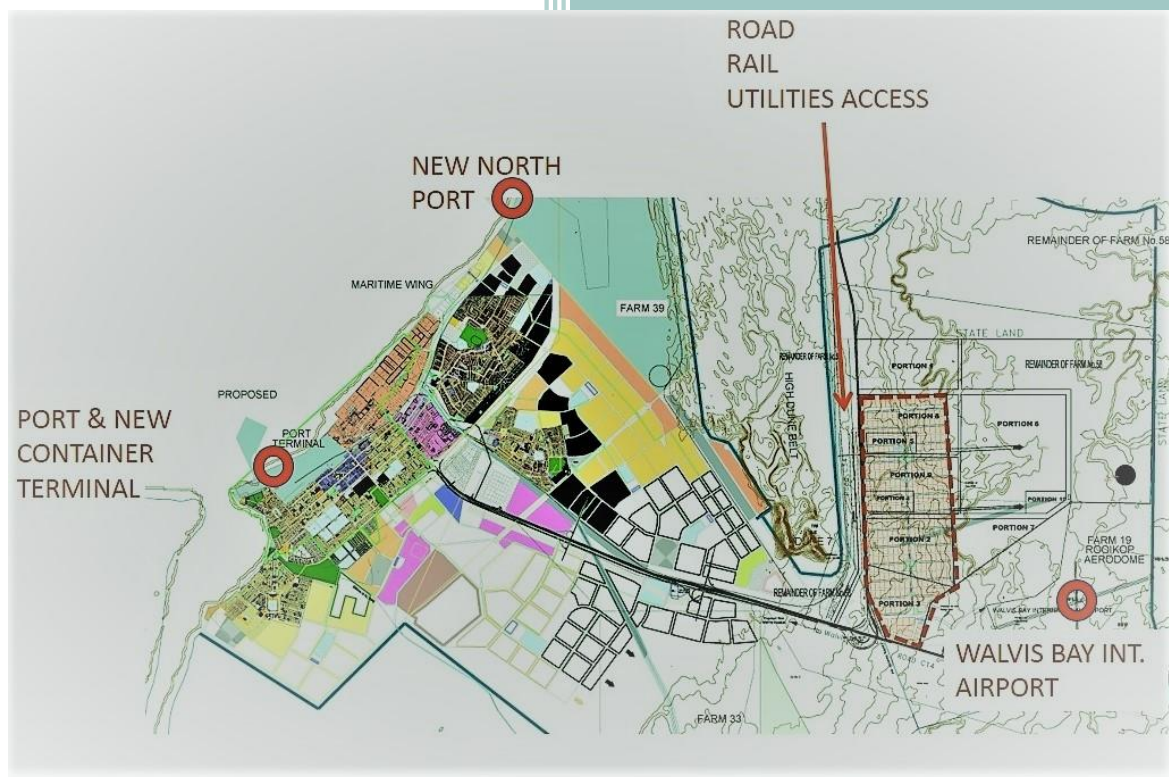


EIA REPORT: Proposed Development of !Nara Namib Free Economic Industrial Zone on Portions 2, 3 and 4 of Farm 58, Walvis Bay, Erongo Region



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## LIST OF ACRONYMS

AIDS	Acquired immune deficiency syndrome
CRR	Comments and response report
dB	Decibels
DESR	Draft Environmental Scoping Report
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
EAR	Environmental Assessment Report
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
FESR	Final Environmental Scoping Report
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
MET	Ministry of Environment 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 <sup>2</sup>	People per square kilometre
SADC	Southern African Development Community

## 1. INTRODUCTION

### 1.1 Project Background

The opportunity to make use of good port infrastructure and growing transportation infrastructure to a large sub-continental African hinterland, through industrial value addition has long been recognised. To this end, land for a large green field industrial development with excellent access to the Port of Walvis Bay, the International Airport and proximity to utilities and road-rail transport infrastructure has been identified and earmarked.

To make this project a reality, the Namibian Industrial Development Agency (NIDA) procured a joint development partner for the development of !Nara Namib Free Industrial Economic Zone (!NNFEIZ). !NNFEIZ is a new port-centric free economic zone industrial development at Walvis Bay. The !NNFEIZ development entity entered into a Memorandum of Understanding (MoU), laying the foundation for a strategic partnership with DP World, a Dubai-based specialist port and free zone operator. DP World operates port centric free zones internationally, with a flagship project at Jebel Ali responsible for US\$83.1 in annual trade creating 150 000 permanent jobs. The importance of the strategic partnership is underscored by DP World's ability to generate trade volume flows through Walvis Bay due to its international trade logistical role.

Master Planning for a world class industrial estate at !NNFEIZ is now progressing to provide serviced industrial stands and bespoke industrial superstructures to an international customer base. The development will make provision for industries of various scales, i.e. light, medium, and heavy industrial. The development is conceptualised in a modular manner to optimise infrastructure, allow a flexible response to market needs and seamless expansion. A first phase of 50ha is currently being designed, as part of a 403ha site allocated to NIDA by the Municipality of Walvis Bay. NIDA and the proponent has entered into a partnership through a special purpose vehicle known as !Nara Namib Free Economic Industrial Zone (!NNFEIZ).

Trade logistical efficiencies, according to a recent World Bank study, impacts on up to 70% of GDP growth. Trade logistics are also key to the creation of quality jobs as localities with poor access to international trade corridors remains uncompetitive. !NNFEIZ is therefore key to the industrialisation targets set for Namibia through leveraging off investments in making the country a trade logistical hub.

Importantly, an initial investment of N\$308 million into serviced stands on the 1st phase will unlock an estimated N\$1.7 billion in industrial superstructures. This investment will ramp up over the development period to a total potential development value of over N\$50 billion. The potential GDP impact of investment at this scale is significant and equates to 25% of Namibia's economic value.

Another benefit is that Namibia is 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. Namibia 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. Customers that understand the comparative advantages of Namibia and the strategic value of the !NNFEIZ partnership will benefit from choosing Walvis Bay as an investment location.

It is thus the opportune time for !NNFEIZ and the established strategic partnership has the potential to unlock the right incentives, value creation and investment returns to make this project an international success. !NNFEIZ, as a port-centric special economic zone development, holds national significance for Namibia by growing its economic impact beyond the limits of the domestic economy.

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.

## 1.2 Project Location

The proposed site is located on Portions 2, 3 and 4 of Farm 58, Walvis Bay in Erongo Region. The site is found to the western side of Walvis Bay International Airport and to the east of the landmark Dune 7. It is situated on the coordinates lat: -22.982785; long: 14.610424. See **Figures 1 and 2** below for the locality maps of Walvis Bay and the development site.

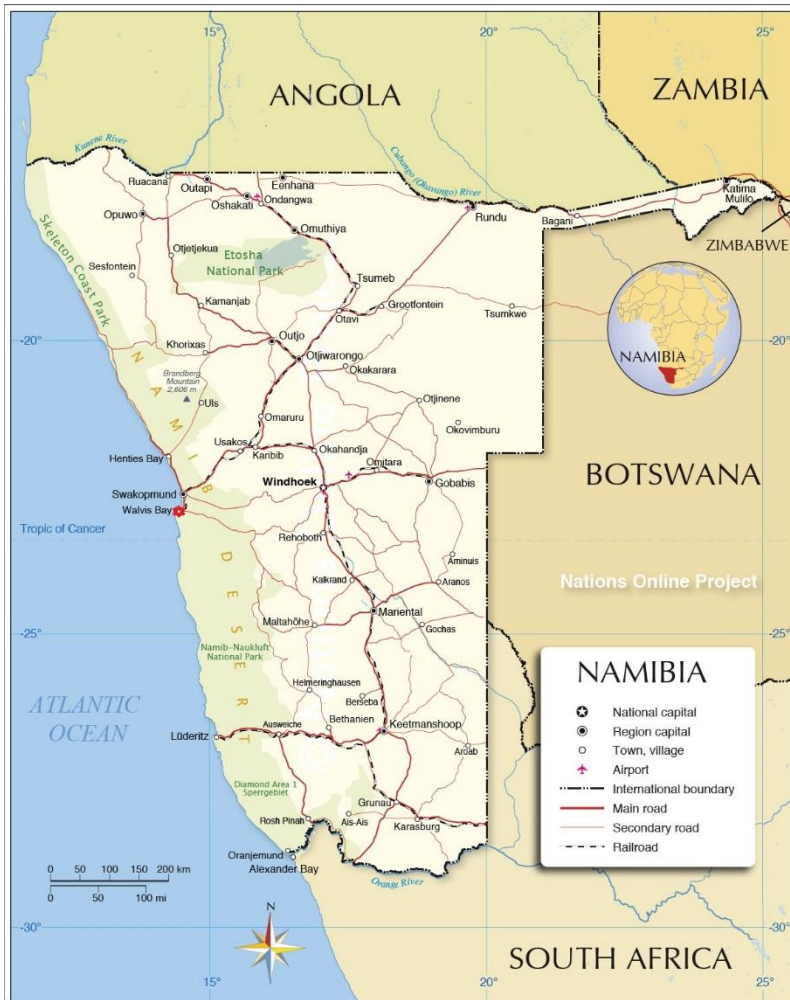


Figure 1: Locality map of Walvis Bay



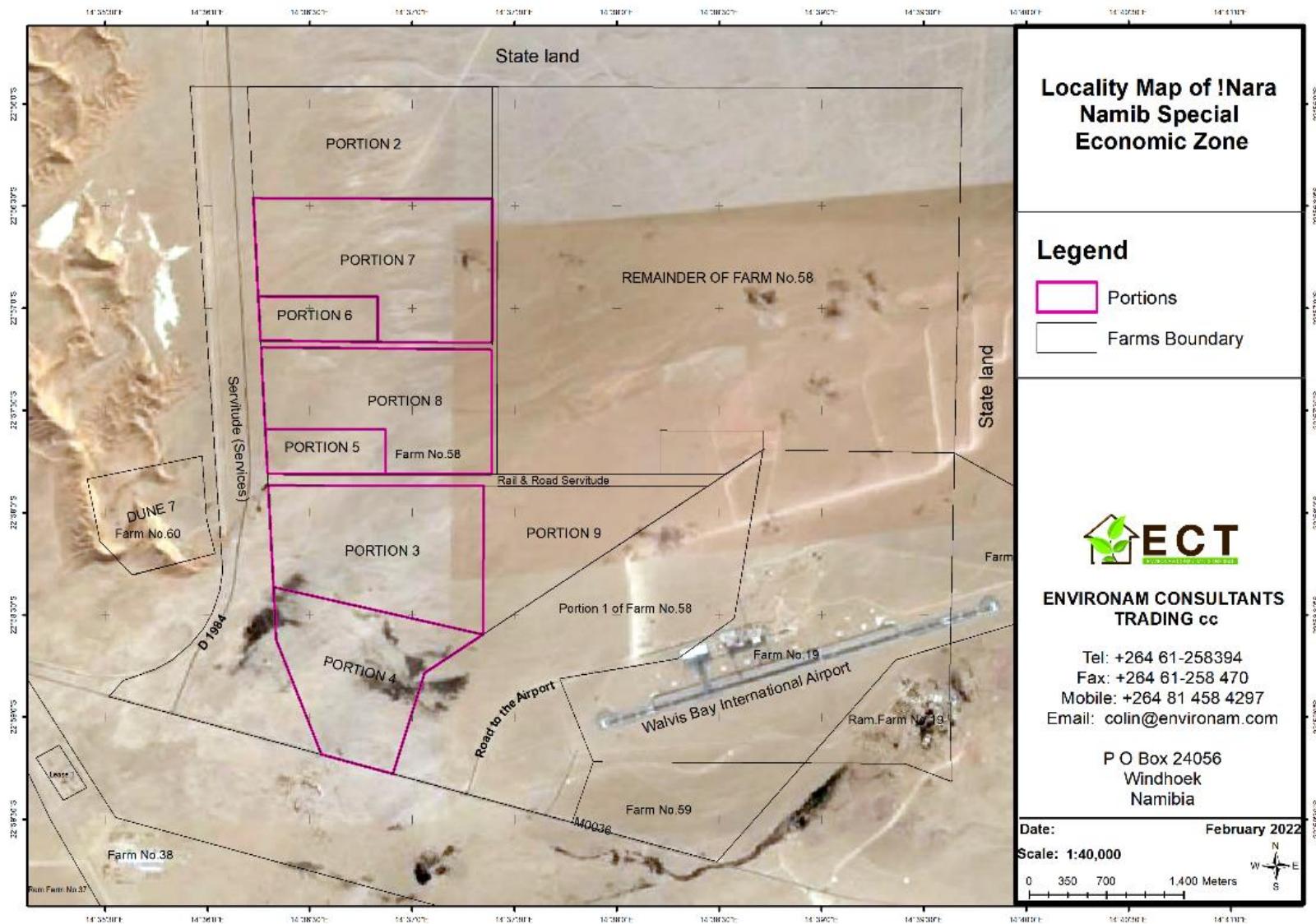


Figure 2: Locality map of the proposed development

### 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 Development of !Nara Namib Free Economic Industrial Zone on Portions 2, 3 and 4 of Farm 58, Walvis Bay, Erongo Region 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.

### 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
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

Section	Description	Section of ESR/ Annexure
	(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 <b>Annexures A and B</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 <b>Annexure D</b>
	(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 <b>Annexure D</b>
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 <b>Annexure F</b>

## 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	<p>Article 91 (c) provides for duty to guard against “the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia.”</p> <p>Article 95(l) deals with the “maintenance of ecosystems, essential ecological processes and biological diversity” and sustainable use of the country’s natural resources.</p>	Sustainable development should be at the forefront of this development.
Environmental Management Act No. 7 of 2007 (EMA)	<p>Section 2 outlines the objective of the Act and the means to achieve that.</p> <p>Section 3 details the principle of Environmental Management</p>	The development should be informed by the EMA.
EIA Regulations GN 28, 29, and 30 of EMA (2012)	<p>GN 29 Identifies and lists certain activities that cannot be undertaken without an environmental clearance certificate.</p> <p>GN 30 provides the regulations governing the environmental assessment (EA) process.</p>	<p><b>Activity 10.1 (a)</b> The construction of - Oil, water, gas and petrochemical and other bulk supply pipelines;</p> <p><b>Activity 10.1 (b)</b> The construction of - Public roads;</p> <p><b>Activity 10.1 (c)</b> The construction of - Railways and harbours;</p> <p><b>Activity 10.2 (a)</b> The route determination of roads and design of associated physical infrastructure where - It is a public road</p>
Convention on Biological Diversity (1992)	Article 1 lists the conservation of biological diversity amongst the objectives of the convention.	The project should consider the impact it will have on the biodiversity of the area.
Draft Procedures and Guidelines for conducting EIAs and compiling EMPs (2008)	Part 1, Stage 8 of the guidelines states that if a proposal is likely to affect people, certain guidelines should be considered by the proponent in the scoping process.	The EA 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.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Water Act No. 54 of 1956	Section 23(1) deals with the prohibition of pollution of underground and surface water bodies.	The pollution of water resources should be avoided during construction and operation of the development.
The Ministry of Environment, 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 (Act of 2018).	Urban and Regional Planning Act (Act of 2018) regulates subdivisions of portions of land falling within a proclaimed Local Authority area.	Section 16 of Chapter 3 deals with the Ministers' declaration of authorised planning authorities and establishment of joint committees.
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.	The developer and contractors are to comply with these legal requirements.
Nature Conservation Ordinance no 4 of 1975	Chapter 6 provides for legislation regarding the protection of indigenous plants	Indigenous and protected plants 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.
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.	The site fall in the local authority area of Walvis Bay and has to conform to the Walvis Bay 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.

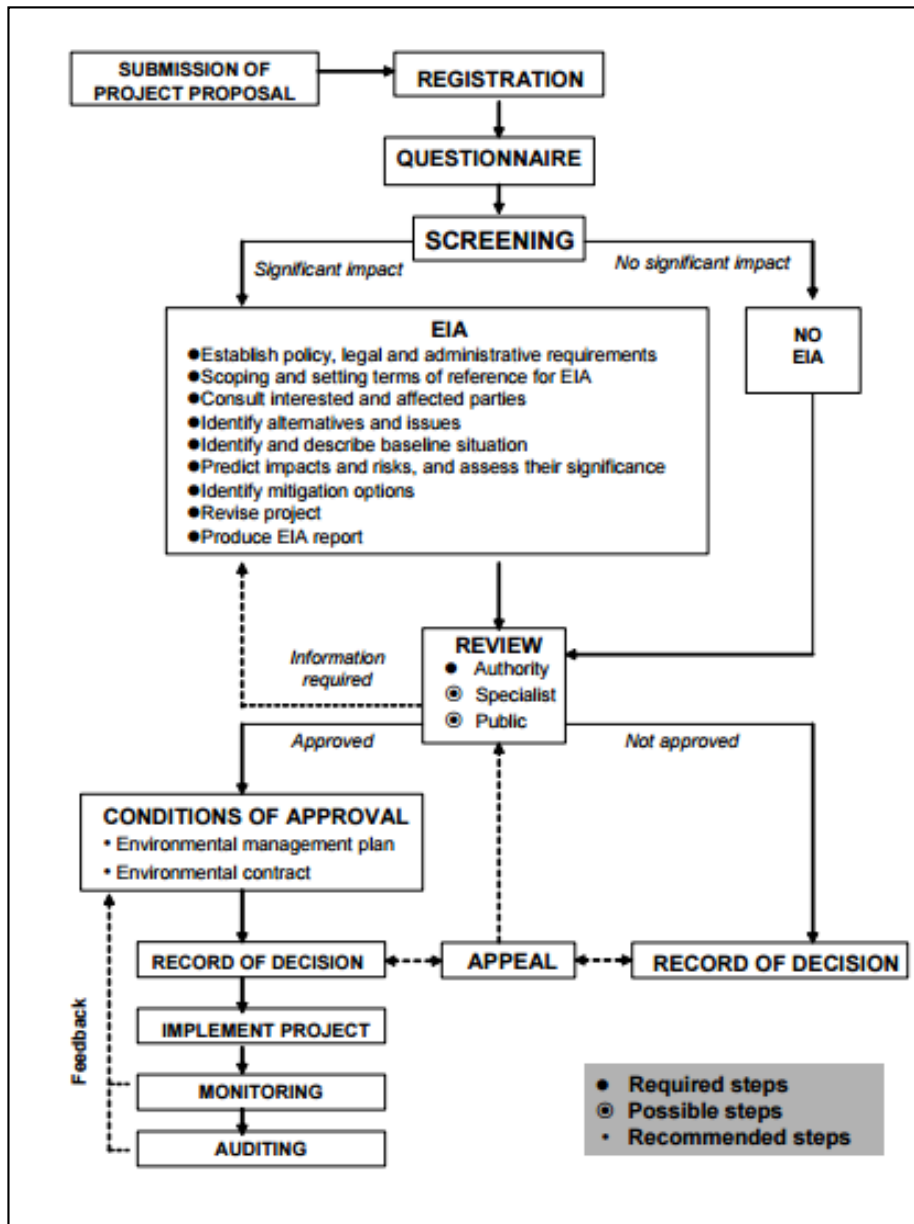


Figure 3: EIA Flowchart for Namibia (SELH, 2012)

### 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

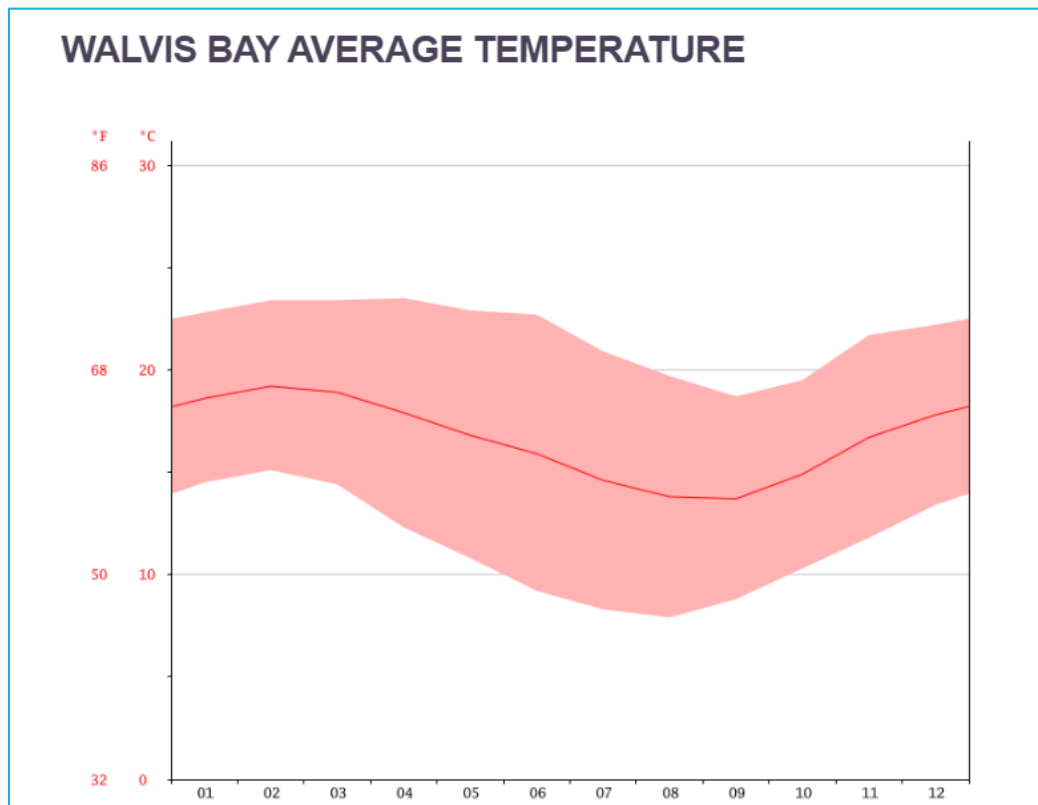
While many archaeological sites have been found along the Namibian coast and some sites provide evidence of coastal occupation for a long time, many of these are considered “lucky finds” since the chances of artefacts surviving long and then being found are obviously small. As a result, the number of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

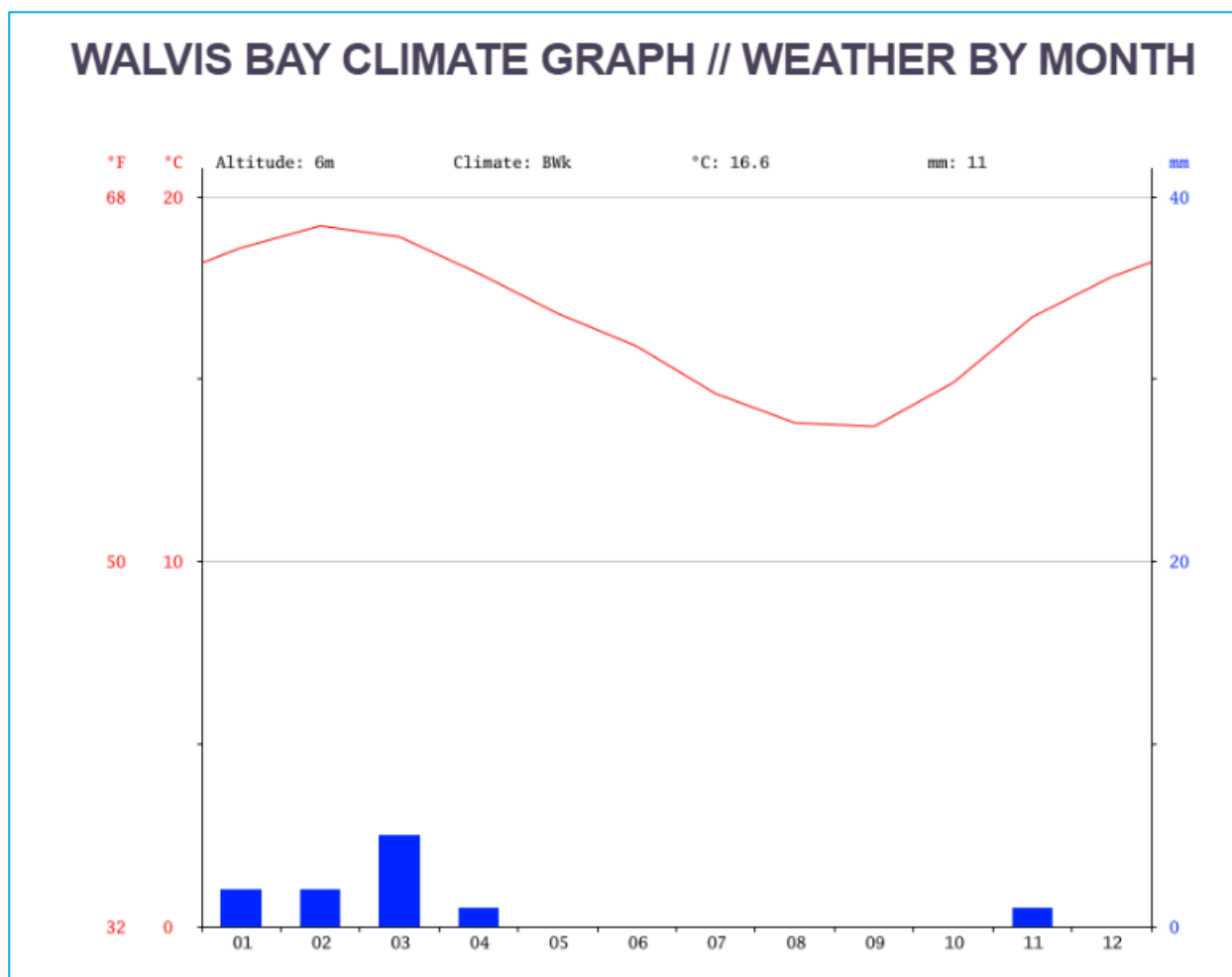
#### 3.2.1. Climate

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, 2019). 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, 2022a)





**Figure 5:** Average monthly rainfall graph for Walvis Bay (Climate-data, 2022b)

### 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 km<sup>2</sup>, which is 7.7 per cent of Namibia's total area of about 823,680 km<sup>2</sup>. 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 sites 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. **Figure 6** below provides a view of the general area and surrounds of the proposed development site.



**Figure 6:** General area of the proposed development site, with road construction work on the interchange visible.

### 3.3. Surrounding Land Use

The proposed site is mostly surrounded by undeveloped land that is earmarked for further Industrial developments, as allocations have been done for the remaining portions. On the western side is where the Walvis Bay International Airport is found. On the western side is the landmark Dune 7 can be seen. On the western border of Farm 58 is the D1984 towards Swakopmund, including a railway servitude.

### 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 consist of water supply, sewage and drainage systems, solid waste management and landscaping.

There is a consideration to extend bulk water services to the site from the existing Namwater pipeline found in the development area, although technical details have to be discussed with Namwater and the proponent's design team as there appear to be challenges with water

pressure from the pipeline. The proponent intends to construct a new waste water treatment plant to manage sewer and waste water generated from the activities of the development. The municipality also has long-term plans to provide waste water facilities in the area, it is therefore advisable that the developer engages the Municipality to discuss options for cost sharing. Electricity will be provided to the site in consultation with the regional electricity distributor, ErongoRED. Ingress will initially be obtained from the road towards the Walvis Bay International Airport in the short term. A rail and road servitude has been provided for along the northern border of Portion 3 of Farm 58, as well as another one further north along Portion 8 of Farm 58. These will make it possible for long term access to this and other developments in Farm 58. The red arrows in **Figure 7** below indicates the short-term access into portion 4 of Farm 58 from the Walvis Bay International Airport road and the long-term access north of Portions 3 and 8 of Farm 58.

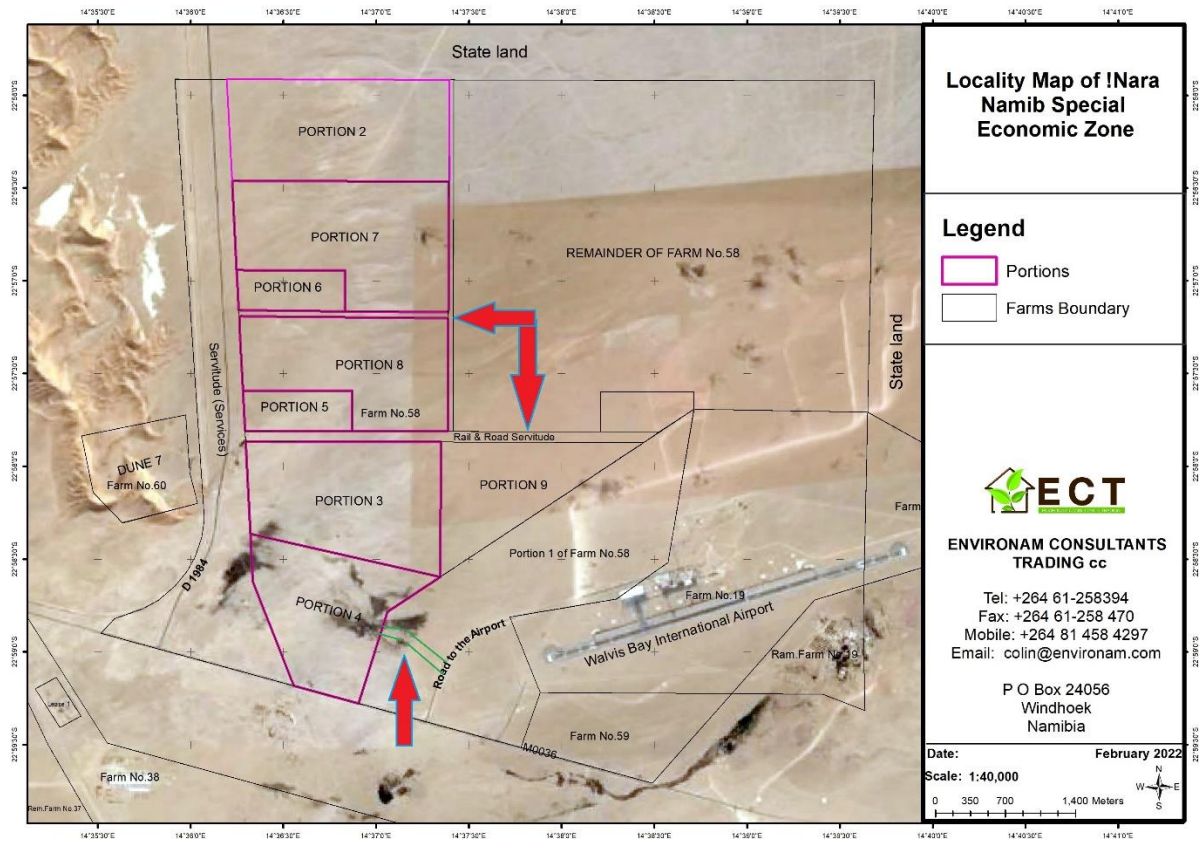


Figure 7: Short and long-term access to the development

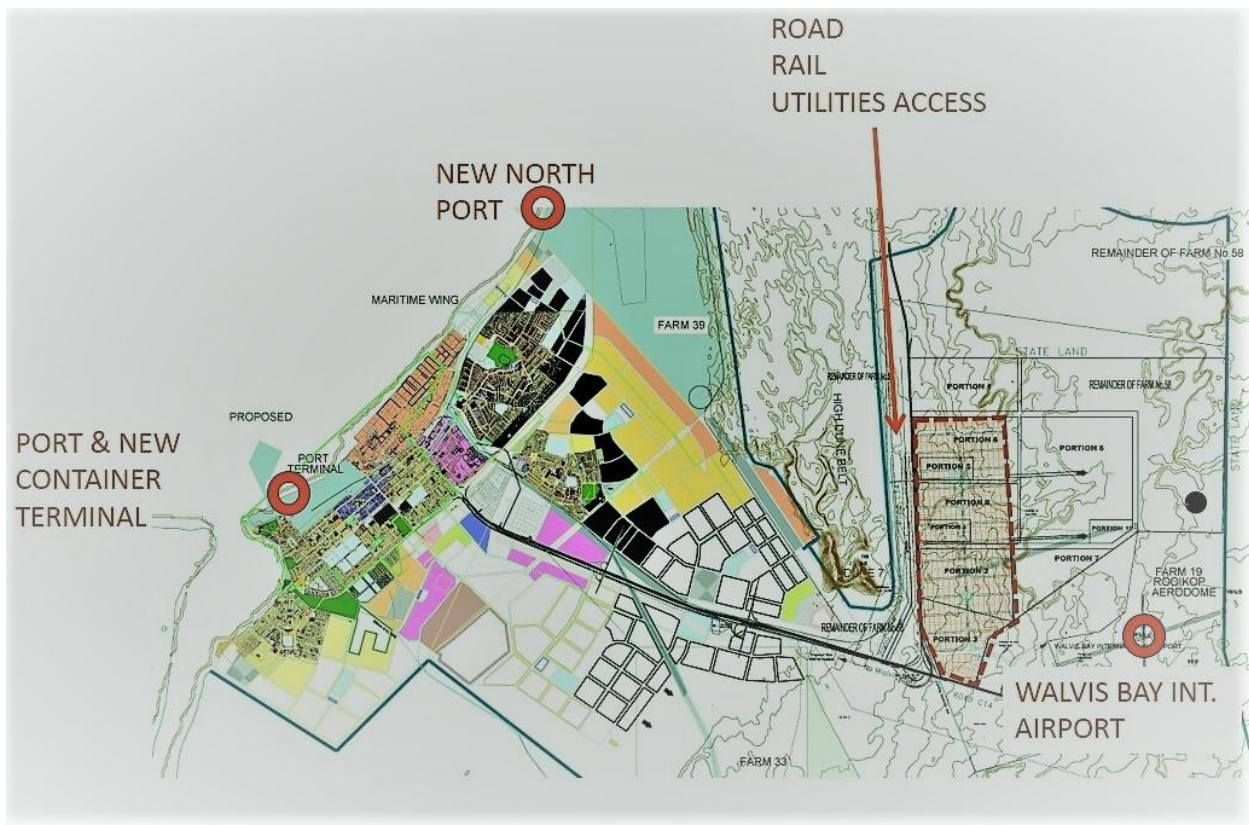
## 4. PROJECT DESCRIPTION

### 4.1. Site Description

The proposed development aims to provide serviced industrial stands, custom-made industrial superstructures and rail-linked large industrial sites to an international customer base. The development is conceptualised in a modular manner to optimise infrastructure, allow a flexible response to market needs and seamless expansion. The development will make provision for industries of various scales, i.e. light, medium, and heavy industrial.

A first phase of 50ha is currently being designed, as part of a 403ha site allocated to NIDA by the Municipality of Walvis Bay. NIDA and the proponent has entered into a partnership through a special purpose vehicle known as !Nara Namib Free Economic Industrial Zone (!NNEFIZ).

In addition to contributing to the local economic development of Walvis Bay Town in particular and the country in general, job opportunities will be created with approximately 9000 (2.4 million man-days) jobs directly during the development of Portions 2 and 3. an initial investment of N\$308 million into serviced stands on the 1st phase will unlock an estimated N\$1.7 billion in industrial superstructures. This investment will ramp up over the development period to a total potential development value of over N\$50 billion. The potential GDP impact of investment at this scale is significant and equates to 25% of Namibia's economic value.



**Figure 8:** Relative location of the development

## 4.2. Decision Factors

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

- Walvis Bay Town Planning Scheme.
- Character of the general area.
- Comparative advantage and strategic value of Walvis Bay as an investment location.

## 4.3.No - Go Alternative

The no-go alternative would essentially entail maintaining the current situation, whereby the country is not utilising the comparative advantages offered by Walvis Bay as an investment destination of choice. The opportunities will be lost to other coastal cities on the continent. In addition, no operational jobs that come with the envisaged project will be created.

## 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 4** below for the activities undertaken as part of the public participation process.

**Table 4:** Table of Public Consultation Activities

ACTIVITY	REMARKS
Placement of site notices/posters in Walvis Bay	See Annexure A
Placing advertisements in two newspapers for two consecutive weeks, namely Windhoek Observer and Namib Times	See Annexure B
Written notice to Interested and Affected Parties via Email	See Annexure D
Public meeting in Walvis Bay	14/04/2022

A separate meeting with Walvis Bay Municipality was requested for 14/01/2022 at 15H00, however an agreement was reached that the municipal officials will rather attend the public meeting and provide their input then. The comment period of the initial public participation process commenced on **31 March 2022** and ended on **21 April 2022**. Minutes, comments and input received from various stakeholders are attached in **Annexure D**.

### 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 going out to the registered I&APs. I&APs were given time until **24 May 2022** to submit comments or raise any issues or concerns they may have with regard to the proposed project.

## 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 5**.

**Table 5: Impact Assessment Criteria**

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



CRITERIA	CATEGORY
	<p><b>Low:</b> Natural and/or social functions/processes are slightly altered</p> <p><b>Medium:</b> Natural and/or social functions/processes are notably altered in a modified way</p> <p><b>High:</b> Natural and/or social functions/processes are severely altered and may temporarily or permanently cease</p>
<p><b>Probability of occurrence</b> Describe the probability of the Impact <u>actually</u> occurring</p>	<p><b>Improbable:</b> Not at all likely</p> <p><b>Probable:</b> Distinctive possibility</p> <p><b>Highly probable:</b> Most likely to happen</p> <p><b>Definite:</b> Impact will occur regardless of any prevention measures</p>
<p><b>Degree of Confidence in predictions</b> State the degree of confidence in predictions based on availability of information and specialist knowledge</p>	<p><b>Unsure/Low:</b> Little confidence regarding information available (&lt;40%)</p> <p><b>Probable/Med:</b> Moderate confidence regarding information available (40-80%)</p> <p><b>Definite/High:</b> Great confidence regarding information available (&gt;80%)</p>
<p><b>Significance Rating</b> The impact on each component is determined by a combination of the above criteria.</p>	<p><b>Neutral:</b> A potential concern which was found to have no impact when evaluated</p> <p><b>Very low:</b> Impacts will be sitespecific and temporary with no mitigation necessary.</p> <p><b>Low:</b> The impacts will have a minor influence on the proposed development and/or environment. These impacts require some thought to adjustment of the project design where achievable, or alternative mitigation measures</p> <p><b>Medium:</b> Impacts will be experienced in the local and surrounding areas for the life span of the development and may result in long term changes. The impact can be lessened or improved by an amendment in the project design or implementation of effective mitigation measures.</p> <p><b>High:</b> 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 9** 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.

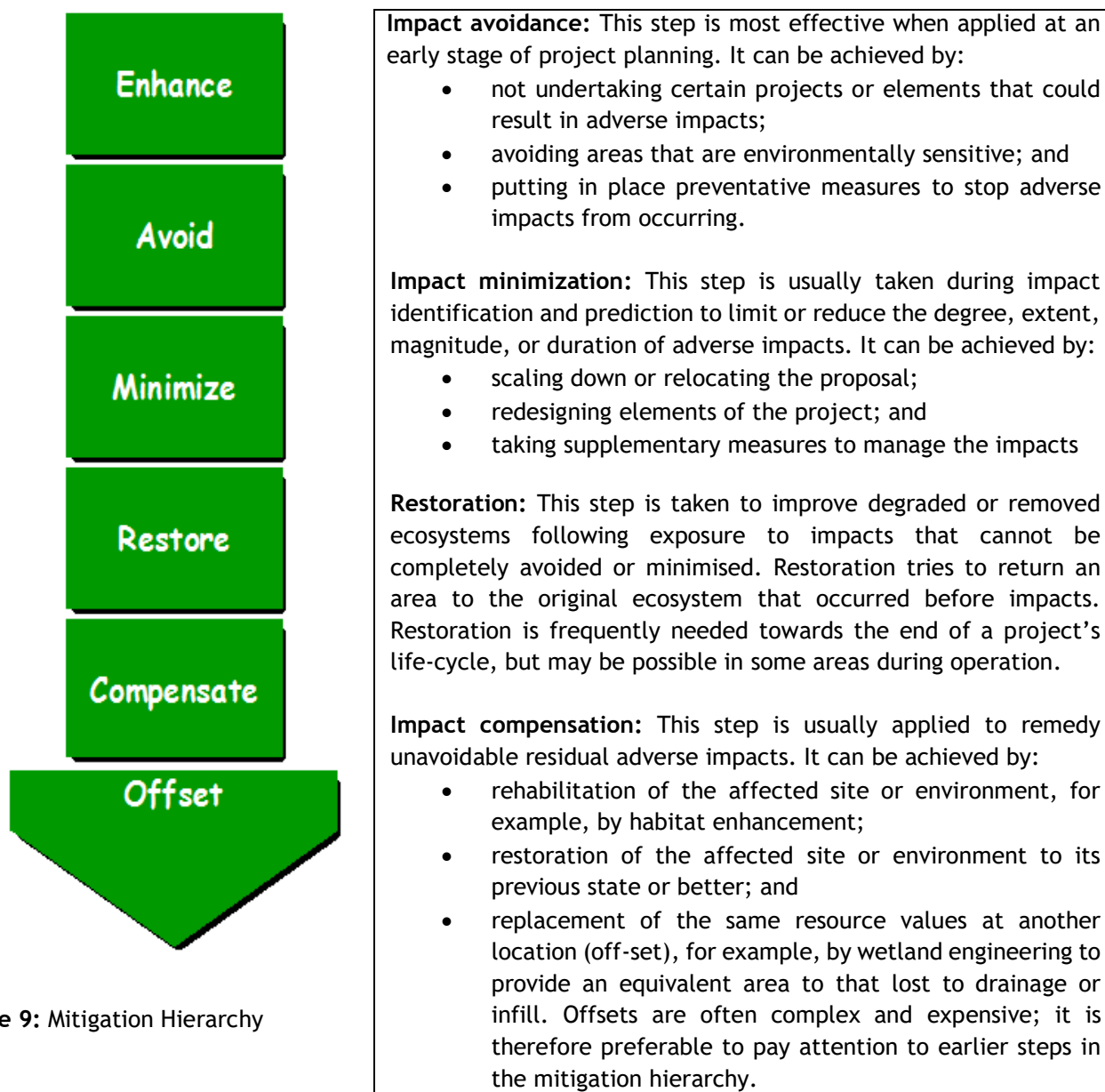


Figure 9: Mitigation Hierarchy

## 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. Note should be taken that the planning and design phase impacts are applicable during the operational phase as well.

#### 8.1.1. Surface and Groundwater

The proposed development site is located approximately 18 km from the shoreline of the Atlantic Ocean, this puts the surface and ground water resources in the area at risk of pollution. This is likely to happen in the absence of well designed and constructed storm water drainage infrastructure. 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.

#### 8.1.2. Fauna and Flora

The general area is sparsely populated with flora, and not much vegetation visible. The existing vegetation is more characteristic and typical of a coastal environment, in particular the Kuntze's brownanthus bushes are found in the general area, but the proposed area is open with no vegetation visible. The proposed development areas and associated infrastructure would be relatively small and thus only have localised negative implications on the environment and associated fauna and flora. The overall impact on the local fauna and flora and associated

habitat would be relatively small. While no obvious large animals could be observed on the development site, it could be expected that the area may also support species of smaller vertebrates such as reptiles, amphibians, mammals and birds.

#### **8.1.2.1. Existing Service Infrastructure**

There is a consideration to extend bulk water services to the site from the existing Namwater pipeline found in the development area, although technical details have to be discussed with Namwater and the proponent's design team as there appear to be challenges with water pressure from the pipeline. The proponent intends to construct a new waste water treatment plant to manage sewer and waste water generated from the activities of the development. The municipality also has long-term plans to provide waste water facilities in the area, it is therefore advisable that the developer engages the Municipality to discuss options for cost sharing.

Electricity will be provided to the site in consultation with the regional electricity distributor, ErongoRED. Access will initially be obtained from the road towards the Walvis Bay International Airport in the short term. A rail and road servitude has been provided for along the northern border of Portion 3 of Farm 58, as well as another one further north along Portion 8 of Farm 58. These will make it possible for long term access to this and other developments in Farm 58. It is recommended that the proponent engages TransNamib as the national rail services operator in terms of its plans for the provision of rail sidings and to ensure that there is no conflict with current or future plans of TransNamib.

##### **8.1.2.1.1 Traffic**

There will be movement of traffic during the operational phase of the project. Due to the nature of the development and the land use, vehicles that will frequent the area would mostly consist of vehicles used by the workforce as well as delivery vehicles and clients. This will add additional pressure on the existing D1984 and C14 roads, if not well managed. No direct access to the freeway will be supported by the Roads Authority. The development's boundaries should be positioned at least 45m from the edge of the proclaimed national roads, both trunk and main roads.

## **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; and social impact.

### **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.

### 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. 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

Due to a high demand of construction workers during this phase of the project, the deployment of a temporary construction workforce in Walvis Bay may be necessary. These types of projects, where construction workers have the opportunity to interact with the local community, create a significant risk for the development of social conditions and behaviors that contribute to the spread of HIV, AIDS and Covid-19. The Ministry of Environment, Forestry and Tourism has initiated a programme aimed at mainstreaming HIV and gender issues into environmental impact assessments. Safety and security aspects are a critical part of any construction activity and high standards have to be upheld for the duration of the construction period.

### 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 C14 Main Road as well as to the D1984, traffic on these roads 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.

The project area is a safe distance away from the nearest and planned residential areas and other developments, and dust would therefore not interfere significantly on the community during the short-term construction phase.

### 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.

The construction of the services, and other structures will result in associated noise impacts. These noise impacts will mainly be associated with construction machinery and vehicles, concrete and mixing; and excavation for foundations. It is important that noise is managed well to avoid a negative impact to the surrounding communities and other developments in the vicinity during the short-term construction phase.

#### **8.2.7. Traffic Impacts**

Traffic is expected to increase during the construction phase of the project. 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 use of slow moving heavy construction trucks has the potential to cause traffic jams. This will add additional pressure on the existing D1984 and C14 roads, if not well managed.

#### **8.2.8. Solid Waste Management**

The construction activities will lead to the generation of significant amounts of solid waste mainly in the form of construction building rubble. This could have a negative environmental impact if not managed well. Therefore, enough waste bins and skip containers should be available 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**

The project will result in long-term positive impacts as far as the social welfare of the affected community is concerned. There is potential of an influx of migrant workers into the town of Walvis Bay. This would boost the local economic development of the town as a result of an increase in consumers of goods, and spending power. The local community will benefit through preferential recruitment of local labour and procurement as far as possible.

### 8.3. Operational Phase Impacts

The operational phase impacts that have been identified are: environmental monitoring and evaluation; noise; waste management; social; and visual impact.

#### 8.3.1. Environmental Monitoring and Evaluation

The Environmental Commissioner requires regular environmental monitoring and evaluation on environmental performance to be conducted on approved developments, as well as the setting and monitoring of targets for improvement. As part of this exercise bi-annual reports have to be submitted to the Office of the Environmental Commissioner for the duration of the environmental clearance certificate.

#### 8.3.2. Noise Impacts

The operational phase could typically generate noise through the amount and frequency of use of the various types of vehicles that will be used for delivery of goods, transportation of workforce, clients, road noise from the vehicles engines and the tyres contact with the road surface as well as noise from the warning devices on the trucks i.e. hooters.

Namibia has no environmental noise and impact guidelines, reference is made to guidelines published by the International Finance Corporation (IFC, 2007) (See **Table 6** below) and the South African Bureau of Standards (SABS) (SANS 10103, 2008). Both these guidelines are in line with the World Health Organisation (WHO) Guidelines for Community Noise (WHO, 1999).

**Table 6:** Environmental Noise standard

Noise Level Guidelines (IFC, 2007)		
Area	One Hour LAeq (dBA) 07:00 to 22:0	One Hour LAeq (dBA) 22:00 to 07:00
Industrial receptors	70	70
Residential, institutional and educational receptors	55	45

By applying a series of the mitigation measures as proposed for general developments of this nature it is believed that any potential nuisance can be significantly reduced.



### 8.3.3. Waste Management

Waste generated is likely to include empty storage containers and packaging, general litter, by-products of any vehicle maintenance (including petroleum products, coolants, degreasing agents, sediment, rubber particles, detergents), and other hazardous materials. All waste should be disposed of in line with the national waste management directives. General and hazardous waste will be removed by the municipality or contractors and sorted at the municipal landfill site or hazardous waste site as necessary. The proponent should manage their waste in close consultation with the Municipality of Walvis Bay, in line with their requirements.

### 8.3.4. Social Impact

The construction and operation of the terminal will have a positive impact on the socio-economic status of Walvis Bay and its residents. This is due to the job opportunities that will be created both directly related to the terminal operations and indirectly from supporting services; as well as the opportunities for skills development and on-site training. During the construction phase a few temporary jobs will be created but more permanent jobs will be created when operations commence. The establishment of !Nara Namib Free Economic Industrial Zone will have a positive effect on increased port services.

### 8.3.5. Visual and Sense of Place Impacts

The proposed site which is intended for the development is currently vacant and undeveloped and will now be developed with various infrastructure. Individuals who frequent the area on a regular basis will experience a change in their sense of place of the area. The extent of this disturbance will depend on how high they valued the initial aesthetic quality of the site. Therefore, the aesthetics quality of the new structures has to be pleasing and designed to blend in with the natural surrounds.

## 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: Summary of potential impacts**

Impacts	Negative		Positive		No Impact
	Short Term	Long Term	Short Term	Long Term	
<b>Planning and Design Phase</b>					
1. Surface and ground water	X				
2. Fauna and flora	X				
3. Existing infrastructure	X				
4. Traffic		X			
<b>Construction Phase</b>					
5. Fauna and flora	X				
6. Pressure on existing infrastructure	X				
7. Surface and groundwater	X				
8. Health, safety and security	X				
9. Air quality	X				
10. Noise	X				
11. Traffic	X				
12. Waste management	X				
13. Hazardous substances	X				
14. Social	X				
<b>Operational Phase</b>					
15. Environmental Monitoring and evaluation		X			

16. Noise		X			
17. Waste Management		X			
18. Social				X	
19. 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"> <li>• Appoint professional engineers to develop a detailed storm water management design as part of the infrastructure service provision of the development.</li> <li>• The service infrastructure should be designed and constructed by suitably qualified engineering professionals.</li> <li>• Develop and implement a preventative maintenance plan for the service infrastructure.</li> <li>• No dumping of waste products of any kind in or in close proximity to any water bodies.</li> <li>• 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.</li> <li>• Wastewater should not be discharged directly into the environment.</li> <li>• Disposal of waste from the development should be properly managed.</li> <li>• Hazardous waste and contaminated water and soil must be disposed of at an appropriately classified facility or by approved contractors. Hazardous waste disposal certificates must be kept on file.</li> <li>• All hazardous substances must be stored in a properly bunded area to prevent any spillages from entering the surrounding environment.</li> <li>• Any fuel spillage of more than 200 litres must be reported to the Ministry of Mines and Energy.</li> <li>• Emergency response plans and spill contingency plans must be in place and include all fuels, chemicals or hazardous substances being handled.</li> </ul>
Fauna and Flora	<ul style="list-style-type: none"> <li>• Adapt the proposed development to the local environment - e.g. small adjustments to the site layout to avoid potential features such as existing vegetation.</li> <li>• Plant local indigenous species of flora as part of the landscaping as these species would require less maintenance than exotic species.</li> <li>• Prevent the introduction of potentially invasive alien ornamental plant species such as; Lantana, Opuntia, Prosopis, Tecoma, etc. as part of the landscaping as these species could infestate the area further over time.</li> </ul>
Existing Service Infrastructure	<ul style="list-style-type: none"> <li>• Ensure professional design and construction of service infrastructure from qualified and registered engineers.</li> <li>• Ensure consultation and compliance with relevant authorities responsible for services, such as the Municipality, Erongo Red and Namwater.</li> <li>• Engage TransNamib as the national rail services operator in terms of plans for the provision of rail sidings and to ensure that there is no conflict with current or future plans of TransNamib.</li> <li>• Properly documenting all construction activities undertaken in the port through 'as-built' drawings and associated documents.</li> </ul>

PLANNING AND DESIGN PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> <li>• The contractor must determine exactly where services amenities and pipelines are situated before construction / maintenance commences (utility clearance e.g. ground penetrating radar surveys).</li> <li>• Designs and building materials should be as such to reduce dependency on artificial heating and cooling in order to limit the overall energy demand.</li> <li>• Water saving mechanisms should be incorporated within the proposed development's design and plans in order to further reduce water demands.</li> <li>• Train employees on the importance of water and energy savings.</li> <li>• Adhere to water quality guidelines in terms of The Water Act, 1956.</li> </ul>
Traffic	<ul style="list-style-type: none"> <li>• There should be no direct access to the freeway.</li> <li>• The development's boundaries should be positioned at least 45m from the edge of the proclaimed national roads (both trunk and main roads).</li> <li>• Ensure that road junctions have good sightlines.</li> <li>• Limit the type of vehicles to use the internal roads e.g. heavy trucks.</li> <li>• Adhere to the speed limit.</li> <li>• Implement traffic control measures where necessary.</li> <li>• In cooperation with the local authority, erect clear signage regarding restricted areas and roads, access and exit points to the port, speed limits, traffic rules, rail level crossings, etc.</li> <li>• If any extraordinary traffic impacts are expected, traffic management should be performed in conjunction with the local traffic department.</li> </ul>

**Table 9:** Proposed mitigation measures for the construction phase

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
Fauna and flora	<ul style="list-style-type: none"> <li>• Prevent contractors from collecting wood, veld food, etc. during the construction phase.</li> <li>• Do not clear cut the entire development site, but rather keep the few individuals shrubs not directly affecting the development as part of the landscaping.</li> </ul>

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> <li>• Transplant removed vegetation where possible, or plant new trees in lieu of those that have been removed.</li> </ul>
Pressure on existing infrastructure	<ul style="list-style-type: none"> <li>• Educate workforce on water saving measures.</li> <li>• Ensure all potable water points are metered and regularly read.</li> <li>• Ensure that the workforce is provided with temporary toilets during the construction phase.</li> </ul>
Surface and Ground Water	<ul style="list-style-type: none"> <li>• 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.</li> <li>• No dumping of waste products of any kind in or in close proximity to water bodies.</li> <li>• 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.</li> <li>• Ensure that oil/ fuel spillages from construction vehicles and machinery are minimised and that where these occur, they are appropriately dealt with.</li> <li>• Drip trays must be placed underneath construction vehicles when not in use to contain all oil and spillages that might be leaking from these vehicles.</li> <li>• Contaminated runoff from the construction sites should be prevented from entering the surface and ground water bodies.</li> <li>• All materials on the construction site should be properly stored.</li> <li>• Disposal of waste from the site should be properly managed and taken to the Walvis Bay landfill site.</li> <li>• Construction workers should be given ablution facilities at the construction site that are located at least 30 m away from any surface water and these should be regularly serviced.</li> <li>• 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.</li> </ul>
Health, Safety and Security	<ul style="list-style-type: none"> <li>• Construction personnel should not overnight at the site, except for security personnel.</li> <li>• Ensure that all construction personnel are properly trained depending on the nature of their work.</li> <li>• Provide for a first aid kit and properly trained personnel to apply first aid when necessary.</li> <li>• A wellness program should be initiated to raise awareness on health issues, especially the impact of sexually transmitted diseases and Covid-19.</li> <li>• Provide free condoms in the workplace throughout the construction phase.</li> </ul>

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> <li>• Facilitate access to Antiretroviral medication for construction personnel.</li> <li>• Conform to the stipulated protocols related to Covid-19.</li> <li>• Restrict unauthorised access to the site and implement access control measures.</li> <li>• Clearly demarcate the construction site boundaries along with signage of no unauthorised access.</li> <li>• Clearly demarcate dangerous areas and no go areas on site.</li> <li>• Staff and visitors to the site must be fully aware of all health and safety measures and emergency procedures.</li> <li>• 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.</li> </ul>
Air quality	<ul style="list-style-type: none"> <li>• All loose material should be kept on site for the shortest possible time.</li> <li>• It is recommended that dust suppressants such as Dustex be applied to all the construction clearing activities to minimise dust.</li> <li>• Construction vehicles to only use designated roads.</li> <li>• During high wind conditions the contractor must make the decision to cease works until the wind has calmed down.</li> <li>• Cover any stockpiles with plastic or any suitable material to minimise windblown dust.</li> <li>• Ensure construction vehicles are well maintained to prevent excessive emission of smoke.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• No amplified music should be allowed on site.</li> <li>• Inform neighbouring communities and companies of construction activities to commence and provide for continuous communication between them and contractor.</li> <li>• Limit construction times to acceptable daylight hours.</li> <li>• Install technology such as silencers on construction machinery.</li> <li>• Do not allow the use of horns/hooters as a general communication tool, but use it only where necessary as a safety measure.</li> <li>• Provide protective equipment such as ear muffs, masks and ear plugs to workers.</li> </ul>
Traffic	<ul style="list-style-type: none"> <li>• Limit and control the number of access points to the site.</li> <li>• Ensure that road junctions have good sightlines.</li> <li>• Construction vehicles' need to be in a road worthy condition and maintained throughout the construction phase.</li> </ul>

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
	<ul style="list-style-type: none"> <li>• Transport the materials in the least amount of trips as possible.</li> <li>• Adhere to the speed limit.</li> <li>• Implement traffic control measures where necessary.</li> <li>• Minimise the movement of heavy vehicles during peak time.</li> </ul>
Waste Management	<ul style="list-style-type: none"> <li>• It is recommended that waste from the temporary toilets be disposed of at the Walvis Bay Wastewater Treatment Works, on a regular basis.</li> <li>• A sufficient number of waste bins should be placed around the site for the soft refuse.</li> <li>• A sufficient number of skip containers for the heavy waste and rubble should be provided for around the site.</li> <li>• The waste containers should be able to be closed to prevent birds and other animals from scavenging.</li> <li>• Solid waste will be collected and disposed of at an appropriate local landfill in Walvis Bay, in consultation with the local authority.</li> </ul>
Hazardous Substances	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• Storage areas for all substances should be bunded and capable to hold 120% of the total volume of a given substance stored on site.</li> </ul>
Social	<ul style="list-style-type: none"> <li>• Ensure locals enjoy priority in terms of job opportunities, to the extent possible, for skills that are available locally.</li> <li>• Ensure local procurement where commodities are available locally.</li> </ul>



**Table 10:** Proposed mitigation measures for the operational phase

OPERATIONAL PHASE IMPACTS	
Impact	Mitigation Measures
Environmental monitoring and Evaluation	<ul style="list-style-type: none"> <li>• An Environmental Practitioner should monitor the implementation of the EMP, and recommend any changes to this document when necessary.</li> <li>• The Environmental Practitioner should inspect the site on a regular basis (preferably monthly or bi-monthly).</li> <li>• Biannual reports are to be submitted to the Environmental Commissioner.</li> </ul>
Visual and Sense of Place	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Natural colours and building materials such as wood and stone should be incorporated.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• 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 neighbouring properties.</li> <li>• Minimize or prevent noise producing activities and plan to restrict these to daytime as far as practically possible.</li> <li>• Limit construction work to daylight hours.</li> <li>• All machinery must be regularly serviced to ensure minimal noise production.</li> <li>• 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.</li> <li>• Erect temporary or permanent noise barriers / sound baffles, should the need arise.</li> <li>• Placement of noise producing equipment, e.g. compressors, in such a way that noise is directed away from receptors and / or are attenuated.</li> <li>• Where possible, use infrastructure to act as noise barriers to sensitive environments.</li> <li>• Hearing protectors as standard PPE for workers in situations with elevated noise levels.</li> </ul>

OPERATIONAL PHASE IMPACTS	
Impact	Mitigation Measures
Waste management	<ul style="list-style-type: none"> <li>• The area will be kept free of waste, except in designated waste storage areas. Any wastes distributed by winds will be regularly cleaned up.</li> <li>• A sufficient number of waste bins should be placed around the site for the soft refuse.</li> <li>• A sufficient number of skip containers for the heavy waste and rubble should be provided for around the site.</li> <li>• Solid waste will be collected and disposed of at an appropriate local land fill.</li> <li>• Categorise waste into various types such as hazardous, general and recyclable.</li> <li>• Hazardous waste to be disposed of at the appropriate facilities of the Walvis Bay Municipality.</li> <li>• Place priority on waste reduction, waste reuse and waste recycling, in that order.</li> </ul>
Social	<ul style="list-style-type: none"> <li>• The proponent must employ local Namibians where possible.</li> <li>• If the skills exist locally, employees must first be sourced from the town, then the region and then nationally.</li> <li>• Deviations from this practice must be justified.</li> <li>• Local businesses and industries should be supported.</li> </ul>

## 10. DECOMMISSIONING

It is not envisaged to decommission the development in the immediate future. However, should this be considered at the end of its useful life, the area has to be restored to *ante operam* conditions. It is recommended that a decommissioning plan should be developed within the first 24 months of operation of individual activities on the portions.

## 11. CONCLUSION AND RECOMMENDATIONS

### 11.1. 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.

### 11.2. Planning and Design Phase

During the planning and design phase the impacts of traffic were assessed to have a long-term negative effect without mitigation, while the impacts of surface and groundwater; fauna and flora, and existing infrastructure were assessed to have short-term negative effect. 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 and social aspect are deemed to be high positive. This development is not only important to provide services to the end-users, but it also promotes local economic development.

### 11.3. 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.

#### 11.4. 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 suitably qualified professionals to design and supervise the construction of the services and other infrastructure. It is also advised to develop and implement a preventative maintenance plan, which shall be monitored and evaluated regularly.

It is noted that where appropriate, these mitigation measures and any others identified by the EC could be enforced as Conditions of Approval in the Environmental Authorisation.

#### 11.5. 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.*

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 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 resources and logistics enterprises seeking a more cost effective location.

It is thus important that Namibian entrepreneurs take advantage of this position to elevate the country's economic profile and augment the local and national economic 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.

## 12. REFERENCES

1. Climate-data, 2022a, b. Walvis Bay Climate. Walvis Bay Average Temperature. <https://en.climate-data.org/africa/namibia/erongo-region/walvis-bay-835/>
2. Erongo Regional Council (ERC), 2020. Erongo regional Council Website. Available at: [www.erc.com.na](http://www.erc.com.na).
3. Nacoma, 2010. Environmental Management Plan for Henties Bay.
4. 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).
5. Raison, 2016. People of the coast. Available at: <http://www.raison.com.na/Pages%20110%20to%20133.pdf>
6. SADC Environmental Legislation Handbook (SELH), 2012. Environmental Legislation. EIA process flowchart for Namibia. Available at: [www.saiea.com/dbsa\\_handbook\\_update2012/pdf/chapter11.pdf](http://www.saiea.com/dbsa_handbook_update2012/pdf/chapter11.pdf).
7. Sosiak A., and Dixon J., 2006. Impacts on water quality in the upper Elbow River. Water Science & Technology. 53:10. Pp 309-316.
8. Southern African Institute for Environmental Assessment (SAIEA), 2011. SEA for the Central Namib Uranium Rush. Available at: [www.saiea.com](http://www.saiea.com).
9. World Health Organisation (WHO), 1999. Guidelines to Community Noise.
10. IFC, 2007. General Environmental, Health and Safety Guidelines.
11. SANS 10103, 2008. The measurement and rating of environmental noise with respect to annoyance and to speech communication. Pretoria: Standards South Africa