of the Scoping / Environmental Assessment Report.....	5
Table 3: Legislation applicable to the proposed development.....	8
Table 4: Statistics of the Arandis Constituency and Erongo Region (Namibia Statistics Agency, 2013)	15
Table 5: Subdivision of the Remainder of Farm Hentiesbaai Townlands No 133.....	23
Table 6: Overview of the land uses for the proposed Omdel Extension 8	24
Table 7: Overview of the land uses for the proposed Omdel Extension 10	27
Table 8: Table of Public Participation Activities.....	33
Table 9: Impact Assessment Criteria.....	34
Table 10: Summary of the significance of the potential impacts	43
Table 11: Proposed mitigation measures for the planning and design phase	48
Table 12: Proposed mitigation measures for the construction phase	48
Table 13: Proposed mitigation measures for the operational phase	52

LIST OF ANNEXURES

Annexure A:	Proof of Site Notices/ Posters
Annexure B:	Proof of Advertisements
Annexure C:	Public Participation process I&AP Database & Registered List Notification Letters and Emails sent of BID Public Meeting Presentation Public Meeting Attendance Register Notification Letters and Emails sent of DESR Comments Received (if any)
Annexure D:	Curriculum Vitae and ID of Environmental Assessment Practitioner
Annexure E:	Consent Letter from Henties Bay Municipality

Annexure F: Environmental Management Plan

LIST OF ACRONYMS

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

1 INTRODUCTION

1.1 PROJECT BACKGROUND

The Henties Bay Municipality hereinafter referred to as the proponent intends to undertake the following activities:

- **Layout approval and township establishment on Portion 92 of the Remainder of Farm Hentiesbaai Townlands No. 133 to become known as Omdel Extension 8;**
- **Subdivision of the Remainder of Farm Hentiesbaai Townlands No 133 into Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 and the Remainder Farm Hentiesbaai Townlands No 133;**
- **Layout approval and township establishment on Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 to become known as Omdel Extension 10;**
- **Inclusion of Omdel Extensions 8 and 10 in the next 5 year revision scheme prepared for Henties Bay.**

The proposed township to be established on Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 was initially referred to as Omdel Extension 9. However it has come to the attention of the Henties Bay Municipality that the extension number had already been reserved as such the extension number is to be amended to Omdel Extension 10. The layout remains unchanged.

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 description and No(s):	Description of relevant Activity	The portion of the development as per the project description that relates to the applicable listed activity
Activity 10.1 (b) Infrastructure	The construction of Public roads	The proposed project includes the construction of 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

Portion 92 of the Remainder of Farm Hentiesbaai Townlands No 133 and the proposed Portion A/133 of the Remainder of the Farm Hentiesbaai Townlands No. 133 are located East of Omdel Extension 7 and the MR0044 (C34) Roads Authority Road. Please refer to below locality maps (**Figure 1 and 2**).

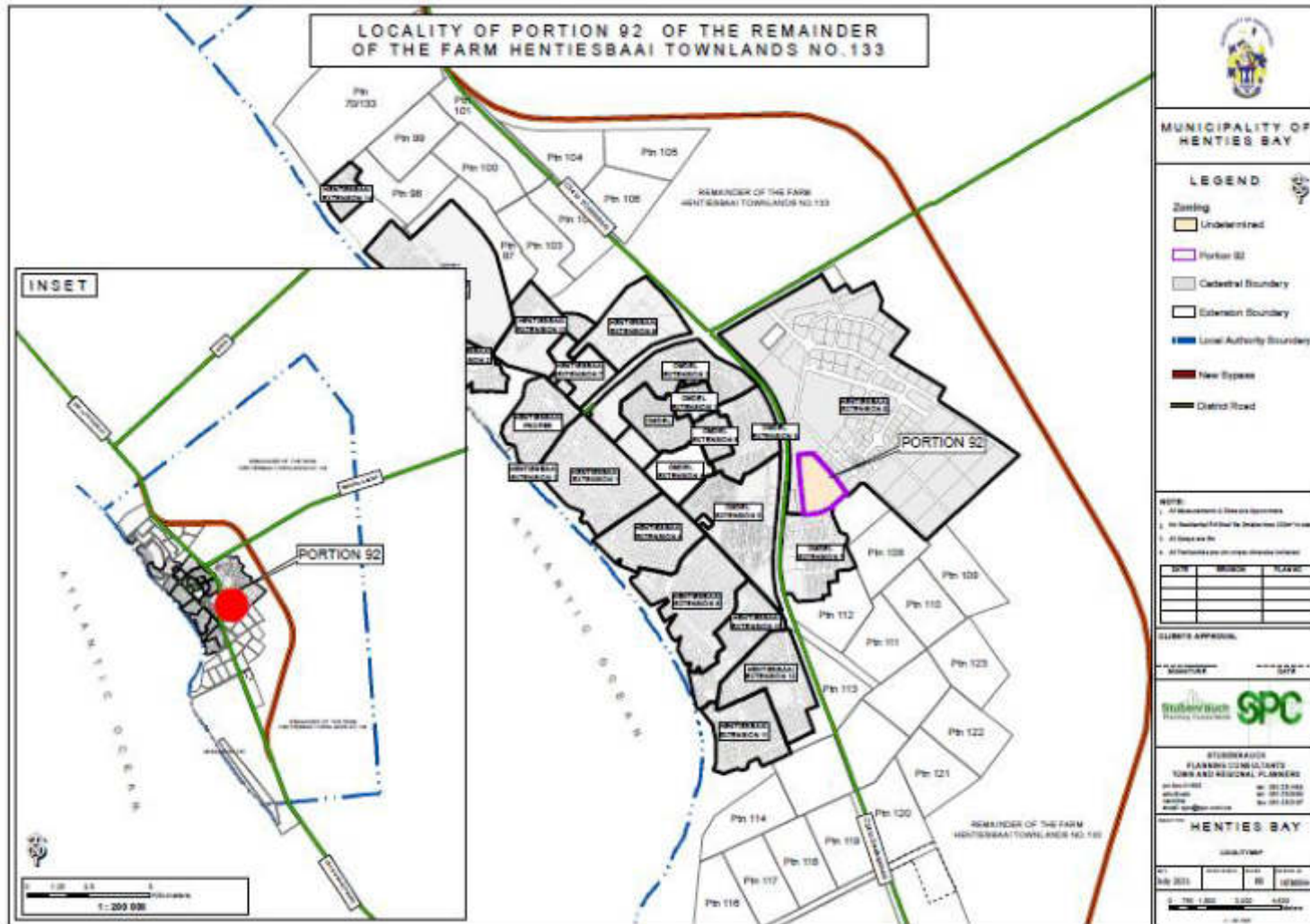
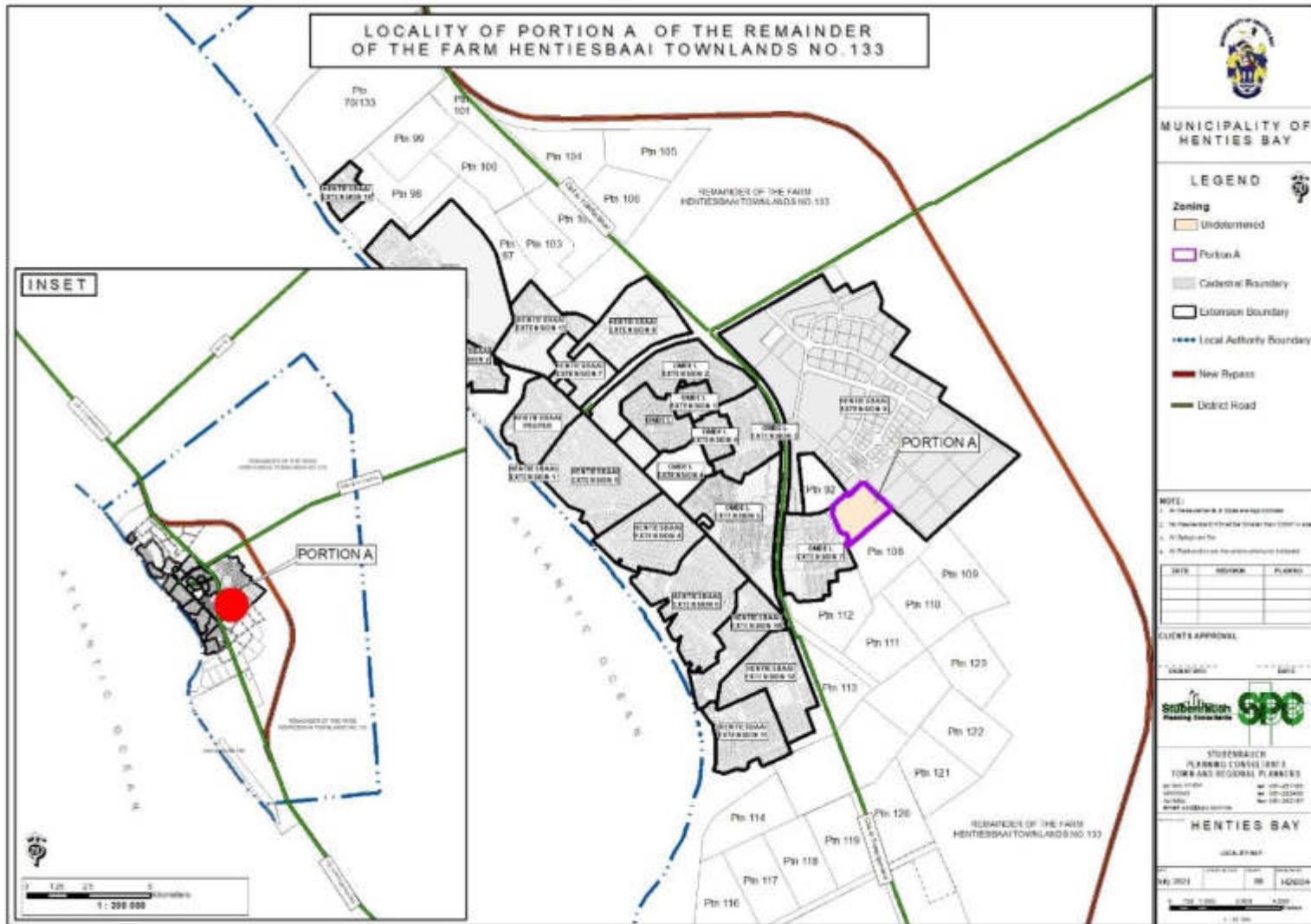


Figure 1: Locality of Portion 92 of the Remainder of the Farm Hentiesbaai Townlands No 133



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:

- **Layout approval and township establishment on Portion 92 of the Remainder of Farm Hentiesbaai Townlands No. 133 to become known as Omdel Extension 8;**
- **Subdivision of the Remainder of Farm Hentiesbaai Townlands No 133 into Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 and the Remainder Farm Hentiesbaai Townlands No 133;**
- **Layout approval and township establishment on Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 to become known as Omdel Extension 10;**
- **Inclusion of Omdel Extensions 8 and 10 in the next 5 year revision scheme prepared for Henties Bay.**

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 Henties Bay 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 DESR/ Annexure
8 (a)	The curriculum vitae of the EAPs who prepared the report;	Refer to Annexure D
8 (b)	A description of the proposed activity;	Refer to Chapter 4

Section	Description	Section of DESR/ Annexure
8 (c)	A description of the site on which the activity is to be undertaken and the location of the activity on the site;	Refer to Chapter 3
8 (d)	A description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed listed activity;	Refer to Chapter 3
8 (e)	An identification of laws and guidelines that have been considered in the preparation of the scoping report;	Refer to Chapter 2
8 (f)	Details of the public consultation process conducted in terms of regulation 7(1) in connection with the application, including	Refer to Chapter 5
	(i) the steps that were taken to notify potentially interested and affected parties of the proposed application	Refer to Chapter 5
	(ii) proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given;	Refer to Annexures A and B for site notices and advertisements respectively.
	(iii) a list of all persons, organisations and organs of state that were registered in terms of regulation 22 as interested and affected parties in relation to the application;	Refer to Annexure C
	(iv) a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues;	Refer to Annexure C
8 (g)	A description of the need and desirability of the proposed listed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages	Refer to Chapter 4

Section	Description	Section of DESR/ Annexure
	that the proposed activity or alternatives have on the environment and on the community that may be affected by the activity;	
8 (h)	A description and assessment of the significance of any 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.	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.
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 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,	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
	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 • 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	Contractors and users of the proposed development are to comply with these legal requirements.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	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).	
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 (see Appendix B).	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, historical and political components.	This EIA considers this term of Environment.
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	Protected tree and plant species as per the Forest Act No 12 of 2001 and Forest Regulations of 2015 may

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	<p>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.</p>	<p>not be removed without a permit from the Ministry of Agriculture, Water and Forestry.</p>
<p>Atmospheric Pollution Prevention Ordinance No 45 of 1965</p>	<p>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.</p>	<p>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).</p>

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 3** below) provides an outline of the EIA process to be followed.

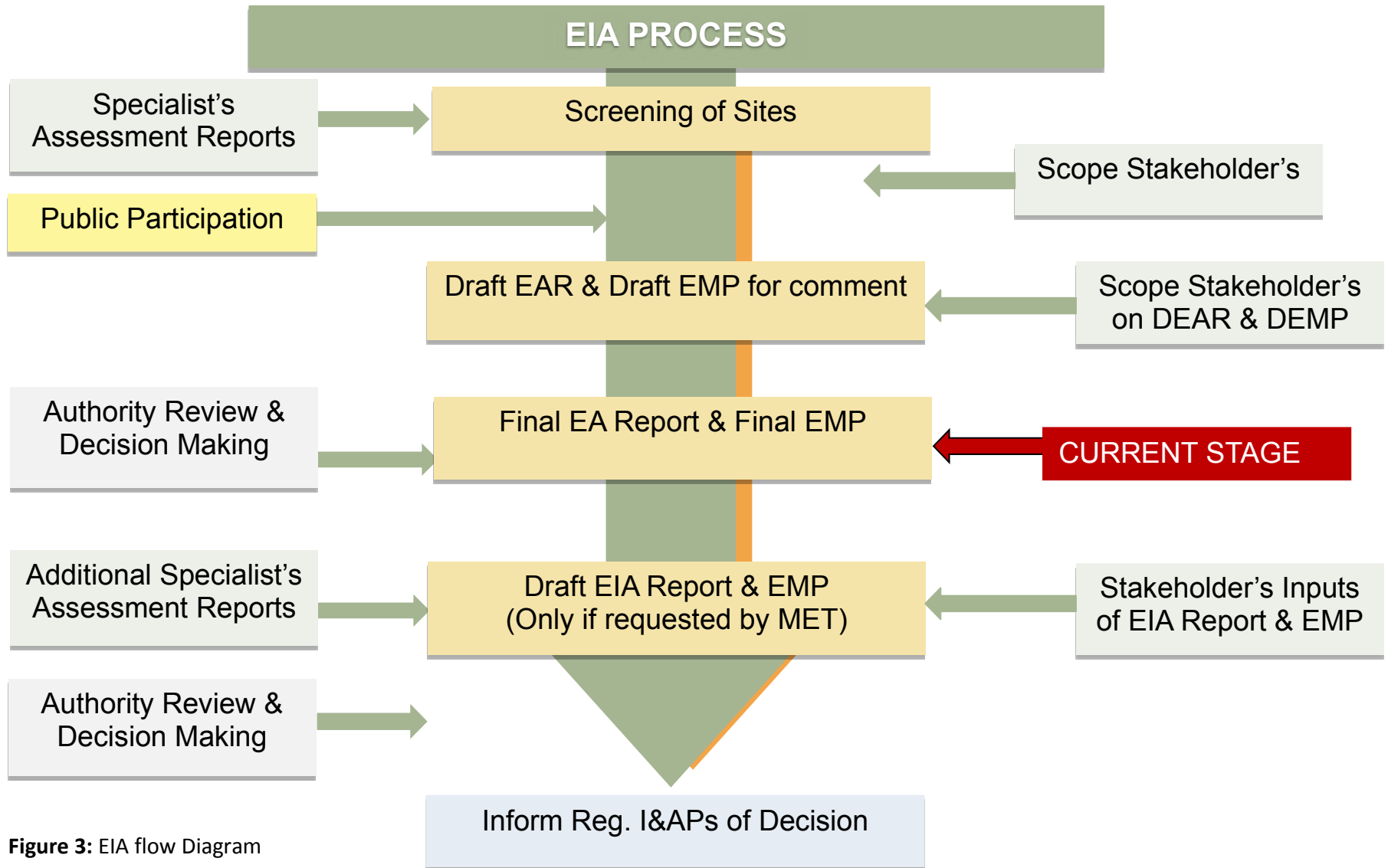


Figure 3: EIA flow Diagram

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 Arandis Constituency and Erongo Region (Namibia Statistics Agency, 2013)

ARANDIS CONSTITUENCY	
ATTRIBUTE	INDICATOR
Population (Henties Bay)	4 720
Population	10 093
Females	4 852
Males	5 241
Population under 5 years	10%
Population aged 5 to 14 years	64%
Population aged 15 to 59 years	64%
Population aged 60 years and above	8%
Female: male ratio	108:100
Literacy rate of 15 years old and above	98%
People above 15 years who have never attended school	4%
People above 15 years who are currently attending school	13%
People above 15 years who have left school	80%
People aged 15 years and above who belong to the labour force	71%
Population employed	72%
Homemakers	5%
Students	49%
Retired or old age income recipients	46%
Income from pension	10%
Income from business and non-farming activities	6%
Income from farming	1%
Income from cash remittance	3%
Wages and salaries	72%
Main Language (Erongo Region)	Oshiwambo-38.8%
ERONGO REGION	
ATTRIBUTE	INDICATOR
Population	150 809
Population aged 60 years and above	6%
Population aged 5 to 14 years	17%
Population aged 15 to 59 years	64%

3.1.2 Archaeological and Heritage Context

The subject site is not known to be of any historical significance. No significant archaeological and heritage sites are known to be located within the proposed development area.

3.2 BIO-PHYSICAL ENVIRONMENT

3.2.1 Climate

The weather along the coast of Namibia is relatively different from that inland. The coastal climate is characterised by lower rainfall, lower temperature, less radiation and sunshine, stronger winds and frequent fog (Mendelsohn, Jarvis, Roberts, *et al.*, 2002). The average annual temperature ranges between 16°C and 17°C as indicated in **Figure 4** below. The average maximum temperature for Henties Bay varies between less than 20°C and 22°C with the average minimum temperature between 8°C and 10°C.

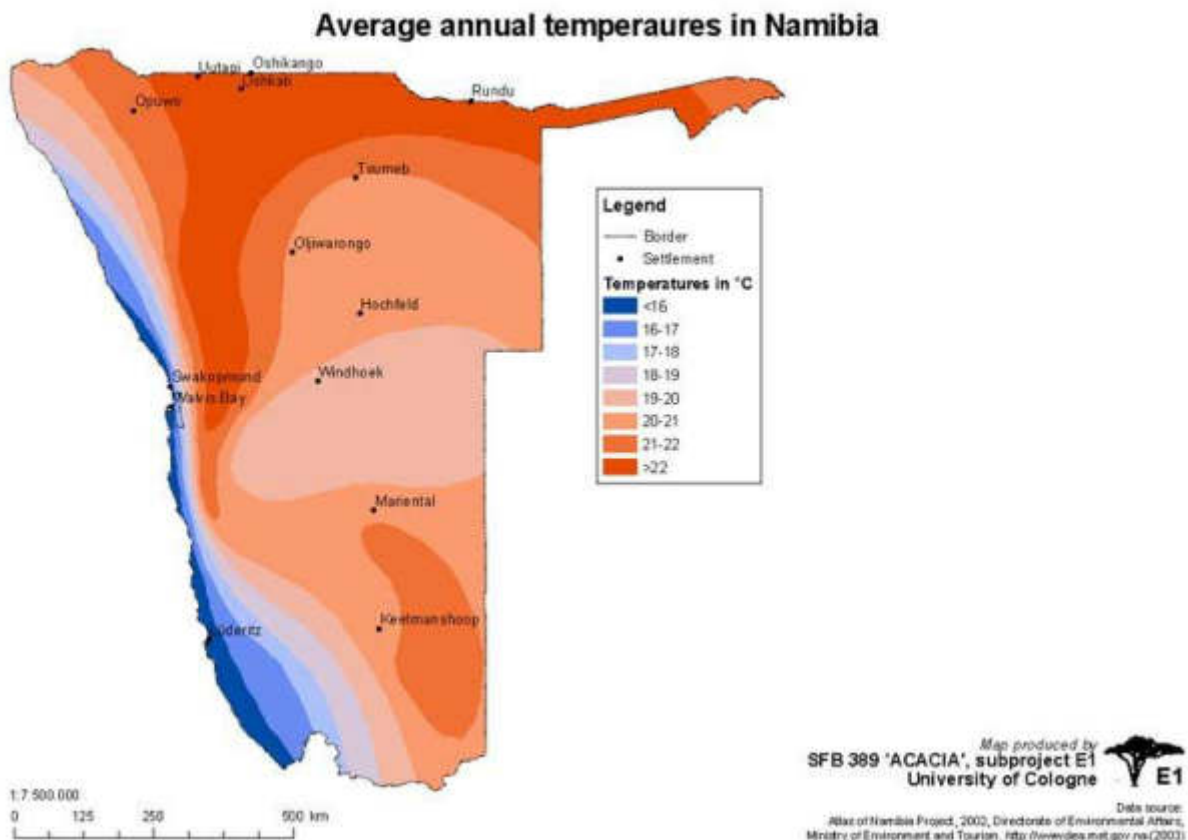


Figure 4: Annual average temperature (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/e1_download_climate_e.htm#temperature_annual)

Along the coast rainfall is much less than further inland. Average annual rainfall for Henties Bay is less than 50 mm per year as indicated in **Figure 5** below.

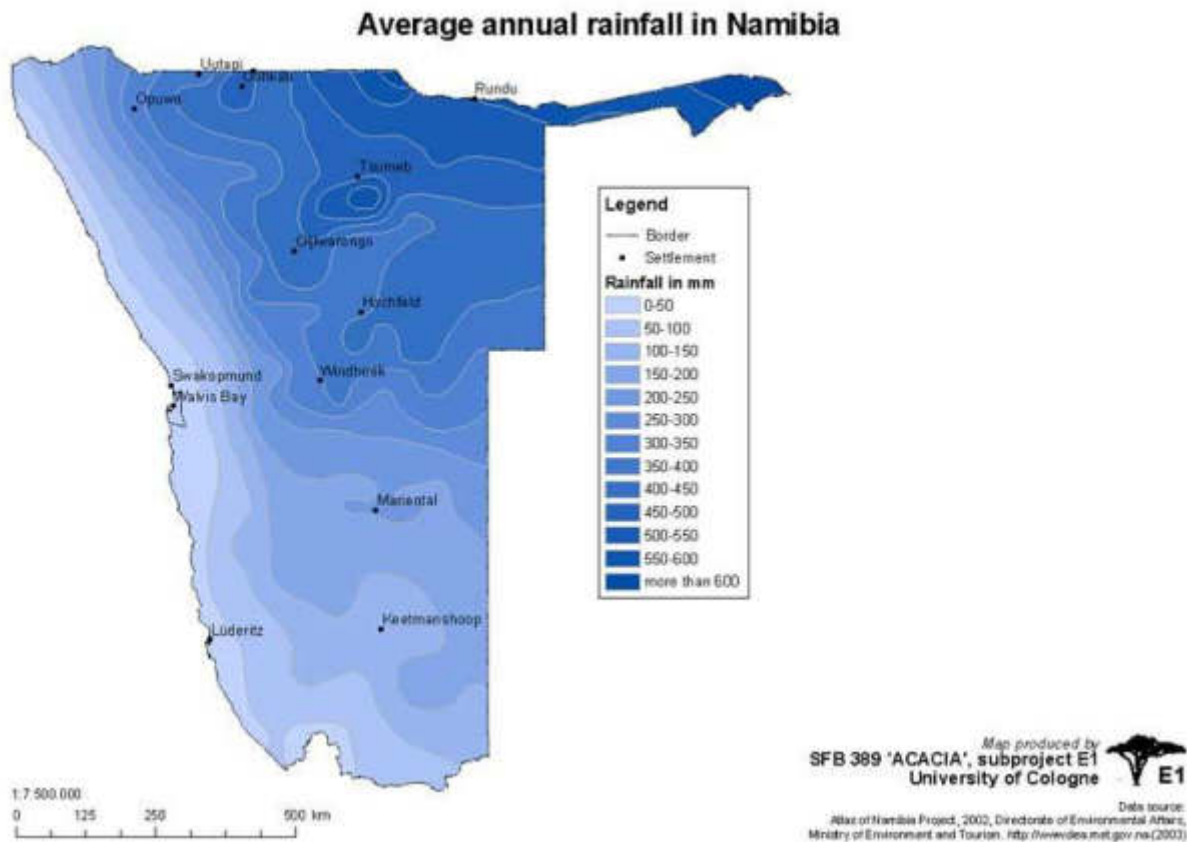


Figure 5: Average annual Rainfall (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/climate/rainfall-annual.jpg)

3.2.2 Topography, Geology and Soils

The Henties Bay area is characterised by the Damara Igneous Province which dates back 137-132 million years ago as depicted in **Figure 6** below. The dominant soils in these areas include limestone and sandstones. The soils of the subject sites are sandy but stable and thus suitable for township establishment.

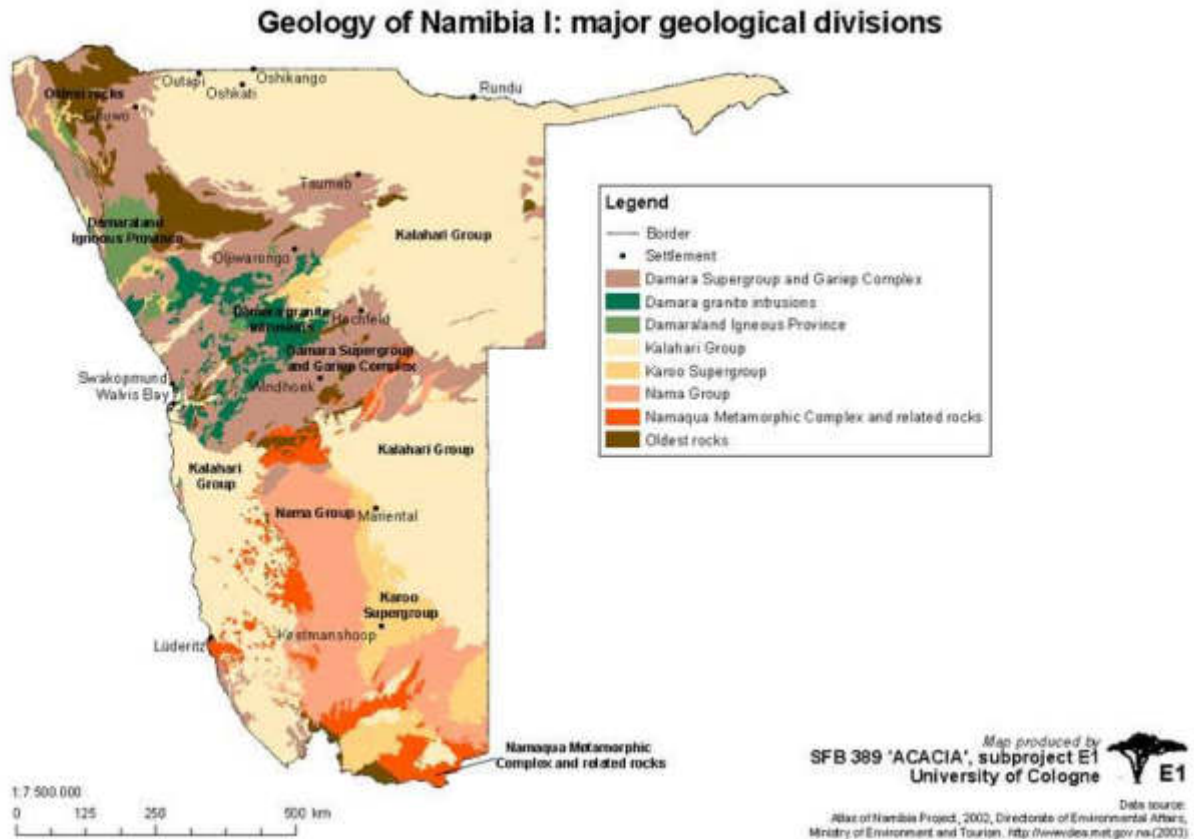


Figure 6: Geology of Namibia (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/physical/geology.jpg)

3.2.3 Hydrology and Hydrogeology

The Omaruru River (**Figure 7**) is a major hydrological feature within the Erongo Region which flows into the Omdel dam. Groundwater from the river basin has enabled water supply to the town of Henties Bay.

The subject area is not subject to flooding nor is any erosion gully found within the area under discussion. As can be taken from the contours the site has a downward fall in a south-westerly direction and stormwater caused during rainstorms can be channeled out of the area through the street reserves.

As the urban areas are developing, and more formal streets having hard surfaces as well as roofs are developed within the area, the peak stormwater run-off increases which will then result in increased stormwater run-off to take place during thunderstorm occurrences. As such the streets were designed in such a way that the speed of stormwater can be controlled within the urban area, the internal street network to function to channel stormwater out of the urban area.

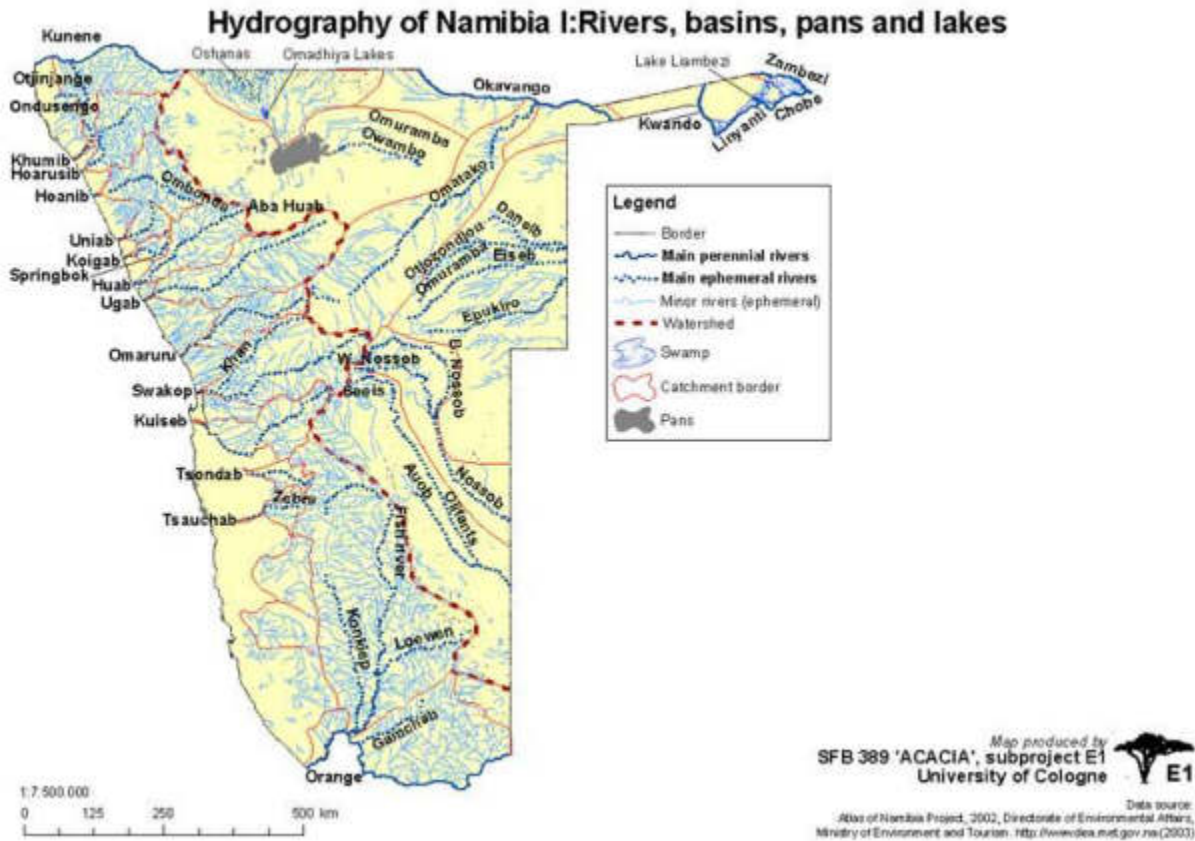


Figure 7: Hydrography of Namibia: Rivers, basins, pans and lakes (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/physical/hydrography_1.jpg)

3.3 TERRESTRIAL ECOLOGY

3.3.1 Flora and Fauna

Henties Bay falls within the Namib Desert Biome and Central Desert vegetation type. The soils in the area are Petric gypsisols and Petric calcisols. Sparse shrubs and grasses occur in the area. The subject sites are sparsely vegetated. It should however be ensured that should any protected plant species occur on site that they are accommodated within the proposed layouts and may not be removed without a valid permit from the local Department of Forestry.

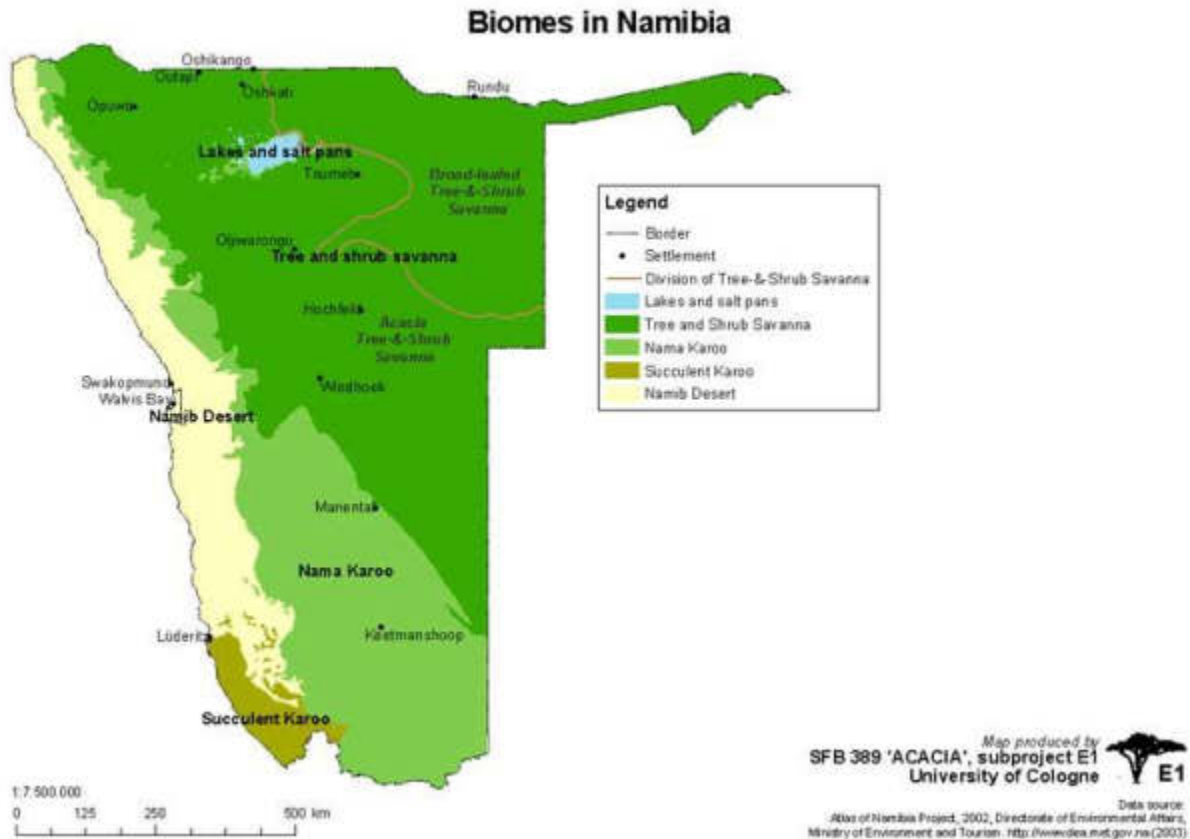


Figure 8: Biomes of Namibia (http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/living_resources/biomes.jpg)

Areas along the coast which boast high concentrations of lichen fields are areas of ecological significance and are thus to be protected. The lichen fields located north of Wlotzkabaken have thus been declared as an Important Plant Area.

The Damara Tern breeding sites along the coast are considered to be areas of importance which need to be conserved.

The Namibian coast has several areas selected as Important Bird Areas which include the Cape Cross Lagoon, Walvis Bay, Sandwich Harbour, 30km beach: Walvis-Swakopmund (Simmons) to name a few.

The subject sites are located within a developed part of the Henties Bay town. As such no sensitive fauna and flora is expected to occur within the site.

4 PROJECT DESCRIPTION

4.1 PROJECT COMPONENTS

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

- **Layout approval and township establishment on Portion 92 of the Remainder of Farm Hentiesbaai Townlands No. 133 to become known as Omdel Extension 8;**
- **Subdivision of the Remainder of Farm Hentiesbaai Townlands No 133 into Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 and the Remainder Farm Hentiesbaai Townlands No 133;**
- **Layout approval and township establishment on Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 to become known as Omdel Extension 10;**
- **Inclusion of Omdel Extensions 8 and 10 in the next 5 year revision scheme prepared for Henties Bay.**

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 subject area would remain vacant and undeveloped. Thus, the Municipality and the residents will not be able to receive the benefits which may result from the construction and operational phase of the development. Thus, the no-go alternative is not considered to be the preferred option.

4.3 THE PROPOSED DEVELOPMENT

The Henties Bay urban areas are experiencing an increasing number of informal developments taking place as households are migrating to urban areas in seek of employment, access to basic municipal services as well as access to Government services and facilities or employment within the developing private sector.

As a result of the accelerated in-migration Henties Bay, as one of the urban growth nodes in the Erongo Region, continues to experience an accelerated demand for serviced land to be made available to the private and public sectors.

The creation of Omdel Extension 8 and 10 is considered to be desirable as the extensions will be:

- a) A pro-active step in terms of enforcing development control on the relatively undeveloped areas along the 30 meter wide road east of the existing Omdel Extension 7, where easy access onto the collector road is considered to be an opportunity for informal development initiatives unsanctioned.
- b) In support of facilitating and promoting the decongestion of Omdel 6 Quasi.
- c) Provides opportunities for the development of commercial, SME and start-up enterprises, institutional and residential offerings.
- d) Facilitates land ownership by making serviced erven available under Freehold Title ownership.

Namibia continues to experience an acute shortage of affordable housing, a situation that has reached a socio-economic crisis and hence warrants an extra-ordinary public policy response. Therefore the 408 erven in total for both extensions are an opportunity to address housing shortage in Henties Bay. As these properties are to be made available under the Freehold Title ownership system, property ownership and opportunity to access funding from financial institutions are considered to be a socio-economic benefit for the beneficiaries while the local authority will widen the asset and tax base of the town.

The following statutory steps need to be undertaken as part of the proposed development:

- **Layout approval and township establishment on Portion 92 of the Remainder of Farm Hentiesbaai Townlands No. 133 to become known as Omdel Extension 8;**
- **Subdivision of the Remainder of Farm Hentiesbaai Townlands No 133 into Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 and the Remainder Farm Hentiesbaai Townlands No 133;**
- **Layout approval and township establishment on Portion A/133 of the Remainder Farm Hentiesbaai Townlands No. 133 to become known as Omdel Extension 10;**
- **Inclusion of Omdel Extensions 8 and 10 in the next 5 year revision scheme prepared for Henties Bay.**

4.3.1 Proposed Subdivision

It is the intention of the proponent to subdivide the Remainder of Farm Hentiesbaai Townlands No 133 into Portion A/133 and the Remainder of the Farm Hentiesbaai Townlands No 133. The proposed subdivision is to enable the Henties Bay Municipality to establish a new township to be known as Omdel Extension 10. **Table 5** indicates the erf size of the intended subdivision.

Table 5: Subdivision of the Remainder of Farm Hentiesbaai Townlands No 133

Erf No.	± Size (m ²)	Current Zoning
Portion A/133	12,0704	Undetermined
Remainder of Farm Hentiesbaai Townlands No 133		Undetermined

The proposed subdivision is not expected to have any negative impact on the nature and character of the surrounding area but will rather lead to much needed urban infill and improved land utilisation as the new areas can be cost effectively linked to the existing municipal infrastructure network.

4.3.2 The layout of Omdel Extension 8

Omdel Extension 8 is to be established on Portion 92 of the Farm Hentiesbaai Townlands No 133 which was previously created and earmarked for the development of a sport stadium. The proponent resolved to rather use Portion 92 to meet the demand for serviced and affordable residential properties.

The layout prepared for Omdel Extension 8 is a targeted intervention, hence it provides for predominantly residential land uses where the residential erven must meet the minimum erf size requirement of 300m². In total 204 single residential erven are provided within the extension which is forming an integrated and interconnected layout design which is in line with the spatial framework plan of Henties Bay. East of Extension 8 is a commercial and industrial node compensating for the absence of these uses in the layout.

A 30-meter-wide road linked into the existing Omdel Extension 7 forms a linking intersection with a 25-meter collector road connecting the extensions with the proposed commercial and industrial areas. This 25-meter road also links in the western direction to the existing Omdel Extension 5 and 7 creating a major interchange. This intersection has the potential to accommodate a circle which will be an urban design feature in terms of creating a sense of identification and space.

The layout provides one Local Authority erf located strategically to provide for a market or Small Medium Enterprise (SME) structure to promote local economic development. The location is also strategically located along the major collector road and abutting at the entry of the proposed

industrial township to benefit from the economies of scale. In close proximity is a public open space to be converted in a small community park.

Omdel Extension 8 has six Public Open Spaces (POS) with four functional public open spaces for exercising, playing and watching outdoor sports, meeting, socializing with friends and family or relaxing and unwinding. As such these parks are classified to be neighborhood parks. The two smaller POS are mainly to ensure pedestrian walkway and a buffer to minimize direct access on the 25-meter collector road. Ideally these areas are to be used for the planting of trees and in so doing announce the important intersection created between Omdel Extensions 7, 8 and 10. In total 1,29 hectares of land is allocated to the parks, or then 10,35% and as such the layout design meets the POS requirement which indicates that at least 10% of a neighborhood area must be allocated to parks.

In conclusion the layout makes provision for one small erf for an electrical substation for Erongo Red to be zoned “Parastatal” to ensure electrical provisions for the township. The land uses for the proposed township are depicted on **Figure 9 and 10** and **Table 6** below.

Table 6: Overview of the land uses for the proposed Omdel Extension 8

Zoning	No of Erven	± Total Area(ha)	% of Total Area
Single Residential	204	6.63	53.18
Local Authority	1	0.20	1.60
Parastatal	1	0.03	0.22
Public Open Space	6	1.29	10.35
Street	Remainder	4.32	34.65
TOTAL	212 & Remainder	12.47	100.00

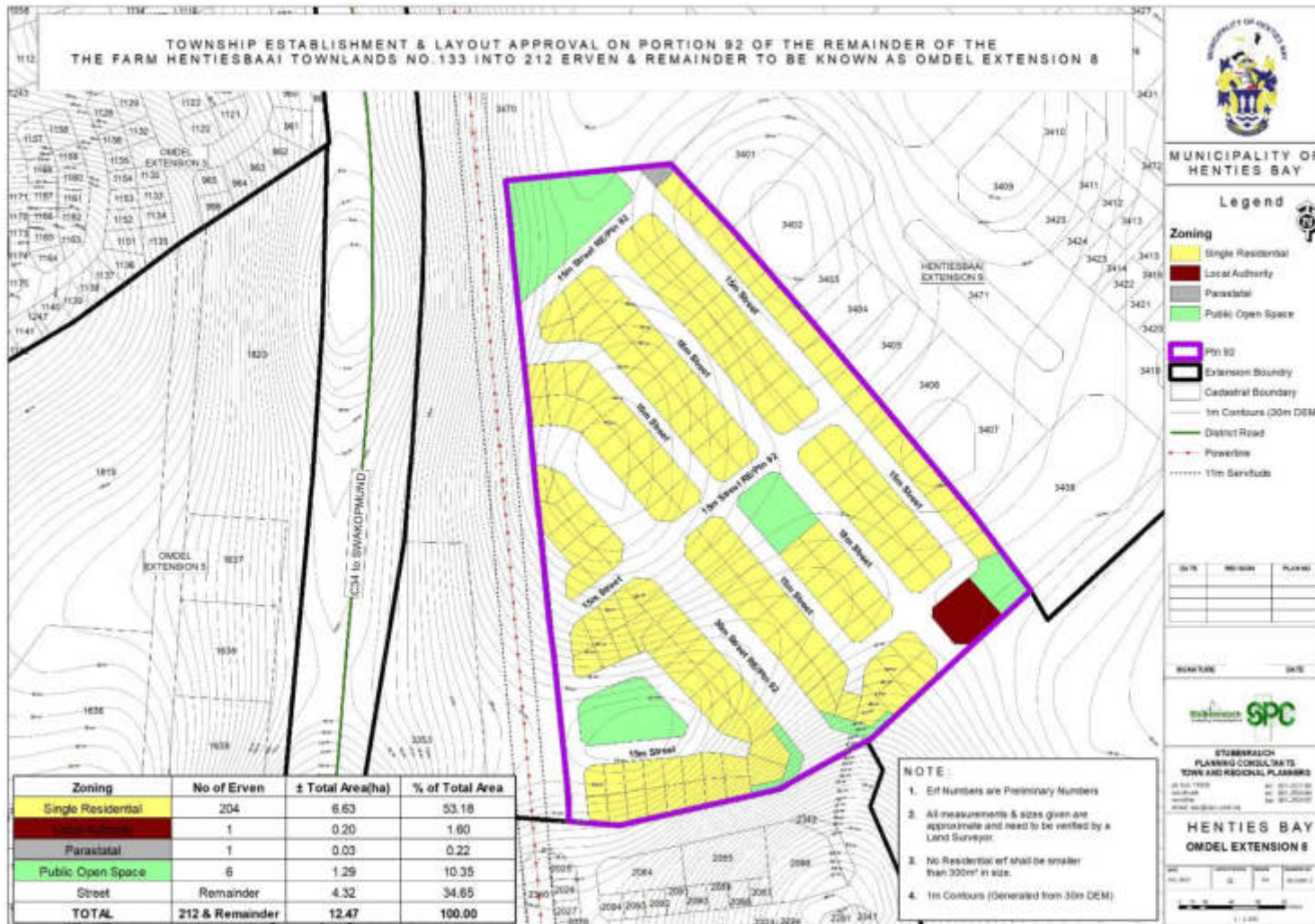


Figure 9: Township Establishment of Omdel Extension 8

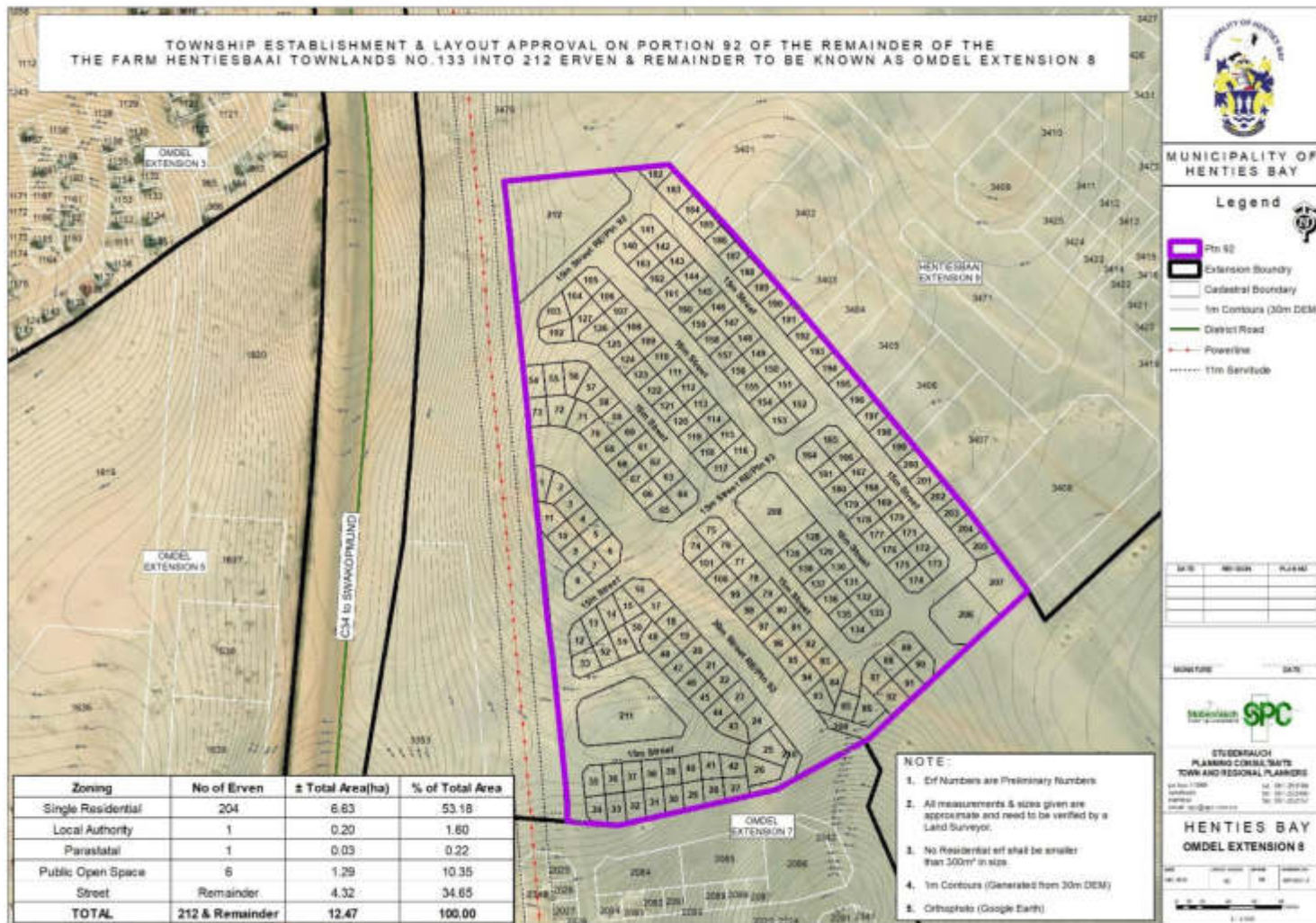


Figure 10: Aerial Map of proposed Omdel Extension 8

4.3.3 The layout of Omdel Extension 10

The proposed Omdel Extension 10 provides predominantly residential erven. A total of 204 residential erven are provided in this extension.

The layout makes provision for an institutional erf close to a major traffic roundabout with a pedestrian sidewalk within a system of linear parks linking the two extensions to ensure pedestrian safety access. The erf is earmarked for the development of a community or multi-purpose hall or a larger church which could be considered to be a landmark building.

Public Open Spaces (POS) play a vital role in the life of a community and are highly valued. The proposed Omdel Extension 10 has seven POS of which four are functional neighbourhood parks catering for exercising, playing and watching outdoor sports, meeting, socializing with friends and family or relaxing and unwinding. The three smaller POS are provided mainly to ensure pedestrian walkway and a buffer to minimize direct access on the 30- meter and 25-meter collector road. In total 1,28 hectares of land is allocated to the parks, or then 10,03% and as such the layout design meets the POS requirement which indicates that at least 10% of a neighbourhood area must be allocated to parks.

One business erf is provided for in Extension 10 for the development of small-scale retailing, buying or selling of goods, groceries and everyday items. This business erf will also cater for the daily needs of Omdel Extension 8 and the Light Industrial Area and as such needs to be strictly reserved and developed for business. Directly adjacent and in support of the business erf a Local Authority erf is provided for which is to cater for a market or SME structures in the promotion of local economic development to spur small business activities in Omdel Extension 10.

Finally, the layout provides one small erf for an electrical substation for Erongo Red to be zoned "Parastatal" to ensure electrical provisions for the township. The land uses for the proposed township are depicted on **Figure 11 and 12** and **Table 7** below.

Table 7: Overview of the land uses for the proposed Omdel Extension 10

Zoning	No of Erven	± Total Area(ha)	% of Total Area
Single Residential	204	6.88	53.92
Business	1	0.17	1.36
Parastatal	1	0.01	0.09
Institutional	1	0.18	1.41
Local Authority	1	0.20	1.60

Zoning	No of Erven	± Total Area(ha)	% of Total Area
Public Open Space	7	1.28	10.03
Street	Remainder	4.03	31.58
TOTAL	215 & Remainder	12.76	100.00

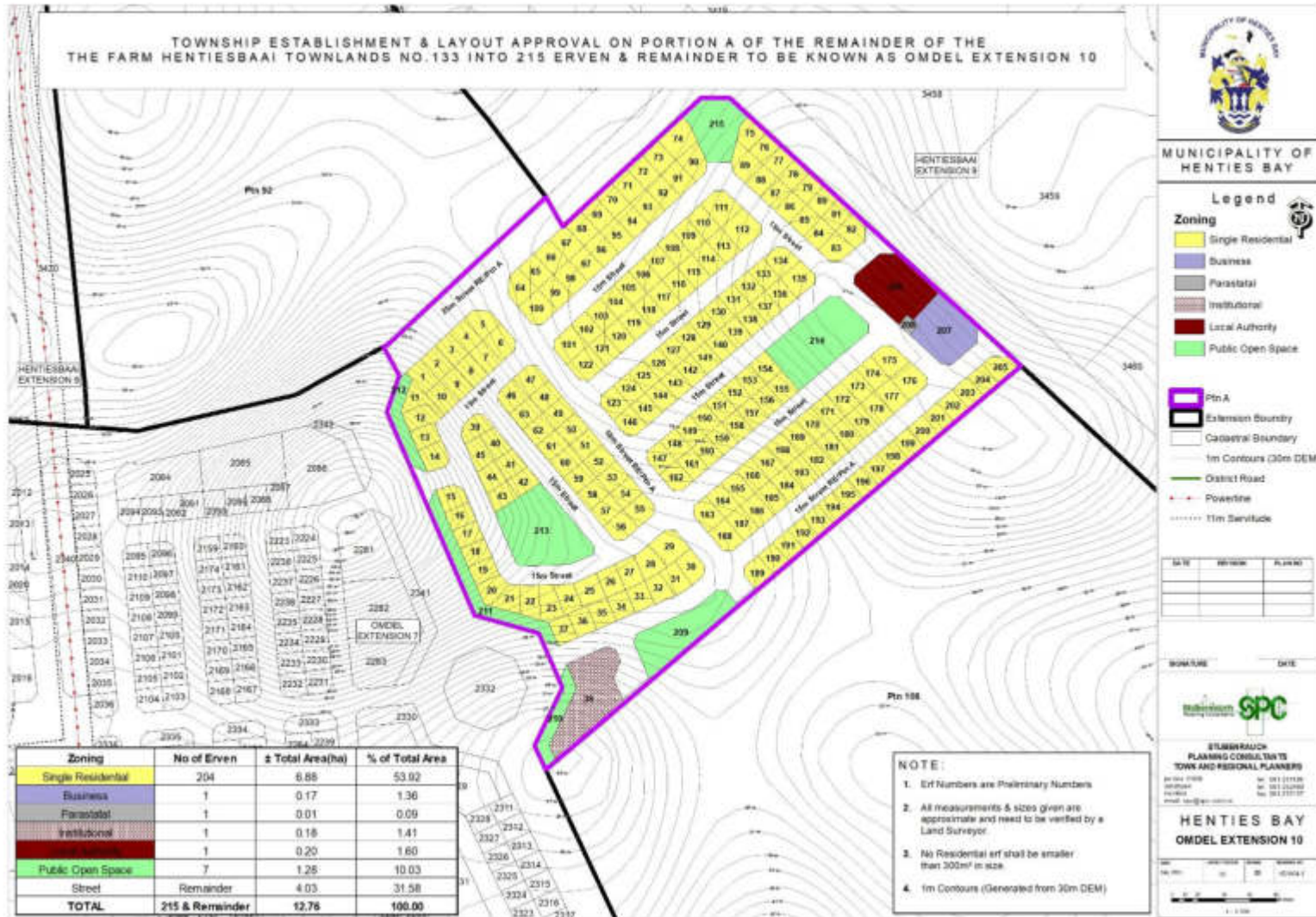


Figure 11: Proposed Township Establishment of Omdel Extension 10

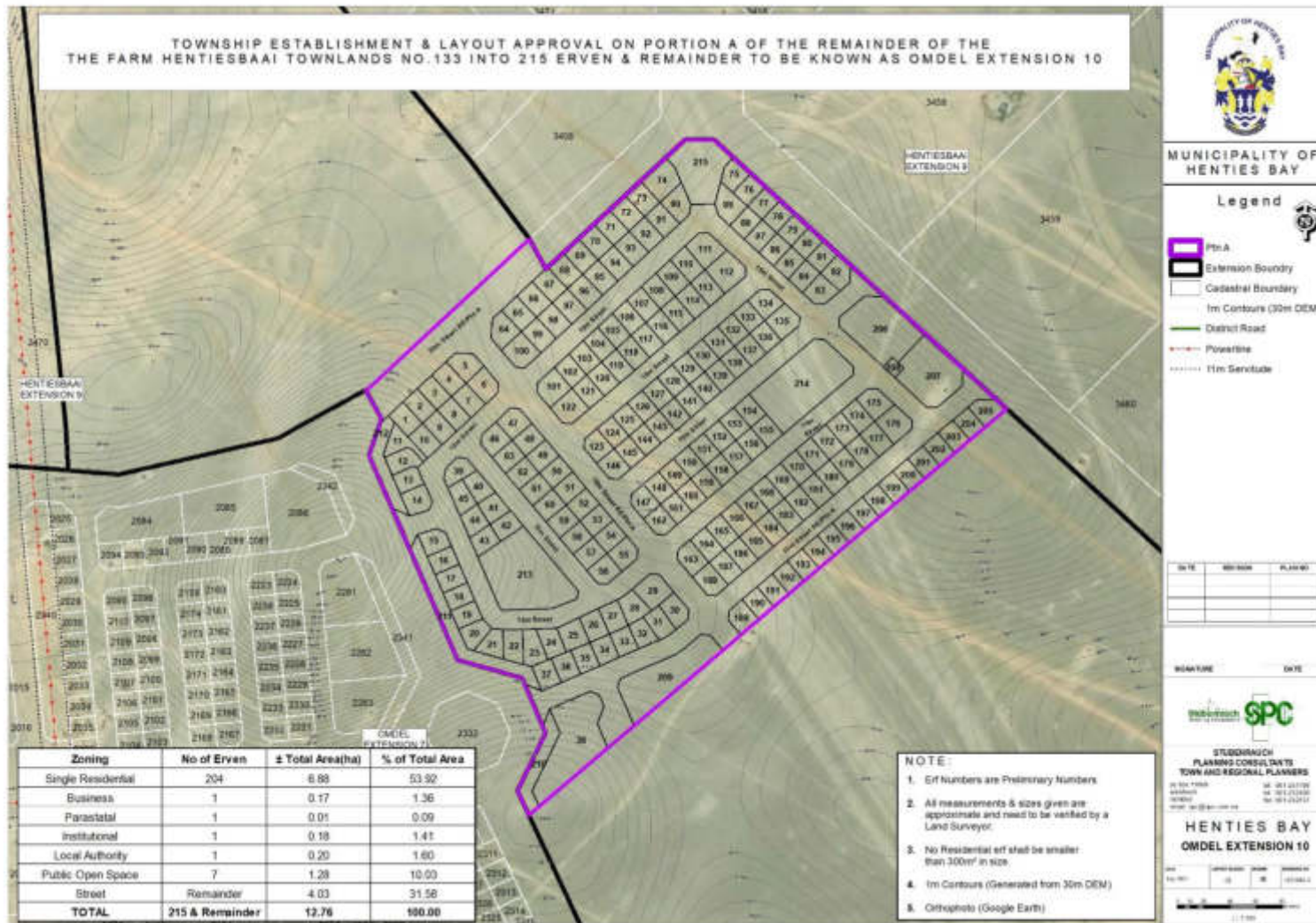


Figure 12: Aerial Map of Proposed Township Establishment of Omdel Extension 10

4.3.4 Engineering Services and Access Provision

The sites on which the township establishments are to be created are undeveloped and as such must be provided with municipal engineering infrastructure. The proponent is to appoint a civil engineer for the design and construction of municipal services once the layout plans are approved and the detailed service plans can be drawn up in response to the layout

4.3.4.1 Roads and stormwater

The layout design makes use of a clearly defined road hierarchy where the street reserves range from 15 meters to 30 meters.

Use is made of a legible grid pattern street layout within the eastern and the north-eastern areas as this permits the layout to link into the existing street network of the 30 meter west and 25 meter wide collector road facilitating easy access into the western areas and east into the commercial and industrial areas including agriculture small holding as planned.

One collector road having street reserves of 25 meter lead into the commercial and industrial planned node. These roads are to increase accessibility and vibrancy as needed to support the abovementioned node. The 25 meter road dividing the two townships are to distribute internal traffic while allowing limited through traffic. On-street parking, including public transport or offloading parking spaces can be introduced within the internal ring roads. The remaining internal streets are kept short but legible as they are to support movement with pedestrian movement having priority over car movement and as such lead to residential convenience living.

Access onto the four-way intersection between Omdel Extension 5 and 7 is limited and a POS buffer created for a pedestrian only walkway. The POS introduced between the road reserve and the erven within Extension 10 enables access control along the distributor road. Ideally these green belts are to be landscaped and provided for with adequate street lighting.

The streets have been designed in such a way that stormwater can be channeled out of the area by either making use of the street reserves which permit effective stormwater run-off in an easterly direction.

It should also be noted that, over time the 30 meter street reserve passing through Omdel Extension 8 will become an important public and higher order transportation corridor and as such the Town Council can link this road to the C34 which will then vastly improve internal traffic circulation of the larger urban area, especially considering that Henties Bay will mainly expand on an easterly to south easterly direction.

4.3.4.2 Water and sewage

The local authority must appoint a professional engineer for the design and installation of an efficient water and sewage municipal service infrastructure.

4.3.4.3 Electricity and Telephone

No overhead electricity lines cross the area. Erongo Red will be approached for the design and installation of the electricity network while Telecom Namibia will be informed of these extensions for planning and installation of the necessary communication network in support of the extensions.

5 PUBLIC PARTICIPATION PROCESS

5.1 PUBLIC PARTICIPATION REQUIREMENTS

In terms of Section 21 of the EIA Regulations a call for open consultation with all I&APs at defined stages of the EIA process is required. This entails participatory consultation with members of the public by providing an opportunity to comment on the proposed project. Public Participation has thus incorporated the requirements of Namibia's legislation, but also takes account of international guidelines, including Southern African Development Community (SADC) guidelines and the Namibian EIA Regulations. Public participation in this project has been undertaken to meet the specific requirements in accordance with the international best practice. Please see **Table 8** below for the activities undertaken as part of the public participation process. The I&APs were given time to comment from **5 November 2021 to 26 November 2021**.

Table 8: Table of Public Participation Activities

ACTIVITY	REMARKS
Placement of site notice/poster in Henties Bay	See Annexure A
Placing advertisements in two newspapers namely the Namibian and the New Era (5 November 2021 and 10 November 2021)	See Annexure B
Written notice to surrounding property owners and Interested and Affected Parties via Email (2 November 2021)	See Annexure C
A public meeting was held on 11 November 2021 at the Henties Bay Council Chambers in Henties Bay	See Annexure C

5.1.1 Environmental Assessment Phase 2

The second phase of the PPP involved the lodging of the Draft Environmental Scoping Report (DESR) 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 **4 February 2022**. An Executive Summary of the DESR was included in the letters to the registered I&APs. I&APs had until **18 February 2022** 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 9**.

Table 9: Impact Assessment Criteria

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

CRITERIA	CATEGORY
	<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.

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.

Figure 13: Mitigation Hierarchy

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: DEAF for consideration. In turn, MEFT: DEAF'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 PLANNING AND DESIGN PHASE IMPACTS

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

7.2.1 Traffic Impacts

The intended development may have an impact on traffic in the subject area as the sites are currently undeveloped. Once the proposed sites are developed traffic in the area is expected to increase. The traffic is not expected to increase significantly as the portions are in close proximity to an already developed area within the town.

7.2.2 Existing Service Infrastructure Impacts

The proposed townships are to be connected to the necessary services of the town. Once the sites become developed the increasing demand on the existing services would have to be determined and additional services would have to be provided for if needed.

7.3 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.

7.3.1 Flora and Fauna Impacts (Biodiversity)

As the project site is undeveloped there is sparse vegetation present on site. The vegetation present on site should be incorporated within the layout of the proposed development as far as possible. 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.

7.3.2 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.

7.3.3 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 the sparse vegetation will render the soil vulnerable to erosion as they also serve the purpose of keeping the soils compacted.

7.4 CONSTRUCTION PHASE IMPACTS ON THE SOCIO-ECONOMIC ENVIRONMENT

7.4.1 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.

7.4.2 Health, Safety and Security Impacts

Due to the demand for construction workers during the construction of the proposed project an influx of migrant workforce who will require temporary accommodation in Henties Bay might be experienced. Experience with other construction projects in a developing-world context has shown that, where migrant construction workers have the opportunity to interact with the local community,

a significant risk is created for the development of social conditions and sexual behaviors that contribute to the spread of HIV and AIDS.

In response to the threat the pandemic poses, MEFT has developed a policy on HIV and AIDS. This policy, which was developed with support from USAID, GTZ and the German Development Fund, provides for a non-discriminatory work environment and for workplace programs managed by a Ministry-wide committee. The MEFT has also recently initiated a programme aimed at mainstreaming HIV and gender issues into environmental impact assessments.

7.4.3 Traffic Impacts

Traffic is expected to increase 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.

7.4.4 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.

7.4.5 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.

7.4.6 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.

7.4.7 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.

7.5 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.

7.5.1 Visual and Sense of Place Impacts

There may be a change in visual characteristics of the site particularly as the areas 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. The intended activities for the proposed site may alter the sense of place for the existing community and property owners situated in close proximity to the site, as well as the residents of Henties Bay who frequent the site.

7.5.2 Noise Impacts

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

7.5.3 Emission Impacts

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

7.5.4 Waste Impacts

Increased waste may be generated as a result of the operational activities at the sites. Effective waste management on site should be practiced as per the recommendations in the EMP.

7.5.5 Social Impacts

From a social perspective, the development will make available much needed erven for low cost housing in Henties Bay. The community of Henties Bay are further expected to benefit from the employment opportunities that may be offered during construction and possibly by the activities taking place at the site.

7.6 CUMULATIVE IMPACTS

The cumulative impact of the proposed developments regarding 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 10**. The **Tables 11 – 13** provide a summary of the mitigation measures proposed for the impacts. While some difference in magnitude of the potential impacts would result from the 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 10: Summary of the significance of the potential impacts

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
PLANNING AND DESIGN PHASE										
1. Traffic Impacts	Omdel Ext 8 and 10	No mitigation	Local	Medium	Medium term	Medium	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Low	Medium term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral
2. Proposed services	Omdel Ext 8 and 10	No mitigation	Local	Medium	Medium term	Medium	Probable	Certain	Reversible	Medium (-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
CONSTRUCTION PHASE										
3. Biodiversity (Fauna and Flora)	Omdel Ext 8 and 10	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
4. Surface & ground water	Omdel Ext 8 and 10	No mitigation	Local	Medium	Short term	Medium	Probable	Certain	Reversible	Medium (-ve)

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
		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
5. Soil erosion	Omdel Ext 8 and 10	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
6. Heritage	Omdel Ext 8 and 10	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
7. Health, safety and security	Omdel Ext 8 and 10	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
8. Traffic impacts	Omdel Ext 8 and 10	No mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Very low	Short term	Very low	Probable	Certain	Reversible	Very low

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
9. Noise impacts	Omdel Ext 8 and 10	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
10. Emissions impacts	Omdel Ext 8 and 10	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
11. Municipal services	Omdel Ext 8 and 10	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
12. Waste	Omdel Ext 8 and 10	No mitigation	Local	Low	Short term	Medium	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Very 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
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
13. Hazardous Substances	Omdel Ext 8 and 10	No mitigation	Local	Low	Short term	Medium	Probable	Certain	Reversible	Medium (-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. Visual & sense of place	Omdel Ext 8 and 10	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
2. Noise	Omdel Ext 8 and 10	No mitigation	Local	Medium-Low	Medium term	Medium-Low	Probable	Certain	Reversible	Medium-Low (-ve)
		Mitigation	Local	Low	Medium term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
3. Emissions	Omdel Ext 8 and 10	No mitigation	Local	Medium-Low	Medium term	Low	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Low	Medium term	Very Low	Probable	Certain	Reversible	Very 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. Waste	Omdel Ext 8 and 10	No mitigation	Local	Low	Long term	Medium	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Very low	Long term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
5. Social impact	Omdel Ext 8 and 10	No mitigation	Local	High	Long term	Medium (+)	Probable	Probable	Reversible	Medium (+)
		Mitigation	Local	High	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 11: Proposed mitigation measures for the planning and design phase

PLANNING AND DESIGN PHASE IMPACTS	
Impact	Mitigation Measures
Traffic	<ul style="list-style-type: none"> • Ensure that road junctions have good sightlines. • Provide formal road crossings at relevant areas. • Provide for speed reducing interventions such as speed bumps at relevant road sections.
Existing Service Infrastructure	<ul style="list-style-type: none"> • It is recommended that alternative and renewable sources of energy be explored and introduced into the proposed development to reduce dependency on the grid. • Solar geysers and panels should be considered to provide for general lighting and heating of water and buildings. • Water saving mechanisms should be considered for incorporation within the developments in order to further reduce water demands. • Re-use of treated wastewater should be considered wherever possible to reduce the consumption of potable water.

Table 12: Proposed mitigation measures for the construction phase

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
Flora and Fauna	<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.

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> • 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. • 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"> • It is recommended that construction takes place outside of the rainy season in order to limit flooding on site and surface water pollution. • 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.

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> • 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.
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 on site. • 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 if noise levels are significantly high. • 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 general waste. • 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 13: Proposed mitigation measures for the operational phase

OPERATIONAL PHASE IMPACTS	
Impact	Mitigation Measures
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 minimise large advertising billboards).
Noise	<ul style="list-style-type: none"> • Do not allow commercial activities that generate excessive noise levels.

OPERATIONAL PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> • 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.
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 DESR and describe the way forward.

8.1 CONSTRUCTION PHASE IMPACTS

With reference to **Table 10**, 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

The most significant operational phase impact **medium (positive)** is the social impact. This is as a result of the potential job opportunities during construction as well the increased development within the area. Furthermore, the community of Henties Bay are further expected to benefit from the development due to additional erven being provided within the town.

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: DEAF to be able to determine the environmental acceptability of the proposed project.

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

8.4 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: DEAF could be enforced as Conditions of Approval in the Environmental Authorisation, should MEFT: DEAF 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 vacant and undeveloped. The local community is expected to benefit from the development as a result of the potential job opportunities during construction as well as the increased development within the area. Furthermore, the community of Henties Bay are further expected to benefit from the new townships which will make available much needed low cost residential erven. The significance of the social impact was therefore deemed to be **Medium (positive)**.

The “no go” alternative on the other hand was deemed to have a **High (negative)** impact, as all the social 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

Mendelsohn, J., Jarvis, A., Roberts, C. & Roberston, T. 2002. Atlas of Namibia.

Namibia Statistics Agency. 2011. Namibia 2011 Population & Housing Census - Main Report. 214. [Online], Available: http://www.nsa.org.na/files/downloads/Namibia_2011_Population_and_Housing_Census_Main_Report.pdf.

Namibia Statistics Agency. 2013. Erongo Census Regional Profile.