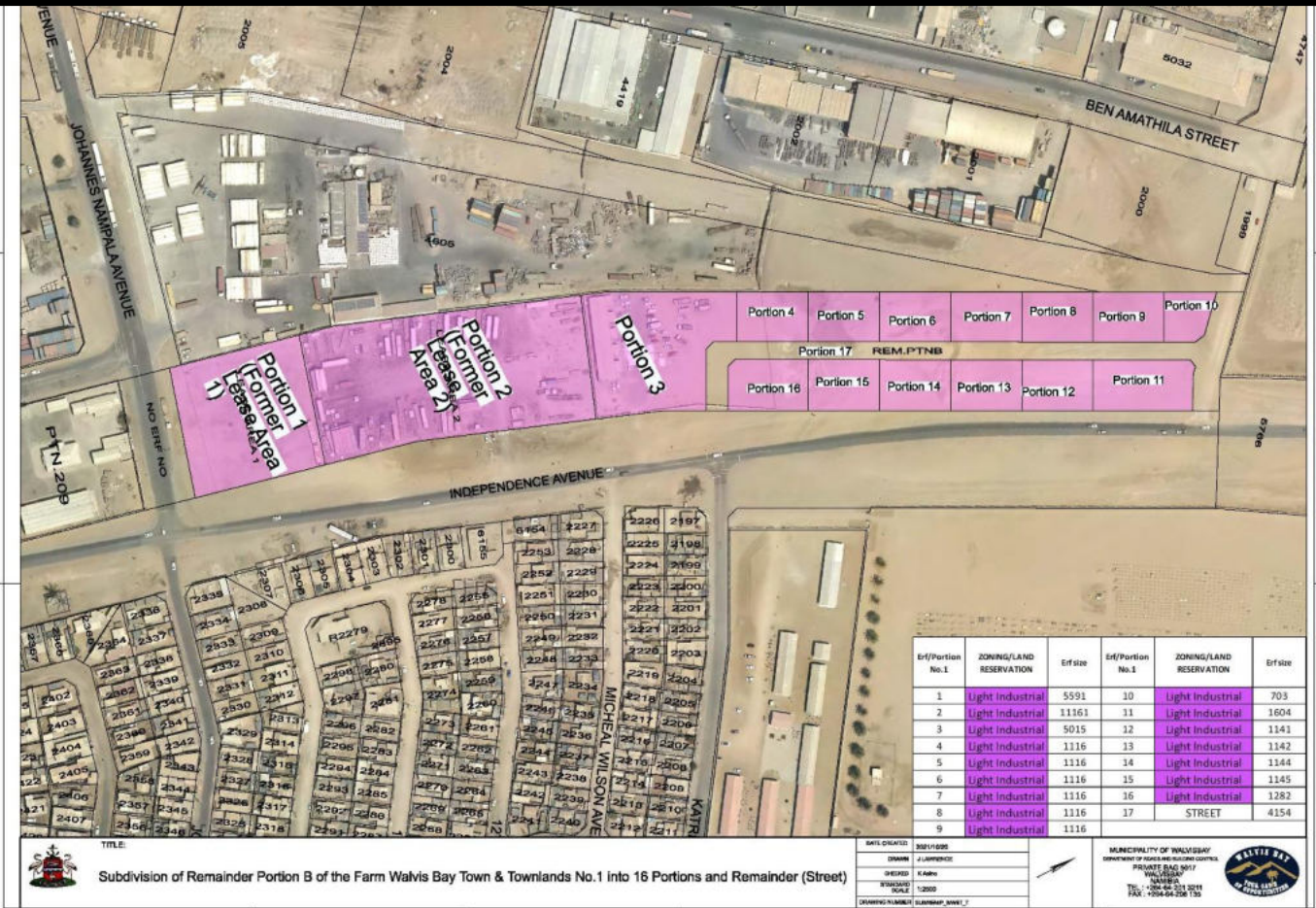


2023

EIA REPORT

Proposed Subdivision of Remainder Portion B of the Farm Walvis Bay Town and Townlands No. 1 into Portions 238-253 and Portion 254 (Street) and Rezoning of Portions 238-253 (Portions of Remainder Portion B) from "Undetermined" to "Light Industrial", Walvis Bay, Erongo Region



PROPONENT:

Walvis Bay Municipality

Private Bag 5017

Walvis Bay

Tel: +264 64201 3111

Fax: +264 64201 3274

REPORT DATE:

10 July 2023

AUTHOR:

Colin P Namene

P.O. Box 24213

Windhoek

Tel: +264 81 458 4297

Fax: 061 – 258 470

Email: colin@environam.com



Signature

EXECUTIVE SUMMARY

1. INTRODUCTION

Namibia has made great strides to position itself as a regional logistic hub in the Southern African region. Through the Walvis Bay Corridors, the port of Walvis Bay is linked to major cities and towns in SADC such as Gaborone, Johannesburg, Livingstone, Ndola, Lubumbashi, Santa Clara etc.

Namibia in general and Walvis Bay in particular is also seen as a trade logistic alternative to South African and East-African trade channels that are experiencing challenges including multiple inefficient border crossings, worsening security, xenophobia and social instability. The country is becoming an increasingly attractive investment option for South African manufacturers, mining companies seeking to beneficiate resources and logistics enterprises seeking a more cost-effective location.

It is thus important that Walvis Bay takes advantage of this position to elevate the town's economic profile and augment the local and national economic development. In order to realise this the town has to interrogate its capacity to meet the demand of the much-needed services and land as a result of the above dynamics. In response to this, the Municipality of Walvis Bay, as the proponent, intends to undertake the following activities:

- a) Subdivision of Remainder Portion B of the Farm Walvis Bay Town and Townlands No. 1 into Portions 238-253 and Portion 254 (Street) and
- b) Rezoning of Portions 238-253 (Portions of Remainder Portion B) from "Undetermined" to "Light Industrial".

The Municipal Council has considered the above application in terms of the Urban and Regional Planning Act, 2018 (Act No. 5 of 2018) and in accordance with the Local Authorities Act, 1992 (Act No. 23 of 1992), as amended and recommended to the Urban and Regional Planning Board in accordance with Section 109(2)(a) of the Urban and Regional Planning Act (the Act) for consideration by the Board and approval by the Minister of Urban and Rural Development.

The above activity is discussed in more detail in Chapter 4. The proponent appointed Environam Consultants Trading cc (ECT) to undertake the Environmental Assessment (EA) in order to obtain an Environmental Clearance Certificate (ECC) for the activity from the Office of the Environmental Commissioner in the Ministry of Environment, Forestry and Tourism (MEFT).

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) of 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 proposed development and related infrastructure and services.

The EIA process would also provide an opportunity for the public and key stakeholders to provide comments and participate in the process. It will also serve the purpose of informing the proponent’s decision-making, and that of MEFT.

1.1 PROJECT LOCATION

Remainder Portion B is located within the Industrial area of Walvis Bay Extension 5, along Independence Road. It is situated on the coordinates lat: -22.932566; long: 14.520399.

2. LEGISLATIVE FRAMEWORK

The principle environmental regulatory agency in Namibia is the Office of the Environmental Commissioner within the Directorate of Environmental Affairs of the Ministry of Environment, Forestry and Tourism. Most of the policies and legislative instruments have their basis in two clauses of the Namibian Constitution, i.e. Article 91 (c) and Article 95 (l); however, good environmental management finds recourse in multiple legal instruments.

3. ENGINEERING SERVICES

The infrastructure needs of the proposed project can be categorised into two broad classifications namely:

- Basic infrastructure that includes electricity and roads.
- Environmental infrastructure that consists of water supply, sewage and drainage systems, solid waste management and landscaping.

Bulk infrastructure services such as water and sewer will be extended from the existing services in the vicinity. Electricity will be provided to the site in consultation with the regional electricity distributor, ErongoRED. Ingress will be obtained from Independence Avenue.

4. PUBLIC PARTICIPATION PROCESS

In terms of Section 21 of the EIA Regulations a call for public consultation with all I&APs during the EIA process is required. This entails consultation with members of the public and providing them an opportunity to comment on the proposed project. The Public Consultation Process does not only incorporate the requirements of Namibia’s legislation, but also takes account of national and international best practises. Please see the table below for the activities undertaken as part of the public participation process.

ACTIVITY	REMARKS
Placement of Notices/ posters on site and notice boards	See Annexure A
Placing advertisements in two newspapers for two consecutive weeks, namely Namib Times, Confidante and Windhoek Observer	See Annexure B

ACTIVITY	REMARKS
Written notice to Interested and Affected Parties via Email	See Annexure D

The comment period of the initial public participation process commenced on **26 May 2023** and ended on **09 June 2023**.

The second phase of the Public Consultation Process involved the lodging of the Draft Environmental Scoping Report (DESR) to all registered I&AP for comment. Registered and potential I&APs were informed of the availability of the DESR for public comment. An Executive Summary of the DESR was included in the communication that went out to the registered I&APs. I&APs were given time until **07 July 2023** to submit comments or raise any issues or concerns they may have with regard to the proposed project.

In addition, from the Municipality of Walvis Bay side, the subdivision and rezoning were advertised in the Namib Times, New Era and Government Gazette. Rezoning and subdivision notices were also displayed on the site and on the Municipality of Walvis Bay's notice board. Furthermore, adjacent landowners were notified about the above application.

5. POTENTIAL IMPACTS IDENTIFIED

The following planning and design phase impacts were identified:

- Surface and groundwater;
- Fauna and flora;
- Existing infrastructure;
- Traffic.

The following construction phase impacts were identified:

- Fauna and flora;
- Pressure on the existing infrastructure;
- Surface and groundwater;
- Health, safety and security;
- Air quality,
- Noise,
- Traffic;
- Waste management;
- Hazardous substances;
- Social; and
- Archaeological.

The following operational phase impacts were identified:

- Air quality;
- Noise;

- Impact on human health;
- Waste management;
- Quality of life; and
- Visual impact.

6. CONCLUSION

It is recommended that this project be authorised, as the development will have the following benefits to the residents and investors in addition to promoting local economic development:

- The subdivision and rezoning will enable residents and other potential buyers to acquire legal ownership of these erven.
- Light Industrial erven have potential to create employment opportunities to local people.
- Small light industrial erven require less capital compared to larger industrial erven. It is therefore easier for the proposed erven to be developed by emerging or small and medium entrepreneurs who usually have limited resources.
- The creation of the proposed light industrial erven will in the future generate revenue for Council in terms of rates and taxes, which will go towards town development.

Based on the evidence produced during the assessment process, it is very unlikely that this project will have any significant negative impacts on the environment. It is therefore recommended that a clearance certificate be issued for the project.

TABLE OF CONTENTS

1.	INTRODUCTION	1
1.2	PROJECT BACKGROUND	1
1.3	PROJECT LOCATION	2
1.4	TERMS OF REFERENCE AND SCOPE OF PROJECT	4
1.5	ASSUMPTIONS AND LIMITATIONS	4
1.6	CONTENT OF ENVIRONMENTAL SCOPING REPORT	4
2.	LEGAL, POLICY AND INSTITUTIONAL FRAMEWORK	5
3.	ENVIRONMENTAL BASELINE DESCRIPTION	9
3.1.	SOCIAL ENVIRONMENT	9
3.1.1.	SOCIO-ECONOMIC CONTEXT	9
3.1.2.	ARCHAEOLOGICAL AND HERITAGE CONTEXT	9
3.2.	BIO-PHYSICAL ENVIRONMENT	10
3.2.1.	CLIMATE	10
3.2.2.	TOPOGRAPHY, GEOLOGY AND HYDROGEOLOGY	11
3.2.3.	TERRESTRIAL ECOLOGY	12
3.3.	SURROUNDING LAND USE	12
3.4.	PHYSICAL ENVIRONMENT	13
4.	PROJECT DESCRIPTION	15
4.1.	SITE DESCRIPTION	15
4.2.	DECISION FACTORS	15
4.3.	NO - GO ALTERNATIVE	17
5.	PUBLIC PARTICIPATION PROCESS	17
5.1.	PUBLIC CONSULTATION PROCESS PHASE 1	17
5.2.	PUBLIC CONSULTATION PROCESS PHASE 2	17
6.	ASSESSMENT METHODOLOGY	18
7.	MITIGATION HIERACHY	21
8.	POTENTIAL IMPACTS	22
8.1.	PLANNING AND DESIGN PHASE IMPACTS	22
8.1.1.	SURFACE AND GROUNDWATER	22
8.1.2.	FAUNA AND FLORA (BIODIVERSITY)	23
8.1.3.	EXISTING SERVICE INFRASTRUCTURE IMPACTS	23
8.1.4.	TRAFFIC IMPACTS	24
8.2.	CONSTRUCTION PHASE IMPACTS	24
8.2.1.	FLORA AND FAUNA	24
8.2.2.	PRESSURE ON EXISTING INFRASTRUCTURE	24
8.2.3.	SURFACE AND GROUND WATER IMPACTS	25
8.2.4.	HEALTH, SAFETY AND SECURITY IMPACTS	25

8.2.5.AIR QUALITY	25
8.2.6.NOISE IMPACTS	26
8.2.7.TRAFFIC IMPACTS.....	26
8.2.8.SOLID WASTE MANAGEMENT	26
8.2.9.STORAGE AND UTILISATION OF HAZARDOUS SUBSTANCES	27
8.2.10. SOCIAL IMPACTS	27
8.2.11. ARCHAEOLOGICAL.....	27
8.3. OPERATIONAL PHASE IMPACTS	28
8.3.1.AIR QUALITY	28
8.3.2.NOISE IMPACTS	28
8.3.3.WASTE MANAGEMENT.....	28
8.3.4.QUALITY OF LIFE	28
8.3.5.VISUAL AND SENSE OF PLACE IMPACTS	29
8.3.6.FUTURE DEVELOPMENT	29
9. SUMMARY OF POTENTIAL IMPACTS	29
10. CONCLUSION AND RECOMMENDATIONS	42
10.1. CONSTRUCTION PHASE IMPACTS	42
10.2. OPERATIONAL PHASE	42
10.3. LEVEL OF CONFIDENCE IN ASSESSMENT	42
10.4. MITIGATION MEASURES	42
10.5. OPINION WITH RESPECT TO THE ENVIRONMENTAL AUTHORISATION.....	43
11. REFERENCES	44

LIST OF FIGURES

Figure 1: Locality map of Walvis Bay.....	2
Figure 2: Locality map of the proposed development	3
Figure 3: EIA Flowchart for Namibia (SELH, 2012)	8
Figure 4: Average temperature graph for Walvis Bay (Climate-data, 2020a).....	10
Figure 5: Average monthly rainfall graph for Walvis Bay (Climate-data, 2020b).....	11
Figure 5: General area and surrounds of the proposed development site.	13
Figure 6: Mitigation Hierarchy	21

LIST OF TABLES

Table 1: Contents of the Scoping / Environmental Assessment Report	4
Table 2: Legislation applicable to the proposed development	6
Table 3: Statistics of Walvis Bay Urban Constituency	9
Table 4: Details of portions.....	15
Table 5: Table of Public Consultation Activities	17
Table 6: Impact Assessment Criteria	18
Table 7: Overview of potential impacts	29
Table 8: Proposed mitigation measures for the planning and design phase.....	32

Table 9: Proposed mitigation measures for the construction phase.....	34
Table 10: Proposed mitigation measures for the operational phase.....	40

LIST OF ANNEXURES

Annexure A:	Proof of site notices/ posters
Annexure B:	Proof of advertisements
Annexure C:	Photo Plates
Annexure D:	Public Participation process
	1) I&AP database & Registered List
	2) Notification sent of BID
	3) Comments received (Phase 1)
Annexure E:	Curriculum Vitae of Environmental Assessment Practitioner
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
ESR	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: DEA	Ministry of Environment, Forestry and Tourism: Department of Environmental Affairs
MURD	Ministry of Urban and Rural Development
MWTC	Ministry of Works Transport and Communication
PPP	Public participation process
p/km ²	People per square kilometre
SADC	Southern African Development Community
USAID	United States Agency for International Development

1. INTRODUCTION

1.1 Project Background

Namibia has made great strides to position itself as a regional logistic hub in the Southern African region. Through the Walvis Bay Corridors, the port of Walvis Bay is linked to major cities and towns in SADC such as Gaborone, Johannesburg, Livingstone, Ndola, Lubumbashi, Santa Clara etc.

Namibia in general and Walvis Bay in particular is also seen as a trade logistic alternative to South African and East-African trade channels that are experiencing challenges including multiple inefficient border crossings, worsening security, xenophobia and social instability. The country is becoming an increasingly attractive investment option for South African manufacturers, mining companies seeking to benefit from resources and logistics enterprises seeking a more cost-effective location.

It is thus important that Walvis Bay takes advantage of this position to elevate the town's economic profile and augment the local and national economic development. In order to realise this the town has to interrogate its capacity to meet the demand of the much-needed services and land as a result of the above dynamics. In response to this, the Municipality of Walvis Bay, as the proponent, intends to undertake the following activities:

- a) Subdivision of Remainder Portion B of the Farm Walvis Bay Town and Townlands No. 1 into Portions 238-253 and Portion 254 (Street) and
- b) Rezoning of Portions 238-253 (Portions of Remainder Portion B) from "Undetermined" to "Light Industrial".

The Municipal Council has considered the above application in terms of the Urban and Regional Planning Act, 2018 (Act No. 5 of 2018) and in accordance with the Local Authorities Act, 1992 (Act No. 23 of 1992), as amended and recommended to the Urban and Regional Planning Board in accordance with Section 109(2)(a) of the Urban and Regional Planning Act (the Act) for consideration by the Board and approval by the Minister of Urban and Rural Development.

The above activity is discussed in more detail in Chapter 4. The proponent appointed Environam Consultants Trading cc (ECT) to undertake the Environmental Impact Assessment (EIA) in order to obtain an Environmental Clearance Certificate (ECC) for the activity from the Office of the Environmental Commissioner in the Ministry of Environment, Forestry and Tourism (MEFT).

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) of 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 proposed development and related infrastructure and services.

The EIA process would also provide an opportunity for the public and key stakeholders to provide comments and participate in the process. It will also serve the purpose of informing the proponent’s decision-making, and that of MEFT.

1.2 Project Location

Remainder Portion B is located within the Industrial area of Walvis Bay Extension 5, along Independence Road. It is situated on the coordinates lat: -22.932566; long: 14.520399. Refer to **Figure 1** below for the locality map of Walvis Bay, and **Figure 2** for the locality map of the proposed development.



Figure 1: Locality map of Walvis Bay

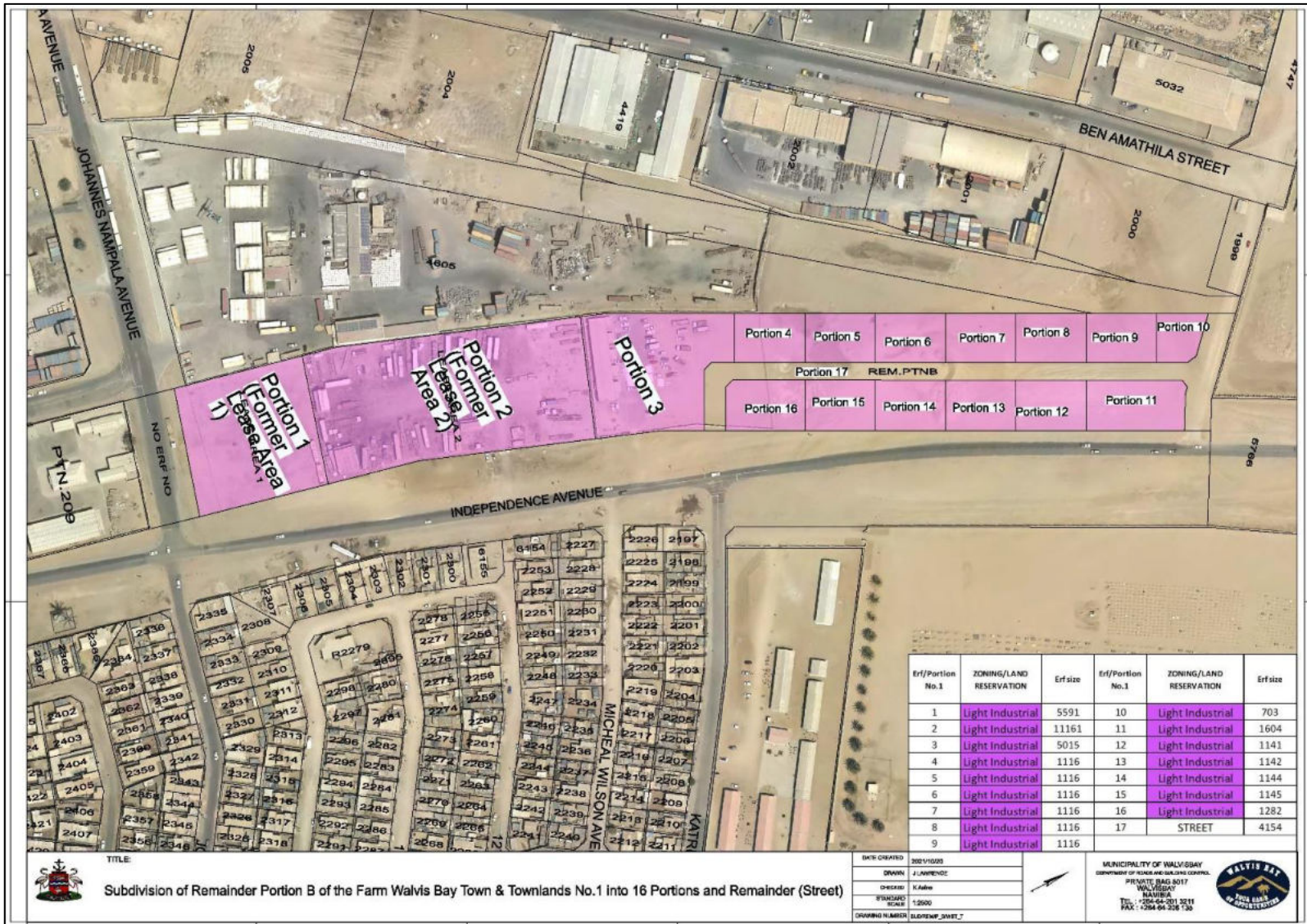


Figure 2: Locality map of the proposed development

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 proposed Subdivision of Remainder Portion B of the Farm Walvis Bay Town and Townlands No. 1 into Portions 238-253 and Portion 254 (Street) and Rezoning of Portions 238-253 (Portions of Remainder Portion B) from "Undetermined" to "Light Industrial" and associated infrastructure as indicated in section 1.1 above. This includes consultations with client; site investigations and analysis; stakeholder consultations; impact analysis; mitigation formulation; report writing; and draft Environmental Management Plan.

1.4 Assumptions and Limitations

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

- Assumes the information provided by the proponent is accurate and discloses all information available.
- Various layout alternatives were initially considered by the proponent, having taken due regard of the natural and environmental constraints, and the unique character and appeal of Walvis Bay. The current designs thus present the most feasible results.

1.5 Content of Environmental Scoping Report

In terms of Section 8 of the gazetted EIA Regulations certain aspects must be included in a Scoping Report. **Table 1** below delineate, for ease reference, where this content is found in the Environmental Scoping Report.

Table 1: Contents of the Scoping / Environmental Assessment Report

Section	Description	Section of ESR/ Annexure
8 (a)	The curriculum vitae of the EAPs who prepared the report;	Refer to Annexure E
8 (b)	A description of the proposed activity;	Refer to Chapter 4
8 (c)	A description of the site on which the activity is to be undertaken and the location of the activity on the site;	Refer to Chapter 3
8 (d)	A description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed listed activity;	Refer to Chapter 3
8 (e)	An identification of laws and guidelines that have been considered in the preparation of the scoping report;	Refer to Chapter 2

Section	Description	Section of ESR/ Annexure
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 D
	(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 D
8 (g)	A description of the need and desirability of the proposed listed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives have on the environment and on the community that may be affected by the activity;	Refer to Chapter 4
8 (h)	A description and assessment of the significance of any significant effects, including cumulative effects, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the proposed listed activity;	Refer to Chapter 7
8 (i)	terms of reference for the detailed assessment;	Refer to Chapter 1
8 (j)	An environmental management plan	Refer to Annexure F

2. LEGAL, POLICY AND INSTITUTIONAL FRAMEWORK

The principle environmental regulatory agency in Namibia is the Office of the Environmental Commissioner within the Directorate of Environmental Affairs of the Ministry of Environment, Forestry and Tourism. Most of the policies and legislative instruments have their basis in two clauses of the Namibian Constitution, i.e. Article 91 (c) and Article 95 (l); however, good

environmental management finds recourse in multiple legal instruments. Table 2 below provides a summary of the legal framework considered to be relevant to this development and the environmental assessment process.

Table 2: 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) The construction of Oil, water, gas and petrochemical and other bulk supply pipelines. Activity 10.1 (b) The construction of public roads. Activity 10.2 (a) The route determination of roads and design of associated physical infrastructure where - it is a public road.
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 EIA process should incorporate the aspects outlined in the guidelines.
Namibia Vision 2030	Vision 2030 states that the solitude, silence and natural beauty that many areas in Namibia provide are becoming sought after commodities and must be regarded as valuable natural assets.	Care should be taken that the development does not lead to the degradation of the natural beauty of the area.
Water Act No. 54 of 1956	Section 23(1) deals with the prohibition of pollution of	The pollution of water resources should be avoided during

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	underground and surface water bodies.	construction and operation of the development.
The Ministry of Environment, Forestry and Tourism (MEFT) Policy on HIV & AIDS	MEFT has 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/s have to 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 construction workers interact with local communities.
Urban and Regional Planning Act, 2018 (Act No. 5 of 2018)	The Act consolidates the laws relating to urban and regional planning.	Amongst others it provides: <ul style="list-style-type: none"> • for the preparation, approval, review and amendment of zoning schemes; • for the subdivision and consolidation of land.
Township and Division of Land Ordinance 11 of 1963	The Townships and Division of Land Ordinance regulates subdivisions of portions of land falling within a proclaimed Local Authority area.	In terms of Section 19 such applications are to be submitted to the Townships Board
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. Sections 34-47 make provision for the aspects of water and sewerage.	The development has to be comply with the 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.
Public Health Act no 36 of 1919	Section 119 prohibits persons from causing nuisance.	Contractors and residents of the proposed extensions are to comply with these legal requirements.
Public and Environmental Health Act 1 of 2015	This act provides a framework for a structured uniform public and environmental health system in Namibia.	Covid-19 protocols will be legislated by this provision, amongst others.
Nature Conservation Ordinance no 4 of 1975	Chapter 6 provides for legislation regarding the protection of indigenous plants	Indigenous and protected plants have to be managed within the legal confines.
Atmospheric Pollution Prevention Ordinance (No. 11 of 1976).	The Ordinance objective is to provide for the prevention of the pollution of the atmosphere, and for matters incidental thereto.	All activities on the site will have to take due consideration of the provisions of this legislation.
Roads Ordinance 17 of 1972	This Ordinance consolidates the laws relating to roads.	The provisions of this legislation have to be taken into consideration in as far as access to the development site is concerned.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Roads Authority Act, 1999	Section 16(5) of this Act places a duty on the Roads Authority to ensure a safe road system.	Some functions of the Roads Ordinance 17 of 1972 have been assigned to the Roads Authority.
Walvis Bay Town Planning Scheme	The town planning scheme has as its general purpose the co-ordinated and harmonious development of the local authority area, or the area or areas situate therein.	Procedures to manage zoning are stipulated in the Town planning Scheme.

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.

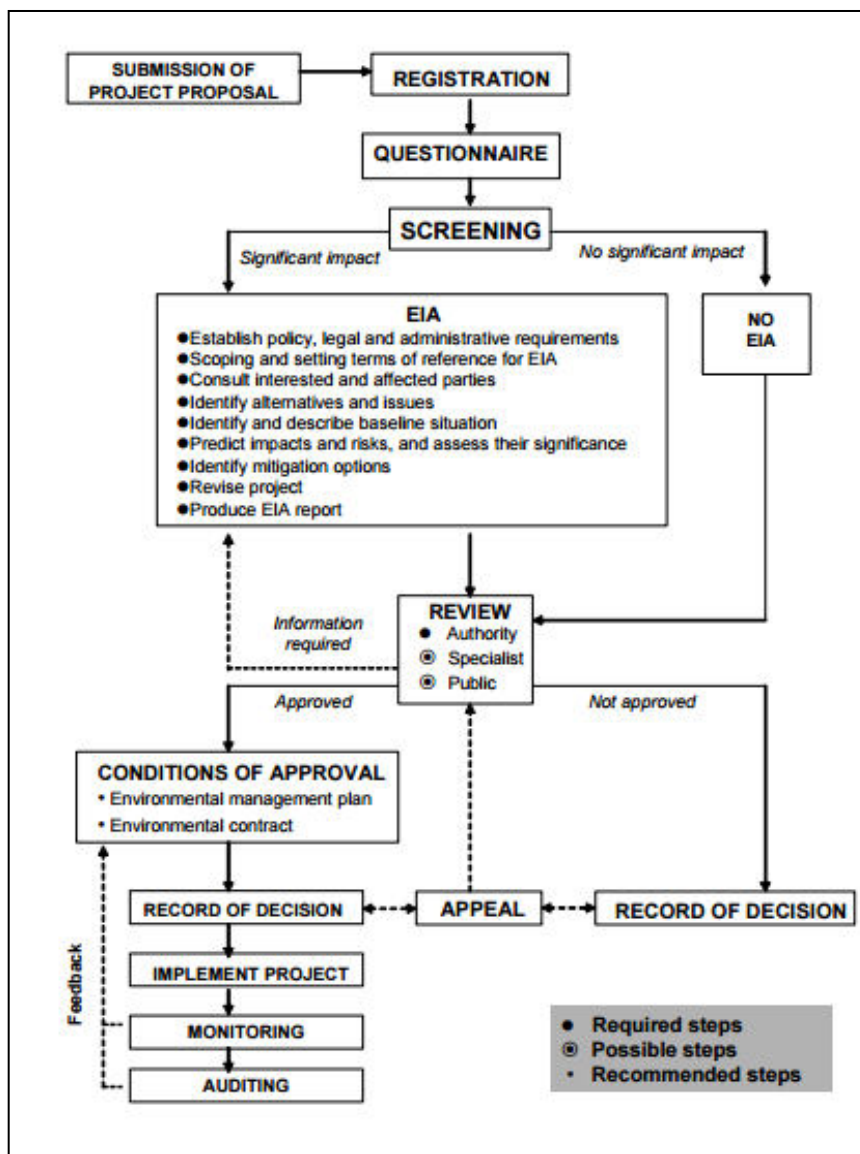


Figure 3: EIA Flowchart for Namibia (SELH, 2012)

3. ENVIRONMENTAL BASELINE DESCRIPTION

3.1. Social Environment

3.1.1. Socio-Economic Context

The statistics shown in Table 3 below are derived from the 2011 Namibia Population and Housing Census (NSA, 2011):

Table 3: Statistics of Walvis Bay Urban Constituency

WALVIS BAY URBAN CONSTITUENCY	
Population	35,828
Females	16,478
Males	19,350
Private Households	10,317
Population under 5 years	10%
Population aged 5 to 14 years	14%
Population aged 15 to 59 years	72%
Population aged 60 years and above	
Female: male ratio	100:117
Literacy rate of 15 years old and above	99%
Head of household - Females	33%
Head of household - Males	67%
People above 15 years who have never attended school	3%
People above 15 years who are currently attending school	9%
People above 15 years who have left school	86%
People with disability	2%
People aged 15 years and up who belong to the labour force	81%
Population employed	73%
Homemakers	12%
Students	47%
Retired, too old etc.	40%
Income from pension	2%
Income from business and non-farming activities	9%
Income from farming	0%
Income from cash remittance	5%
Wages and salaries	80%

3.1.2. Archaeological and Heritage Context

While many archaeological sites have been found along the Namibian coast and some sites provide evidence of coastal occupation for a long time, many of these are considered “lucky finds” since the chances of artefacts surviving long and then being found are obviously small. As a result, the number of known archaeological sites with very old artefacts is few (Raison,

2016). It is unlikely that the development site will have any significant archaeological resources; however, an accidental find procedure may be required. If any heritage or culturally significant artefacts are found during the construction, construction must stop and the National Heritage Council of Namibia immediately notified.

3.2. Bio-Physical Environment

3.2.1. Climate

Walvis Bay is considered to have a desert climate. During the year, there is virtually no rainfall. The Köppen-Geiger climate classification is BWk. In Walvis Bay, the average annual temperature is 16.6 °C. In a year, the average rainfall is 11 mm. The least amount of rainfall occurs in May. Most precipitation falls in March, with an average of 5 mm. The temperatures are highest on average in February, at around 19.2 °C. In September, the average temperature is 13.7 °C. It is the lowest average temperature of the whole year (Climate-data, 2020). See **Figure 4** for an average temperature graph and **Figure 5** for an average rainfall data for Walvis Bay.

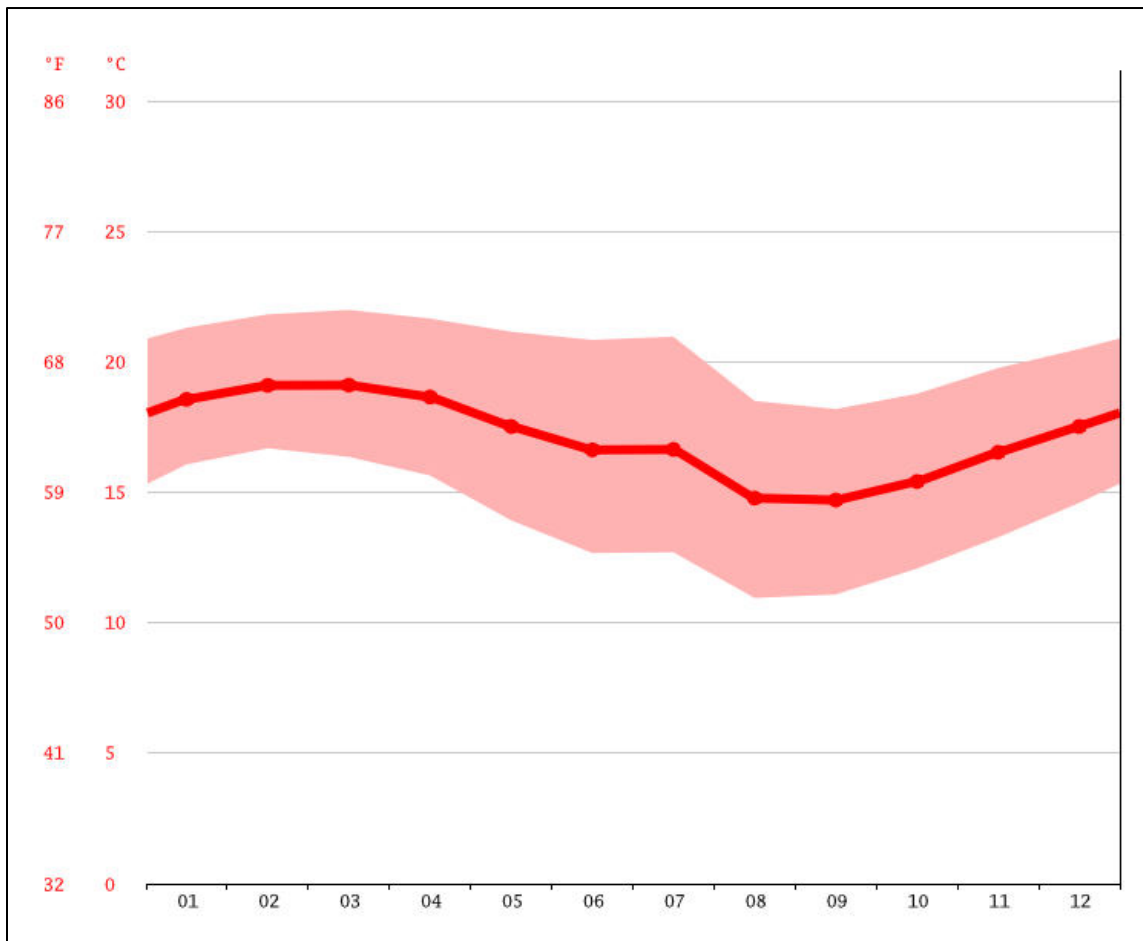


Figure 4: Average temperature graph for Walvis Bay (Climate-data, 2023a)

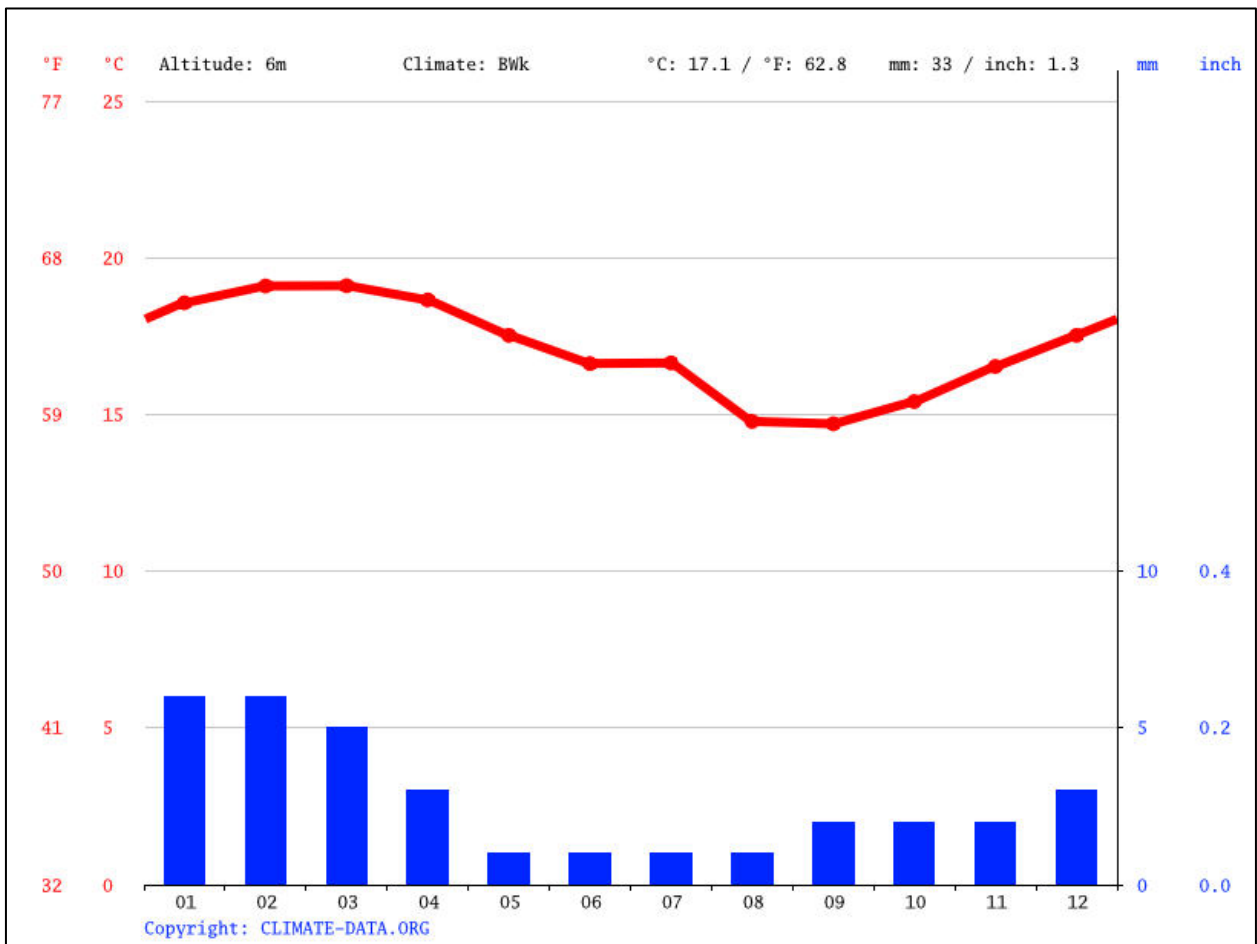


Figure 5: Average monthly rainfall graph for Walvis Bay (Climate-data, 2023b)

3.2.2. Topography, Geology and Hydrogeology

The Erongo Region, stretches from the Central Plateau westwards across the Central-Western Plains and Escarpment to the Central Namibian coast roughly over a distance between 200 and 350 km, and Northwards from the Ugab River in the north to the Kuiseb river in the south over a distance of up to 300 km, covers an area of 63,586 km², which is 7.7 per cent of Namibia’s total area of about 823,680 km². On the Western side it is flanked by the Atlantic Ocean. Erosion cutting eastwards into the higher ground led to the formation of the Central-Western Plains, leading to the formation of the catchment area of several major ephemeral rivers such as the Khan, Omaruru, Swakop and Ugab, the water of these rivers reach the sea when in full flood during a good rainy season (ERC, 2020).

The Southern boundary of the Kuiseb River distinctively divides the gravel plains to the North and the large sea of dunes to the South, however this river does not reach the sea during times of flood but the water instead disappears into the sand at the Kuiseb Delta, from which the town of Walvis Bay extracts underground water for its supplies.

In the Erongo Region, the land rises steadily from sea level to about 1,000 m across the breadth of the Namib. The Namib land surface is mostly flat to undulating gravel plains, punctuated with occasional ridges and isolated 'inselberg' hills and mountains. The eastern edge of the Namib is marked by the base of the escarpment in the southern part of the region. In the northern part, the escarpment is mostly absent and there is a gradual rise in altitude to over 1,500 m (SAIEA, 2011). The proposed site on which the development will be undertaken can be described as relatively flat.

The desert geology consists of sand seas near the coast, while further inland there is an occurrence of gravel plains and scattered mountain outcrops. Some of the highest sand dunes, up to around 300 m high, can be found here (ERC, 2020). Water for domestic and industrial use in Walvis Bay comes mainly from the Kuiseb aquifer in the lower Kuiseb River. These aquifers are recharged by runoff from the central highlands in central Namibia where rainfall is more reliable and more significant than at the coast (Nacoma, 2010).

3.2.3. Terrestrial Ecology

The bare gravel plains within an area of about 40 km of the coast, receive frequent fog moisture providing an ideal home to rich growths of lichens, many of which are endemic to Namibia. Lichen help to bind the soil rendering it less vulnerable to wind erosion, they do this by forming a "carpet" on the surface pavement of small stones and gravel, or by creating a surface crust on the soil (Nacoma, 2010). No vegetation could be found on the proposed site which is bare for the most part.

Some endemic coastal invertebrates and reptiles inhabit a narrow belt of dune hummocks within the Namibian coastal strip. This zone also supports marine life and surf zone species. Damara terns, which are near endemic to Namibia and near threatened, are found in concentrated numbers along the coastline stretching from south of Walvis Bay to about the Ugab river, where they nest on gravel plains within 3 - 5 km of the shore and forage over the shallow Bay water, over reefs or in salt ponds (Nacoma, 2010).

There are artificially high densities of jackals and gulls due to the increase in numbers of seal colonies and line fishermen which apply heavy predator pressure on the nesting terns. The central Namib coast is also home to the two vulnerable flamingo species, the greater and the lesser (Nacoma, 2010). There are no protected or red data listed plants or animal species found on the site.

3.3. Surrounding Land Use

Remainder Portion B comprises of the Municipal Industrial stalls, Erongo Logistics development and the rest of the site is used to temporary store building sand. A Namcor pipeline runs adjacently south of Remainder Portion B. **See Figure 5** below for the general area and surrounds of the proposed development site.



Figure 6: General area and surrounds of the proposed development site.

3.4. Physical Environment

The infrastructure needs of the proposed project can be categorised into two broad classifications namely:

- Basic infrastructure that includes electricity and roads.
- Environmental infrastructure that consists of water supply, sewage and drainage systems, solid waste management and landscaping.

These newly created erven are in townships which are already serviced with basic township establishment amenities such as tarred roads, electricity, potable water pipelines and sewer reticulation systems. Bulk infrastructure services such as water and sewer will therefore be extended from the existing services in the vicinity. Electricity will be provided to the site in consultation with the regional electricity distributor, ErongoRED. Ingress will be obtained from Independence Avenue.

4. PROJECT DESCRIPTION

4.1. Site Description

The proposed development is made up of two components, i.e. subdivision and rezoning.

- a) Subdivision of Remainder Portion B of the Farm Walvis Bay Town and Townlands No. 1 into Portions 238-253 and Portion 254 (Street) and
- b) Rezoning of Portions 238-253 (Portions of Remainder Portion B) from "Undetermined" to "Light Industrial".

The subdivision will be in accordance with the plan shown in **Figure 2** and the following table.

Table 4: Details of portions

PORTION NUMBER	ZONING	SIZE (M ²)
Portion 1	Light Industrial	5591
Portion 2	Light Industrial	11161
Portion 3	Light Industrial	5015
Portion 4	Light Industrial	1116
Portion 5	Light Industrial	1116
Portion 6	Light Industrial	1116
Portion 7	Light Industrial	1116
Portion 8	Light Industrial	1116
Portion 9	Light Industrial	1116
Portion 10	Light Industrial	703
Portion 11	Light Industrial	1604
Portion 12	Light Industrial	1141
Portion 13	Light Industrial	1142
Portion 14	Light Industrial	1144
Portion 15	Light Industrial	1145
Portion 16	Light Industrial	1282
Street		4154

The second part of the application is for the rezoning of the following:

Rezoning of Portions 238-253 (Portions of Remainder Portion B) from "Undetermined" to "Light Industrial"

The rezoning will be in accordance with the plan shown in **Figure 2**.

4.2. Decision Factors

The following factors served as informants and were considered when preparing the layout designs for the proposed development:

- Remainder Portion B is zoned as Undetermined to allow for future expansion and zoning of the site.
- The remainder of the site is unoccupied at the moment and is a waste of useful land resources.
- The proposed site has high potential to be developed to integrate the Walvis Bay Industrial area.
- The site is relatively flat and does not require major earthworks.
- Remainder Portion B is not environmentally sensitive as it falls within the build-up environment of Walvis Bay town land.
- No significant traffic related issues will occur as the result of the proposed subdivision and rezoning.
- The subdivision and rezoning will enable residents and other potential buyers to acquire legal ownership of these erven.
- The subdivision, alteration and rezoning will not conflict with the Walvis Bay Town Planning Scheme.
- Light Industrial erven have potential to create employment opportunities to local people.
- Small light industrial erven require less capital compared to larger industrial erven. It is therefore easier for the proposed erven to be developed by emerging or small and medium entrepreneurs who usually have limited resources.
- The proposed subdivision, alteration and rezoning will not negatively affect the amenity of the area.
- These newly created erven are in townships which are already serviced with basic township establishment amenities such as tarred roads, electricity, potable water pipelines and sewer reticulation system.
- Before the commencement of any future land use developments - all the individual future land use development on the created individual erven, which are listed as part of the "*List of activities that may not be undertaken without Environmental Clearance Certificate*", will be subjected to individual EIAs in accordance with the

Environmental Management Act (No. 7 of 2007) and its Environmental Impact Assessment Regulations (2012).

- The creation of the proposed light industrial erven will in the future generate revenue for Council in terms of rates and taxes.
- No objections were received against the subdivision and rezoning application.

4.3.No - Go Alternative

The no-go alternative would essentially entail maintaining the current situation, whereby residents of Walvis Bay and potential investors will not have access to affordable additional serviced light industrial erven offered by the new development. This will inhibit added growth of the town and empowerment of the residents and investors. In addition, the potential job opportunities both during the construction and operational phases of the proposed development will not be realised. While the no-go alternative will not result in any negative impacts the potential positive impacts will be lost.

5. PUBLIC PARTICIPATION PROCESS

5.1. Public Consultation Process Phase 1

In terms of Section 21 of the EIA Regulations a call for public consultation with all I&APs during the EIA process is required. This entails consultation with members of the public and providing them an opportunity to comment on the proposed project. The Public Consultation Process does not only incorporate the requirements of Namibia's legislation, but also takes account of national and international best practises. Please see **Table 5** below for the activities undertaken as part of the public participation process.

Table 5: Table of Public Consultation Activities

ACTIVITY	REMARKS
Placement of Notices/ posters on site and notice boards	See Annexure A
Placing advertisements in two newspapers for two consecutive weeks, namely Namib Times, Confidante and Windhoek Observer	See Annexure B
Written notice to Interested and Affected Parties via Email	See Annexure D

The comment period of the initial public participation process commenced on **26 May 2023** and ended on **09 June 2023**.

5.2.Public Consultation Process Phase 2

The second phase of the Public Consultation Process involved the lodging of the Draft Environmental Scoping Report (DESR) to all registered I&AP for comment. Registered and potential I&APs were informed of the availability of the DESR for public comment. An Executive

Summary of the DESR was included in the communication that went out to the registered I&APs. I&APs were given time until **07 July 2023** to submit comments or raise any issues or concerns they may have with regard to the proposed project.

In addition, from the Municipality of Walvis Bay side, the subdivision and rezoning were advertised in the Namib Times, New Era and Government Gazette. Rezoning and subdivision notices were also displayed on the site and on the Municipality of Walvis Bay's notice board. Furthermore, adjacent landowners were notified about the above application.

6. ASSESSMENT METHODOLOGY

Impact assessments depend on the nature and magnitude of the proposed activity, as well as the type of environmental control envisaged for the particular project. Given the nature of the proposed activity, i.e., a construction project, the identification and assessment of the potential impacts will be based on the type and scale of the various activities associated with the project.

Assessment of the predicted significance of impacts for a proposed development is by its nature, inherently uncertain. To deal with such uncertainty in a uniform manner, standardised and internationally recognised methodologies have been developed. One such accepted methodology is applied in this study to assess the significance of the potential environmental impacts of the proposed development, outlined as follows in **Table 6**.

Table 6: Impact Assessment Criteria

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

CRITERIA	CATEGORY
<p>Intensity Describe the magnitude (scale/size) of the Impact</p>	<p>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 Medium: Natural and/or social functions/processes are notably altered in a modified way High: Natural and/or social functions/processes are severely altered and may temporarily or permanently cease</p>
<p>Probability of occurrence Describe the probability of the Impact <u>actually</u> occurring</p>	<p>Improbable: Not at all likely Probable: Distinctive possibility Highly probable: Most likely to happen 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%) Probable/Med: Moderate confidence regarding information available (40-80%) 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 Very low: Impacts will be site specific and temporary with no mitigation necessary. Low: The impacts will have a minor influence on the proposed development and/or environment. These impacts require some thought to adjustment of the project design where achievable, or alternative mitigation measures Medium: Impacts will be experienced in the local and surrounding areas for the life span of the development and may result in long term changes. The impact can be lessened or improved by an amendment in the project design or implementation of effective mitigation measures. High: Impacts have a high magnitude and will be experienced regionally for at least the life span of the development, or will be irreversible. The impacts could have the no-go proposition on portions of the development in spite of any mitigation measures that could be implemented.</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.

7. MITIGATION HIERACHY

The mitigation hierarchy is a tool aimed at helping to manage biodiversity risk, and is commonly applied in Environmental Impact Assessments. The most common reference point for banks providing project finance is mitigation measures; this provides the financial institutions with information on how environmental and social risks will be managed (See **Figure 7** below). These cover avoidance, minimization, restoration and compensation amongst other things. 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 further steps.

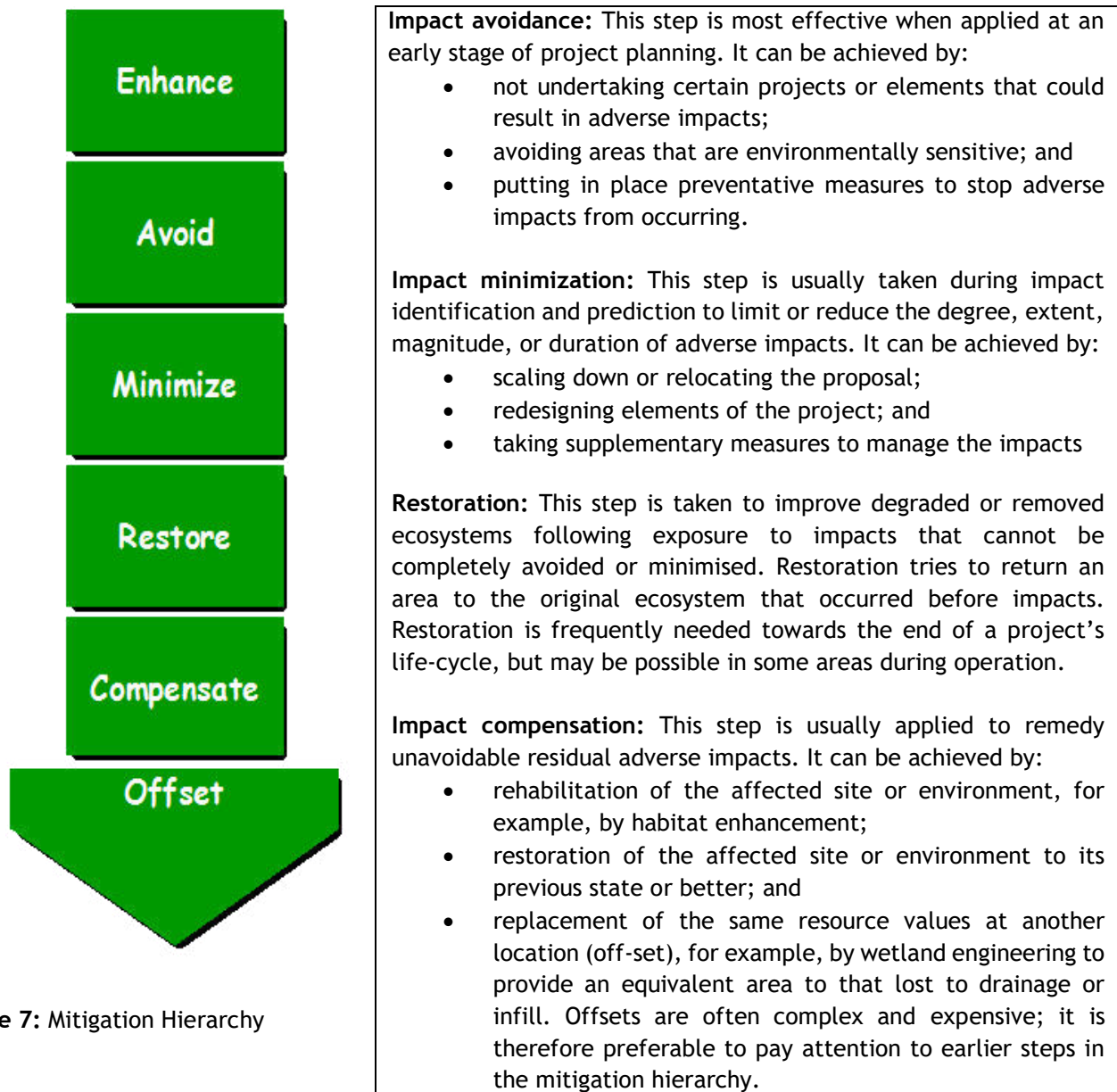


Figure 7: Mitigation Hierarchy

8. POTENTIAL IMPACTS

This Chapter describes the potential impacts on the biophysical and socio-economic environments, which may occur due to the proposed activities. These include potential impacts, which may arise during the planning and design phase, potential construction related impacts (i.e. short to medium term) as well as the operational impacts of the proposed development (i.e. long-term impacts).

The assessment of potential impacts will help to inform and confirm the selection of the preferred project plan and design to be submitted to MEFT: DEA for consideration. In turn, MEFT: DEA's decision on the environmental acceptability of the proposed project and the setting of conditions of authorisation (should the project be authorised) will be informed by this chapter, amongst other information contained in this Report.

The baseline and potential impacts that could result from the proposed development are described and assessed with 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.

8.1. Planning and Design Phase Impacts

During the planning and design phase consideration is given to aspects such as surface and groundwater; fauna and flora; existing infrastructure; and traffic.

8.1.1. Surface and Groundwater

Walvis Bay town is terrestrially surrounded by the Dorob National Park, managed by the Ministry of Environment, Forestry and Tourism. The project location is outside of protected areas. The proposed development site is located approximately 500m from the shoreline of the Atlantic Ocean, this puts the surface and ground water resources in the area at risk of pollution. Subsurface sediments to the shallow groundwater is permeable and can therefore transport contaminants to the groundwater. Groundwater can, in turn, serve as a pathway for contaminants to reach the ocean where fauna and flora can be impacted. While groundwater in the vicinity will not be the source of potable water, it should nevertheless be protected (Botha et al., 2016). This is likely to happen in the absence of well designed and constructed water, wastewater and storm water drainage infrastructure. The storage and handling of products from future business activities on unpaved surfaces may lead to contamination of underground water resources through seepage.

Poorly constructed and maintained service infrastructure in general may also for example lead to seepage of waste water into the water bodies. Surface and ground water contamination may result from nonpoint source runoff from nearby activities; urban runoff conveyed to the sea by storm sewer system; and occurrences of bank erosion (Sosiak and Dixon, 2006). Uncontrolled solid waste management is another potential pollutant of the surface water. Ensure that storage areas are paved with impermeable material to guarantee containment and prevent

seepage into the underground. A baseline sampling and testing of the underlying soil and groundwater should be conducted to understand the character of the soil and water table. Due to the extreme corrosive coastal environment, chemical weathering of metal and concrete structures is a concern, therefore the choice of building materials is important and regular maintenance is essential to maintain the integrity of all infrastructure (Botha et al., 2016).

8.1.2. Fauna and Flora (Biodiversity)

Walvis Bay falls within an Important Bird Area (IBA) NA014 and NA013, with IBA NA014 renowned as the most important coastal wetland area in Southern Africa. It serves as an over-wintering area for important birds such as Greater and Lesser Flamingos, Great White Pelican, and Chestnut-Banded Plovers (Faul, A., Botha, P. Coetzer, W. 2019).

Duck and geese populations are also supported by the artificial wetland, the sewerage ponds, in the vicinity. IBA NA013, consisting of the coastal area between Walvis Bay and Swakopmund is known to host approximately 13 000 shorebirds of approximately 31 species. It also supports the densest colony of breeding Damara Terns known. There is also a bird island (guano platform), that provides roosting and breeding sites to large numbers of birds. Pollution events, such as oil spills, in the areas surrounding the port can have serious negative impacts on the bird breeding and feeding grounds and for species such as the Bank Cormorant (Faul, A., Botha, P. Coetzer, W. 2019).

The marine animals found in the Walvis Bay area are mainly cetaceans such as the Common Bottlenose Dolphins, the Namibian endemic Heaveside's Dolphins, Dusky Dolphins, Humpback Whales, Southern Right Whales and Pigmy Right Whales. Cape Fur Seals are also a common occurrence. Five species of turtles are found in the Namibian coastal waters generally, the most common in the area of interest being the Leatherback, and the Green Sea Turtles and to a lesser extent, the Hawksbill Sea Turtle (Faul, A., Botha, P. Coetzer, W. 2019).

These marine animals serve as an important tourist attraction, contributing a great deal to this million-dollar industry. Therefore, pollution of the marine environment will have a damaging effect on the populations of these mammals (Faul, A., Botha, P. Coetzer, W. 2019).

8.1.3. Existing Service Infrastructure Impacts

The project will lead to increased pressure on existing infrastructure such as roads, service lines etc. due to the increased number of people who will be using these facilities which will directly translate into an increase in volume of the relevant parameter. Bulk water and sewerage services will be supplied by the Municipality of Walvis Bay from the existing network in the area. Electricity will be supplied by the regional electricity distributor, Erongo RED.

It is important to note that the country in general is constrained and faced with a crisis in terms of water and electricity availability; and an increased demand for these amenities will further add to the predicament. This additional demand is expected to be fairly Medium-Low.

Once the properties have been developed, it is the responsibility of each new property owner, to apply for the appropriate services such as electricity and water. The proposed development will make use of added infrastructure specifically electricity, sewer and water. This additional demand is expected to be fairly medium to low considering the type of activities envisaged. It is recommended that alternative and renewable source 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. Designs and building materials should be as such to reduce dependency on artificial heating and cooling in order to limit the overall energy consumption. Water saving mechanisms should be incorporated within the proposed development's design and plans in order to further reduce water demand

By applying a series of the mitigation measures as proposed for the development it is believed that any potential impacts can be significantly reduced. The water volumes and electrical demands for the project is not expected to have a significant negative impact on the infrastructure. It is critical that any service infrastructure should be designed and construction supervised by qualified and registered engineering professionals.

8.1.4. Traffic Impacts

Traffic is expected to increase during the operational phase of the project. Due to the nature of the development and the land use, vehicles will frequent the area. These would mostly consist of vehicles used by clients, workforce and business owners.

8.2. Construction Phase Impacts

During the construction phase the following potential impacts have been identified: fauna and flora; pressure on the existing infrastructure; surface and ground water; health, safety and security impacts; air quality; noise, traffic; solid waste management; hazardous substances; social; and archaeological impacts.

8.2.1. Flora and Fauna

There are no protected or red data listed plants or animal species found on the site however care should be taken that no risk is posed to the adjacent marine ecosystem, including seabirds, that may be found in the area during the construction phase. See also **8.1.2** in the planning and design phase impacts, which is applicable to this section.

8.2.2. Pressure on existing infrastructure

During the construction phase there will be an additional demand for basic municipal services such as water, electricity and sewer. The services will be used for both human consumption and for construction purposes. These impacts will however only be limited to the construction phase and will thus have minimal short-term impact. The risk of wastage and pollution may occur if no proper management actions are implemented.

8.2.3. Surface and Ground Water Impacts

Surface and ground water impacts may be encountered during the construction phase. The risk of contaminating such water sources can be increased by accidental spillage of oils and fuels and any other equipment used during construction; chemical contamination from construction materials such as cement, paint and mechanical fluids.

Storm water runoff may run into the site thereby causing interference to the construction operation. Construction of offices and paved roads could result in additional runoff through creation of impervious areas and compaction of soils. Impervious areas and compacted soils generally have higher runoff coefficients than natural area, and increased flood peaks are a common occurrence in developed areas. This risk is minimised by the fact that the construction period will be a short-term activity.

8.2.4. Health, Safety and Security Impacts

The potential health and safety impacts of the proposed project include the occupational health and safety risks related to the project activities. A number of activities undertaken during development of the proposed project have potential risks to the health and safety of the workers. During the construction phase, the potential health and safety risks the workers are likely to be exposed to include: Injuries resulting from operation of machinery, equipment, tools and construction vehicle, and road accidents.

During construction of the proposed project, it is expected that construction workers are at risk of injuries and hazards as a result of accidents, handling hazardous waste, lack or neglect of the use of protective wear etc. All necessary health and safety guidelines should be adhered to so as to avoid such occurrences. It is recommended that before construction activities commence, the materials and equipment are well inspected and that they conform to the relevant occupational health and safety standards.

8.2.5. Air Quality

During the construction phase fugitive dust and exhaust gases generated have a potential impact on the air quality of the area and its surroundings. Dust is a major component of air pollution and could negatively affect the health of nearby communities if not mitigated. Due to the proximity of the development site to the Independence Avenue, traffic on this road is also at risk of being impacted by dust. These are however short-term impacts. Dust is generated mainly from the following activities:

- Excavations and stockpiles during site clearance;
- Use of heavy vehicles, machinery and equipment;
- Procurement and transport of construction materials to the site.

8.2.6. Noise Impacts

Noise is perceived as one of the most undesirable consequences of a construction activity. The most common reported impacts are interference in oral communication and sleep disturbance. Construction activities are expected to generate noise levels to a limit of 85 decibels and other safety hazards. During the construction phase the proposed project will utilize machineries such as hydraulic excavator, mobile service crane, dump trucks and tipper trucks which are likely to generate noise. The contractor on site will be expected to provide well planned programs for equipment usage.

The construction works on site will most likely have noise impacts due to the moving machines (mixers, tippers), incoming vehicles to deliver construction materials and workers to site and other normal construction activities. This may prove to be a potential source of disturbance to the surrounding neighbours and a health hazard to the workers themselves. Such noise emissions should be minimised as much as possible from the source point while workers should be provided with appropriate personal protective wear. The construction activities will be limited to daytime.

8.2.7. Traffic Impacts

Traffic is expected to increase during the construction phase of the project. 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 vehicular traffic in the area. The safety of road users need to be considered especially on Independence Avenue.

8.2.8. Solid Waste Management

Large amounts of solid waste will be generated during construction of the project. These will include metal cuttings, rejected materials, surplus materials, surplus spoil, excavated materials, paper bags, empty cartons, empty paint and solvent containers, broken glass among others. Solid wastes if not well managed have a potential of causing disease outbreaks due to suitable breeding conditions for vectors of cholera and typhoid.

The construction workers will also generate faecal waste during their day-to-day operations. The generated waste needs proper handling to prevent diseases, for example cholera, typhoid and diarrhoea outbreak on the site. Unless this is addressed, it can prove to be an environmental/health disaster. Mobile toilets should be established on site to avoid such health risks.

Enough waste bins and skip containers should be availed to manage the solid waste. All solid waste should be disposed of at the designated landfill site of Walvis Bay as approved by the local authority.

8.2.9. 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 in certain circumstances. It covers manufacture, sale, use, disposal and dumping as well as import and export. 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 impact on the surrounding environment, if these substances spill and enter the environment.

8.2.10. Social Impacts

One of the main positive impacts during projects construction phase is the availability of employment opportunities especially to casual workers and several other specialised workers. Employment opportunities are of benefit both economically and in a social sense. In the economic sense it means abundant unskilled labour will be used in construction, hence economic production. Several workers including casual labourers, electricians and plumbers are expected to work on the site from start to the end. Apart from casual labour, semi-skilled and unskilled labour and formal employees are also expected to obtain gainful employment during the period of construction.

Through the use of locally available materials during the construction phase of the project including cement, concrete, timber, sand, ballast electrical cables etc. the project will contribute towards growth of the local, regional and national economy by contributing to the gross domestic product. The consumption of these materials, fuel oil and others will attract taxes including VAT which will be payable to the government hence increasing government revenue while the cost of these materials will be payable directly to the suppliers.

There are usually several informal businesses which come up during the construction periods of such projects. These include activities such as food vendors who benefit directly from the construction, staff members who buy food and other commodities from them. This will promote the informal sector in securing some temporary revenue and hence livelihood. The local community will benefit through preferential recruitment of local labour and procurement as far as possible.

8.2.11. Archaeological

Very limited archaeological investigations have been carried out at the study site; however, Walvis Bay and its surrounds are regarded as having global archaeological importance due to very well-preserved evidence of early contact between indigenous Namibian communities and sea-faring traders (Botha et al., 2016).

Two main archaeologically significant features in the study area have been identified. These are:

1. a group of shell-middens with an approximate age of 1,600 years that was found at the extinct mouth of the Tumas River; and
2. an undescribed tidal lagoon.

Molluscan fauna like *Bullia digitalis* and *Dosina lupines* was collected from the tidal lagoon and was dated to be $40,830 \pm 480$ years old. Evidence of human occupation is dated at $1,370 \pm 30$ years ago based on analysis of a pottery vessel found at the shell-midden sites. Remains of more recent human activity are shuttered concrete structures which may have been used during construction of the coastal railway line and coastal defence installations at Rand Rifles (Botha et al., 2016).

8.3. Operational Phase Impacts

The operational phase impacts that have been identified are: air quality; noise; waste management; quality of life; and visual impact.

8.3.1. Air Quality

The air quality in the area is considered to be fairly good. Various types of activities within the development area will result in increased dust and emission impacts, if not managed correctly. Dust and emissions associated with the proposed development will mostly be generated by vehicle movement; as well as from future industrial activities that generate emissions.

The entire development needs to be controlled and managed as required by the Public Health Act (Act No. 36 of 1919) and Atmospheric Pollution Prevention Ordinance (No. 11 of 1976). Dust is likely to have a larger impact when the internal road network and individual properties are not paved.

8.3.2. Noise Impacts

Operational noise associated with the proposed development is likely to be limited to general light industrial noise levels. It is however important that mitigation measures are applied to bring noise levels to acceptable limits, which are generally addressed by applicable municipal by laws.

8.3.3. Waste Management

The operational activities will likely generate a reasonable amount of solid waste. An adequate number of refuse receptacles should be placed on all the properties for the collection of waste, which should be emptied frequently and taken to the designated landfill site. This should be fitted into the municipal waste collection programme or alternatively assigned to a properly registered and competent contractor.

8.3.4. Quality of Life

The development will serve as an important economic activity that provides jobs. It also serves as a critical factor that attracts people including professionals and investors to migrate to and

invest in the town. These factors will in turn also have a positive impact on the quality of life of the residents in terms of household incomes. In addition, the development will have the following benefits to the residents and investor:

- The subdivision and rezoning will enable residents and other potential buyers to acquire legal ownership of these erven.
- Light Industrial erven have potential to create employment opportunities to local people.
- Small light industrial erven require less capital compared to larger industrial erven. It is therefore easier for the proposed erven to be developed by emerging or small and medium entrepreneurs who usually have limited resources.
- The creation of the proposed light industrial erven will in the future generate revenue for Council in terms of rates and taxes, which will go towards town development.

8.3.5. Visual and Sense of Place Impacts

The new development, once built up, will be visually prominent from many angles. While there are some existing structures in the surrounding area, the additional buildings and infrastructure to be erected on site will cause a higher visual impact to the natural area. The development will have an impact on the sense of place of the local community. Therefore, the aesthetics quality of the new structures has to be pleasing and designed to blend in with the natural surrounds.

8.3.6. Future Development

While an EIA is being developed for this exercise, it is important to note that any listed activity that will take place in future on any of the newly created portions/property will have to undertake a site and activity specific EIA in terms of the EIA Regulations and EMA.

9. SUMMARY OF POTENTIAL IMPACTS

A summary of the significance of the potential impacts from the proposed project assessed above is included in **Table 7**. The **Tables 8 - 10** provide a summary of the mitigation measures proposed for the impacts.

Table 7: Overview of potential impacts

Impacts	Negative		Positive		No Impact
	Short Term	Long Term	Short Term	Long Term	
Planning and Design Phase					
2. Surface and ground water	X				
4. Fauna and flora	X				
5. Existing infrastructure				X	
6. Traffic	X				
Construction Phase					
7. Fauna and flora	X				
8. Pressure on existing infrastructure	X				
9. Surface and groundwater	X				
10. Health, safety and security	X				
11. Air quality	X				
12. Noise	X				
13. Traffic	X				
14. Waste management	X				
15. Hazardous substances		X			
16. Social				X	
17. Archaeological	X				
Operational Phase					
18. Air quality		X			
19. Noise		X			



Impacts	Negative		Positive		No Impact
	Short Term	Long Term	Short Term	Long Term	
20. Waste management		X			
21. Quality of life				X	
22. Visual				X	

Table 8: Proposed mitigation measures for the planning and design phase

PLANNING AND DESIGN PHASE IMPACTS	
Impact	Mitigation Measures
Surface and ground water	<ul style="list-style-type: none"> • Appoint professional engineers to develop a detailed storm water management design as part of the infrastructure service provision of the development. • The service infrastructure should be designed and constructed by suitably qualified engineering professionals. • Develop and implement a preventative maintenance plan for the service infrastructure. • Ensure that storage areas are paved with impermeable material to guarantee containment and prevent seepage into the underground. The paving to be designed by an independent engineer. • Conduct baseline sampling and testing of the underlying soil and groundwater. • No dumping of waste products of any kind in or in close proximity to any water bodies. • Ensure that surface water accumulating on-site are channelled and captured through a proper storm water management system to be treated in an appropriate manner before disposal into the environment. • Wastewater should not be discharged directly into the environment. • Disposal of waste from the development should be properly managed. • Hazardous waste and contaminated water and soil must be disposed of at an appropriately designated facility or by approved contractors. Hazardous waste disposal certificates must be kept on file. • All hazardous substances must be stored in a properly bunded area to prevent any spillages from entering the surrounding environment. • Emergency response plans and spill contingency plans must be in place and include all fuels, chemicals or hazardous substances being handled. • Spill containment equipment such as absorbents must be readily accessible. Training in the use of these are paramount. • Any hazardous substance spill on the site must be cleaned and disposed of to prevent it from entering the ocean either by wind or water runoff. • Effluent must meet standards as per the effluent discharge permits and Water Quality Guidelines. • Use of reputable and well-trained contractors is essential.
Fauna and flora	<ul style="list-style-type: none"> • Report any extraordinary fauna sightings to the Ministry of Environment, Forestry and Tourism and / or Ministry of Fisheries and Marine Resources. • Ensure waste cannot be blown away by wind. • The establishment of habitats and of roosting and nesting sites for birds in the development area must be prevented where possible.

PLANNING AND DESIGN PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> To prevent bird collisions with structures at night, all lights used at the site should be directed downwards to the working surfaces and only be switched on when and where necessary.
Existing Service Infrastructure	<ul style="list-style-type: none"> Ensure professional design and construction of service infrastructure from qualified and registered engineers. Ensure consultation and compliance with relevant authorities responsible for services, such as the Municipality and Erongo Red. Developers must determine exactly where services amenities and pipelines are situated before construction / maintenance commences. Designs and building materials should be as such to reduce dependency on artificial heating and cooling in order to limit the overall energy demand. Water saving mechanisms should be incorporated within the proposed development's design and plans in order to further reduce water demands. Train employees on the importance of water and energy savings. Adhere to water quality guidelines in terms of The Water Act, 1956. Promptly detect and repair water pipe and tank leaks. Users to conserve water e.g. by avoiding unnecessary toilet flushing. Ensure taps are not running when not in use. Install water conserving taps that turn-off automatically when water is not being used. Switch off electrical equipment, appliances and lights when not being used. Install occupation sensing lighting at various locations such as storage areas which are not in use all the time. Install energy saving fluorescent tubes at all lighting points within the facility instead of bulbs which consume higher electric energy. Monitor energy use during the operation of the project and set targets for efficient energy use. Conduct regular inspections for drainage pipe blockages or damages and fix appropriately. Adhere to water quality guidelines in terms of The Water Act, 1956.
Traffic	<ul style="list-style-type: none"> Ensure that road junctions have good sightlines. Adhere to the speed limit. Implement traffic control measures where necessary. In cooperation with the relevant authority, erect clear signage regarding restricted areas and roads, access and exit points, speed limits etc. Trucks should not be allowed to obstruct any traffic or access points to any other businesses and facilities.

PLANNING AND DESIGN PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> If any extraordinary traffic impacts are expected, traffic management should be performed in conjunction with the local traffic department.

Table 9: Proposed mitigation measures for the construction phase

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
Fauna and flora	<ul style="list-style-type: none"> Prevent contractors from collecting wood, veld food, etc. during the construction phase. Report any extraordinary fauna sightings to the Ministry of Environment, Forestry and Tourism and / or Ministry of Fisheries and Marine Resources. Ensure waste cannot be blown away by wind. The establishment of habitats and of roosting and nesting sites for birds in the area must be prevented where possible. To prevent bird collisions with structures at night, all lights used at the site should be directed downwards to the working surfaces and only be switched on when and where necessary.
Pressure on existing infrastructure	<ul style="list-style-type: none"> Educate workforce on water saving measures. Ensure all potable water points are metered and regularly read. Promptly detect and repair water leaks. Ensure taps are not running when not in use. Ensure proper recycling of water from other uses for sprinkling dusty areas. Ensure that the workforce is provided with temporary toilets during the construction phase. Ensure electrical equipment, appliances and lights are switched off when not being used. Install energy saving fluorescent tubes at all lighting points instead of bulbs which consume higher electric energy. Conduct a baseline crack survey to address the potential of cracks in the surrounding structures due to vibrations from roller compactors.
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 to limit the risk of ground and surface water pollution.

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> • No dumping of waste products of any kind in or in close proximity to 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 spillages 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 site should be properly managed and taken to the Walvis Bay landfill site. • Construction workers should be given ablution facilities at the construction site, they should be located at least 30 m away from any surface water and should be regularly serviced. • Washing of personnel or any equipment should not be allowed on site. • Should it be necessary to wash construction equipment this should be done at an area properly suited and prepared to receive and contain contaminated waters.
Health, Safety and Security	<ul style="list-style-type: none"> • Construction personnel should not overnight at the site, except for security personnel. • Ensure that all construction personnel are properly trained depending on the nature of their work. • Provide for first aid kit and properly trained personnel to apply first aid when necessary. • Suitable overalls, safety footwear, dust masks, gas masks, respirators, gloves, ear protection equipment etc. should be made available and construction personnel must be trained to use the equipment. • Implement all necessary measures to ensure health and safety of workers and the general public during operation. • Firefighting equipment such as fire extinguishers should be provided at strategic locations such as stores and construction areas. • Regular inspection and servicing of the equipment must be undertaken by a competent service provider and records of such inspections maintained. • Fire escape routes and assembly point to be marked.

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> • A wellness program should be initiated to raise awareness on health issues, especially the impact of sexually transmitted diseases and Covid-19. • Provide free condoms in the workplace throughout the construction phase. • Facilitate access to Antiretroviral medication for construction personnel. • Conform to the stipulated protocols related to Covid-19. • 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. • Signs such as “NO SMOKING” must be prominently displayed within the premises, especially in parts where inflammable materials are stored. • Staff and visitors to the site must be fully aware of all health and safety measures and emergency procedures. • The contractor/s must comply with all applicable occupational health and safety requirements. The workforce should be provided with all necessary Personal Protective Equipment where appropriate.
Traffic	<ul style="list-style-type: none"> • Limit and control the number of access points to the site. • Ensure that road junctions have good sightlines. • Construction vehicles need to be in a road worthy condition and maintained throughout the construction phase. • Transport the materials in the least amount of trips as possible. • Adhere to the speed limit. • Implement traffic control measures where necessary, especially from and onto Independence Avenue. • Minimise the movement of heavy vehicles during peak time.
Noise	<ul style="list-style-type: none"> • No amplified music should be allowed on site. • Inform neighbouring communities and companies of construction activities to commence and provide for continuous communication between them and contractor. • Sensitise construction vehicle drivers and machinery operators to switch off engines of vehicles or machinery not being used. • Sensitise construction drivers to avoid unnecessary running of vehicle engines or hooting especially when passing through sensitive areas such as residential areas. • Ensure that construction machinery is kept in good condition to reduce noise generation.

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> • Ensure that all generators and heavy-duty equipment are insulated or placed in enclosures to minimize ambient noise levels. • Limit construction times to acceptable daylight hours. • Install technology such as silencers on construction machinery. • Do not allow the use of horns/hooters as a general communication tool, but use it only where necessary as a safety measure. • Provide protective equipment such as ear muffs, masks and ear plugs to workers.
Air quality	<ul style="list-style-type: none"> • All loose material should be kept on site for the shortest possible time. • It is recommended that dust suppressants such as Dustex be applied to all the construction clearing activities to minimise dust. • 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. • Vehicle idling time shall be minimised. • Alternatively fuelled construction equipment shall be used where feasible equipment shall be properly tuned and maintained. • Sensitise truck drivers to avoid unnecessary running of vehicle engines at loading/offloading points and parking areas, and to switch off or keep vehicle engines at these points. • Cover any stockpiles with plastic to minimise windblown dust. • Ensure construction vehicles are well maintained to prevent excessive emission of smoke.
Waste	<ul style="list-style-type: none"> • It is recommended that waste from the temporary toilets be disposed of at the Walvis Bay Wastewater Treatment Works, on a regular basis. • A sufficient number of waste bins should be placed around the site for the soft refuse. • A sufficient number of skip containers for the heavy waste and rubble should be provided for around the site. • The waste containers should be able to be closed to prevent birds and other animals from scavenging. • Adopt the waste management hierarchy i.e. prevention, minimisation, reuse, recycling, energy recovery, and lastly disposal. • If disposal is the only option, it should take place at a designated landfill in Walvis Bay.

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> • Ensure accurate estimation of the sizes and quantities of materials required, order materials in the sizes and quantities they will be needed, rather than cutting them to size, or having large quantities of residual materials. • Ensure that construction materials left over at the end of construction will be used in other projects rather than being disposed of. • Ensure that damaged or wasted construction materials including pipes, doors, plumbing and lighting fixtures, marbles will be recovered for refurbishing and use in other projects. • Donate recyclable/reusable or residual materials to local community groups, institutions. • Use of durable, long-lasting materials that will not need to be replaced as often, thereby reducing the amount of construction waste generated over time. • Provide facilities for proper handling and storage of construction materials to reduce the amount of waste caused by damage or exposure to the elements. • Use building materials that have minimal or no packaging to avoid the generation of excessive packaging waste.
Hazardous Substances	<ul style="list-style-type: none"> • All chemicals and other hazardous substances must be stored and maintained in accordance with the Hazardous Substances Ordinance (No. 14 of 1974), with all relevant licences and permits to be obtained where applicable. • Given the potential harm to human health during handling and use of any of hazardous substances it is essential that all staff be trained with regards to the proper handling of these substances as well as First Aid in the case of spillage or intoxication. • Storage areas for all substances should be bunded and capable to hold 120% of the total volume of a given substance stored on site.
Social	<ul style="list-style-type: none"> • Ensure locals enjoy priority in terms of job opportunities, to the extent possible, for skills that are available locally. • Ensure local procurement where commodities are available locally.

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
Archaeological	<ul style="list-style-type: none"> • Prevent damage to any archaeologically significant sites in the construction area. • In the event of a chance find, implement the following Archaeological Chance Finds Procedure: <p>Action by person (operator) identifying archaeological or heritage material:</p> <ul style="list-style-type: none"> a) If operating machinery or equipment: stop work b) Identify the site with flag tape c) Determine GPS position if possible d) Report findings to foreman <p>Action by foreman:</p> <ul style="list-style-type: none"> a) Report findings, site location and actions taken to superintendent b) Cease any works in immediate vicinity <p>Action by superintendent:</p> <ul style="list-style-type: none"> a) Visit site and determine whether work can proceed without damage to findings b) Determine and mark exclusion boundary c) Site location and details to be added to AH GIS for field confirmation by archaeologist <p>Action by archaeologist:</p> <ul style="list-style-type: none"> a) Inspect site and confirm addition to AH GIS b) Advise NHC and request written permission to remove findings from work area c) Recovery, packaging and labelling of findings for transfer to National Museum <p>In the event of discovering human remains:</p> <ul style="list-style-type: none"> a) Actions as above b) Field inspection by archaeologist to confirm that remains are human c) Advise and liaise with NHC and Police d) Recovery of remains and removal to National Museum or National Forensic Laboratory, as directed.

Table 10: 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. • Visual pollutants can further be prevented through mitigations such as keeping existing vegetation, introducing indigenous trees; keeping structures unpainted and minimising large advertising billboards.
Noise	<ul style="list-style-type: none"> • Follow Labour Act Regulations - Noise Regulations (Regulation 197), and / or WHO guidelines on maximum noise levels (Guidelines for Community Noise, 1999), to prevent hearing impairment for workers on site and a nuisance for nearby residential areas / neighbours. • Minimize or prevent noise producing activities and plan to restrict these to daytime as far as practically possible. • All machinery must be regularly serviced to ensure minimal noise production. • The use of low frequency white noise or flashing lights should be considered instead of audible high frequency warning signals for moving forklifts or trucks. • Erect temporary or permanent noise barriers / sound baffles, should the need arise. • Placement of noise producing equipment, e.g. compressors, in such a way that noise is directed away from receptors and / or are attenuated. • Where possible, use infrastructure to act as noise barriers to sensitive environments. • Hearing protectors as standard PPE for workers in situations with elevated noise levels.
Air quality	<ul style="list-style-type: none"> • Manage activities that generate emissions or dust. • Minimise the movement of vehicles in the area. • The development needs to be controlled and managed as required by the Public Health Act (Act No. 36 of 1919) and Atmospheric Pollution Prevention Ordinance (No. 11 of 1976). • It is advised to pave the internal roads and individual properties.

OPERATIONAL PHASE IMPACTS	
Impact	Mitigation Measures
Waste management	<ul style="list-style-type: none"> • The area will be kept free of waste, except in designated waste storage areas. • Any wastes distributed by winds will be regularly cleaned up. • A sufficient number of waste bins should be placed around the site for the soft refuse. • A sufficient number of skip containers for the heavy waste should be provided for around the site. • Categorise waste into various types such as hazardous, general and recyclable. • Hazardous waste to be disposed of at the appropriate facilities of the Walvis Bay Municipality. • Adopt the waste management hierarchy i.e. prevention, minimisation, reuse, recycling, energy recovery, and lastly disposal. • If disposal is the only option, it should take place at a designated landfill in Walvis Bay.
Quality of life	<ul style="list-style-type: none"> • The proponent must employ local Namibians where possible. • If the skills exist locally, employees must first be sourced from the town, then the region and then nationally. • Deviations from this practice must be justified. • Procurement should be done locally, then regionally, and nationally in that order where goods and services are available.
Future Development	<ul style="list-style-type: none"> • Any future listed activity on any of the newly created portions/properties will have to undergo an activity specific Environmental Impact Assessment before any development commence.

10. CONCLUSION AND RECOMMENDATIONS

10.1. Construction Phase Impacts

With reference to **Table 9**, most of the construction phase impacts were deemed to have a negative impact without mitigation. However, these were mostly short-term and can be significantly reduced with the mitigation measures proposed.

10.2. Operational Phase

During the operational phase the impacts of air quality; noise; and waste management were assessed to have a long-term negative effect without mitigation. The impacts will however be significantly reduced when the recommended mitigation measures in the scoping report and environmental management plan (EMP) are implemented.

The impacts on the quality of life of the residents and on the infrastructure development are deemed to be high positive. This development is not only important to legalise and provide ownership opportunities to the Walvis Bay community, but it also promotes local economic development.

10.3. Level of Confidence in Assessment

With reference to the information available at this stage, the confidence in the environmental assessment undertaken is regarded as being acceptable for decision-making, in terms of the environmental impacts and risks. The Environmental Assessment Practitioner believes that the information contained within this ESR is adequate to allow MEFT: DEA to determine the environmental viability of the proposed project.

It is acknowledged that the project details may 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 ESR 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.

10.4. Mitigation Measures

With the implementation of the recommended mitigation measures in this report as well as in the EMP, the significance of the planning and design, 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 strongly advised that the proponent appoint a suitably qualified consulting engineer to design and supervise the construction of the service infrastructure, including storm water management.

While an EIA is being developed for this exercise, it is important to note that any listed activity that will take place in future on any of the newly created portions/property will have to undertake a site and activity specific EIA in terms of the EIA Regulations and EMA.

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

10.5. 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, as the development will have the following benefits to the residents and investors in addition to promoting local economic development:

- The subdivision and rezoning will enable residents and other potential buyers to acquire legal ownership of these erven.
- Light Industrial erven have potential to create employment opportunities to local people.
- Small light industrial erven require less capital compared to larger industrial erven. It is therefore easier for the proposed erven to be developed by emerging or small and medium entrepreneurs who usually have limited resources.
- The creation of the proposed light industrial erven will in the future generate revenue for Council in terms of rates and taxes, which will go towards town development.

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

11. REFERENCES

1. Botha, P., Faul, A., Hooks, P., Brews, L., November 2016. Strategic Environmental Assessment for the New Port of Walvis Bay SADC Gateway.
2. Climate-data, 2020a. Walvis Bay Climate. Walvis Bay Average Temperature. <https://en.climate-data.org/africa/namibia/erongo-region/walvis-bay-835/>.
3. Climate-data, 2020b. Walvis Bay Climate. Walvis Bay Climate Graph. <https://en.climate-data.org/africa/namibia/erongo-region/walvis-bay-835/>.
4. DiGiovanni, F. and Coutinho, M., 2017. Guiding Principles for Air Quality Assessment Components of Environmental Impact Assessments.
5. Erongo Regional Council (ERC), 2020. Erongo regional Council Website. Available at: www.erc.com.na.
6. Faul, A., Botha, P. Coetzer, W. 2019. Environmental Management Plan for the Operations of the Commercial Harbour: Port of Walvis Bay.
7. IFC, (2007). General Environmental, Health and Safety Guidelines.
8. Mahendra, Choudhary, Dr. & Garg, Vaibhaw. (2013). Causes, Consequences and Control of Air Pollution.
9. Meteoblue, 2021. https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/walvis-bay_namibia_3359638 (Accessed 10/12/2021).
10. Nacoma, 2010. Environmental Management Plan for Henties Bay.
11. Namibia Statistics Agency (NSA), 2011. Namibia 2011 Population and Housing Census Main Report. Available at: <http://nsa.org.na/page/publications/#collapse3>. Accessed (02/10/2015).
12. Raison, 2016. People of the coast. Available at: <http://www.raison.com.na/Pages%20110%20to%20133.pdf>.
13. SANS 10103, 2008. The measurement and rating of environmental noise with respect to annoyance and to speech communication. Pretoria: Standards South Africa.
14. SADC Environmental Legislation Handbook (SELH), 2012. Environmental Legislation. EIA process flowchart for Namibia. Available at: www.saiea.com/dbsa_handbook_update2012/pdf/chapter11.pdf.
15. Sosiak A., and Dixon J., 2006. Impacts on water quality in the upper Elbow River. Water Science & Technology. 53:10. Pp 309-316.
16. Southern African Institute for Environmental Assessment (SAIEA), 2011. SEA for the Central Namib Uranium Rush. Available at: www.saiea.com.
17. USEPA, 2006. United State Environmental Protection Agency (USEPA), 2006: unpaved roads, Compilation of Air Pollution Emission Factors.
18. World Health Organisation (WHO), 1999. Guidelines to Community Noise.