

ENVIRONMENTAL IMPACT ASSESSMENT REPORT (SCOPING)

CREATION OF PUBLIC STREET ON REMAINDER OF SUBDIVIDED PORTION 1 OF FARM 38, ALONG C14 ROAD- WALVIS BAY AIRPORT; ERONGO REGION



Assessed by:



Assessed for:

Walvis bay Municipality
Private Bag 5017
Walvis Bay
Namibia

February 2026

CLIENT NAME: Walvis bay Municipality, Private Bag 5017- Walvis Bay, Namibia

ASSIGNMENT: Conduct an Environmental Impact Assessment Study and Prepare an EIA Study Report for the Creation of Public Street on the Remainder of Portion 1 of Farm 38_Walvis Bay in Erongo Region, Namibia.

REPORT TITLE: Environmental Impact Assessment study report for the Creation of Public Street; Remainder of Portion 1 of Farm 38_Walvis Bay in Erongo Region

EXPERT CERTIFICATION

Nyeppez consultancy cc a registered EIA Lead firm of expert experienced EIA/EA expert, has prepared this EIA project report. The project report was prepared in accordance with Environmental Management Act, 2007 and the Environmental (Impact Assessment and Audit) Regulations, 2012 for submission to Ministry of Environment, Tourism & Forestry, through the directorate of Environmental Affairs.

I certify that the report contains fair disclosure from the proponent, views of neighbours and recommendations to be undertaken by the proponent.

LEAD EXPERT

Name of Lead Expert: Nyeppez Consultancy cc

Company Registration No.

Address: P.O. Box 2325, Katima Mulilo

Contact: +264 814554221: email gsinyepe@yahoo.co.uk

Signature

Date

PROPONENT CERTIFICATION

I, on behalf of **Walvis Bay Municipality** submit this Environmental impact study report for proposed Creation of Public Street; Remainder of Subdivided Portion 1 of Farm 38 Walvis Bay townland in Erongo Region. To my knowledge all information contained in this report is accurate and truthful representation of all findings as relating to the project.

Signature

Date

Designation

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Project Name	Creation of Public Street on Remainder of Subdivided Portion 1 of Farm 38 _Walvis Bay in Erongo Region
Client	Walvis bay Municipality Private Bag 5017- Walvis Bay Namibia Contact: +264 64 201 3111
Lead Consultant	NYEPEZ Consultancy cc (Reg CC/2016/07561) P.O Box 2325 Ngweze Namibia
Date of release	31 February 2026
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Please kindly note the following as declared through the Ministry of safety & security

SWORN DECLARATION:

FULL NAME: NYEPER CONSULTANCY CC STATE UNDER OATH: _____

ID NO: 20160/7561 RESIDENTIAL ADDRESS: _____

POSTAL ADDRESS: P.O. BOX NGWENZE, NAMIBIA

FULL WORK ADDRESS: _____

AGE: 40 years SEX: MALE

OCCUPATION: Town planning officer TEL (HOME): 0814554221

TEL(WORK): 064 502200 HOME LANGUAGE: SILOZI

F.P. 07/03/2026

F.P. 07/03/2026

BUT DECLARE IN ENGLISH. I NYEPER CONSULTANCY CC here by declare that an ~~error~~ ^{error} occurred during advertising of the proposed public Street Erection 17 on roadstead of Swakopmund jurisdiction of ~~from~~ ^{from} EB Walvis Bay. I therefore declare that the correct proponent of the project and adverts placed on 17th and 20th February 2026 is Walvis Bay Municipality and NOT my partners and firm his tributaries as advised. The correct proponent for the proposed 17 Walvis Bay Municipality.

I KNOW AND UNDERSTAND THE CONTENTS OF THIS DECLARATION.
I HAVE NO OBJECTION IN TAKING THE PRESCRIBED OATH.
I CONSIDER THE PRESCRIBED OATH TO BE BINDING TO MY CONSCIENCE.

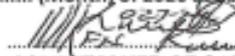
PLACE: Henties Bay
DATE: 09/03/2026
TIME: 11:07

SIGNATURE: 

I certify that the deponent has knowledge that he/she knows and understands the content of this statement which was sworn to, before me after the deponent read through his/her statement he/she placed his/her signature there in my presence at Henties Bay Police Station.

On this 09 (Day) March (Month) of 2026 at about 11:07 hours.




COMMISSIONER OF OATHS:

NAME: Kayambele F-A

RANK & F/ NO: CST 027794

HENTIES BAY POLICE STATION
DR. NICKY IYAMBO STREET
P.O BOX 111
HENTIES BAY

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SITE ASSESSEMENT
CREATION OF PUBLIC STREET ON REMAINDER OF SUBDIVIDED PORTION 1 OF FARM 38 OF
WALVIS BAY.

Proposed Land Use: Creation of Public Street

Total Site Area: 49,5703 Hectares, equivalent to 495,703m² of Remainder of Subdivided Portion 1 of Farm 38 Walvis Bay

Brief project Description

In 2016, the Walvis Bay Local Authority proposed the creation and subdivision of townland land into different portions with intention to establish a township and industrial hub to expand and compliment industrial economic development in Walvis Bay. **The proposed subdivision was formalized but fell short of the creation of streets to serve an access to the different portions created through sub-division.**

AK Bunkers & Fuel Distributors cc was among the investors that benefited from the land allocation of the portions created on portion 1 of farm 38. Thus, in order for any development to take-place on the subdivided land, it is required by Urban & Regional Planning Act of 2018 that access public streets should be created and approved by the office of the Environmental commissioner as Creation of Street forms part of the listed activities that requires undertaking of Environmental Scoping study. The creation of streets on the remainder forms and/or will form as part of the overall subdivision and rezoning application on Farm 38, Walvis Bay.

A portion (15ha) of Farm 38, Walvis Bay, was allocated by the Walvis Bay Municipality to Ak Bunkers & Fuel Distributors Cc for development of a Truck Port. The proponent acquired an Environmental Clearance Certificate for development and operating a Truck Port, while the subdivision application of portion 1 of farm 38 was being assessed by the Urban Board for approval.

Consequently, the Urban Planning Board referred back the subdivision application citing that an EIA Scoping study for creation of Public Street should first be acquired before the subdivision of remainder of portion 1 of farm 38 could be considered for approval. As a result, the subdivision remainder of portion 1 of farm 38 application was put on hold pending ECC for the creation of public streets, hence this application. Other statutory approvals from relevant stakeholder such as the Walvis Bay Municipality and the Roads Authority were obtained.

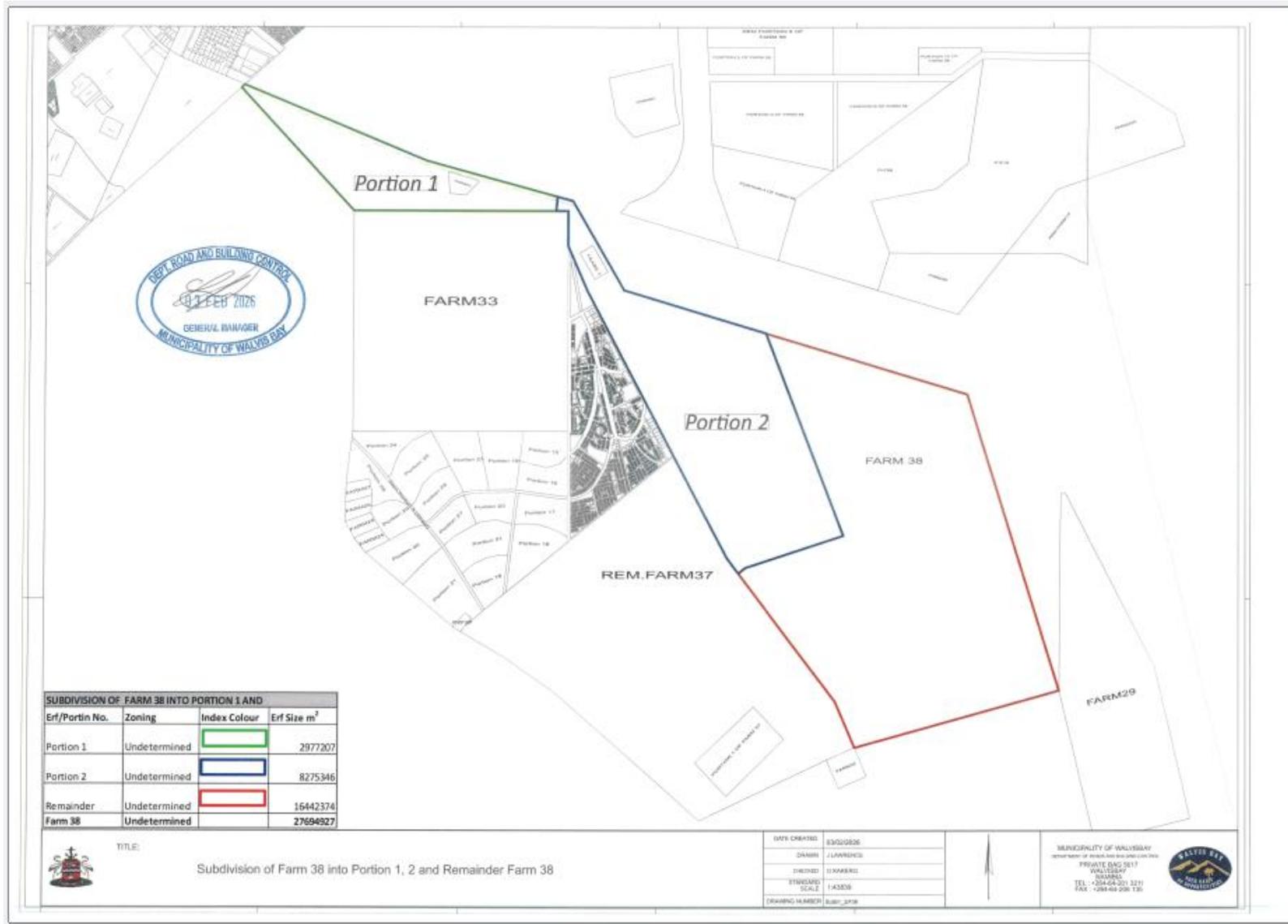


Figure 1: Portion 1 of Farm 38 (in Green)

1. INTRODUCTION

1.1 Background

WALVIS BAY MUNICIPALITY through AK Banker & Distributors cc appointed Nyepez Consultant cc to apply for the Environmental Clearance Certificate at the Ministry of Environment Forestry & Tourism to obtain a ECC for the Creation of Public Streets (on the Remainder of subdivided Portion 1 of Farm 38, Walvis Bay). Without the required Environmental Clearance for the creation of public streets on the remainder of portion 1, that all proposed and approved development on remainder of portions 1 (portions 1-12) will not proceed pending the ECC for creation of public streets.

The proposed public street on remainder of subdivided Portion 1 of Farm 38 is aimed at providing access to subdivided portions (Portion 1-12) as indicated, which shall link the proposed public streets with the existing C14 main road in order to provide safe and flexible human and vehicular mobility.

The creation of public streets on the remainder of portion 1 of Walvis Bay farm 38 is vital to ensure provision of access and enhance economic activity in the area. The streets shall facilitate movement of people and goods, provide public spaces for interaction and contribute to the overall quality of life. Moreover, well-designed public streets can also enhance safety, improve accessibility and promote a sense of community. The Creation of public street is vital to provide for coordinated access to future planned development on Farm 38.

1.2 Terms and reference

The terms of reference for this Environmental Assessment are to determine the potential bio-physical and social impact emanating from the construction and operation of the proposed truck port project. The aims and objectives of the assessment are:

- To establish and describe the known ecological baseline conditions for environmental, health and social conditions existing in the project area from secondary information and a reconnaissance site visit
- To conduct an environmental impact identification and assessment and to provide a description of the likely environmental impacts of the proposed project during the construction and operation phases
- To also demonstrate that the Environmental Assessment complies with the current and/or expected Namibian legislation requirements for environmental, social performance and health.

- To identify and draft actions for environmental and social management plan of the proposed farming project
- To identify and document mitigation measures to minimise identified adverse environmental impacts

Based on the above the ESMP lists those management actions that are needed to ensure that undue or reasonably avoidable adverse impacts of the planning, construction and operations of the project are prevented and that the positive benefits of the project are enhanced or increased. It also gives responsibilities and will be used as a checklist to monitor compliance at the site.

2. CURRENT LAND USE

In terms of the Local Authorities Act 23 of 1992, the proposed site is under the jurisdiction of the Walvis Bay townland and permission or approval to conduct the Scoping study was obtained from the owners of the land which is Walvis Bay Municipality. The proposed street creation for the subdivision of farm 38 of Walvis Bay townland is currently not formalized and not registered, hence the submission to register the street and acquire approval from the Urban & Regional Planning Board. The proposed land or area for street creation is vacant, operational but not formalized and shall only be formalized once the necessary Environmental Clearance certificate is obtained from the relevant authorities. The proposed project site is currently zoned "undetermined", however a suitable zoning for "Streets" shall be applied and incorporated into farm 38 subdivision Zoning map for the land use to be permitted.



Municipality of Walvis Bay

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E-mail	enambahu@walvisbaycc.org.na
Date	08 February 2024

Dear Sir/Madam

Subject: SUBDIVISION OF THE REMAINDER FARM 38 INTO PORTIONS 1, 2 AND REMAINDER FARM 38 AND SUBSEQUENT SUBDIVISION OF PORTION 1 (A PORTION OF REMAINDER FARM 38) INTO PORTIONS 1 TO 12 AND REMAINDER PORTION 1 (AS STREETS); REZONING OF NEWLY CREATED PORTION 2 FROM UNDETERMINED TO SPECIAL (TRUCK PORT WITH AUXILIARY USES); REZONING OF NEWLY CREATED PORTIONS 3 TO 5 AND 7 TO 10 FROM UNDETERMINED TO INDUSTRIAL; REZONING OF NEWLY CREATED PORTION 11 FROM UNDETERMINED TO PUBLIC OPEN SPACE; REZONING OF NEWLY CREATED PORTION 12 FROM UNDETERMINED TO UTILITY SERVICES (EXISTING SUBSTATION); REZONING OF THE NEWLY CREATED REMAINDER PORTION 1 FROM UNDETERMINED TO STREETS; AND CONSENT TO COMMENCE WITH THE CONSTRUCTION OF THE TRUCK PORT WHILE SUBDIVISION AND REZONING ARE IN PROGRESS

Ref. No.: FARM 38

I refer to the above and to your application dated 14 June 2023.

You are hereby informed that the above application has been approved by the Municipal Council at its meeting held on 27 November 2023 (as per item 11.8) as follows:

(1) That in accordance with Section 109(2)(a) of the *Urban and Regional Planning Act, 2018 (Act No. 5 of 2018)*, the application for the Subdivision of the Remainder Farm 38 into Portions 1, 2 and Remainder Farm 38 and subsequent Subdivision of Portion 1 (a Portion of Remainder Farm 38) into Portions 1 to 12 and Remainder Portion 1 (as Streets), be recommended to the Urban and Regional Planning Board for approval, as generally indicated on sketch plan numbers SUB/1_2/RF38 dated 21 August 2023 and SUB/P1F38/12 dated 12 September 2023, which bears the approval stamp of the Municipal Council.

- (a) That the proposed portions (new portions 1 to 12) be provided with one electricity, water and sewerage connection.
- (b) That the Department of Roads and Building Control makes suitable arrangements regarding road infrastructure, including access to the proposed portions.



Please address all correspondence to the Chief Executive Officer

- (c) That suitable arrangements be made to the satisfaction of Telecom Namibia regarding telephone cables and connections.
- (d) That suitable arrangements be made to the satisfaction of Erongo RED regarding all electricity cables and connections.
- (e) That the subdivision application be lodged with the Urban and Regional Planning Board in accordance with Section 109(5) of the *Urban and Regional Planning Act, 2018 (Act No. 5 of 2018)*.

(2) That the following conditions be registered against Newly Created Portions 1, 2 and Remainder Farm 38 and New Portion 1 to 5; 7 to 10:

- (a) The erf shall only be used or occupied for purposes which are in accordance with, and the use or occupation of the erf shall at all times be subjected to, the provision of the Walvis Bay Town Planning Scheme (Zoning Scheme) prepared and approved in terms of the Urban and Regional Planning Act, 2018 (Act No.5 of 2018).
- (b) The building value of the main building, excluding the outbuildings to be erected on the erf be at least four times the valuation of the erf.
- (c) That a 70-meter-wide electrical servitude area to be registered over the proposed newly created Portion 2 (a Portion of Remainder Farm 38) and Portions 1, 6 and 11 (Portions of Portion 1 of the Remainder Farm 38) in favour of NamPower as indicated on sketch plan SERVITUDE PLAN dated 12 August 2023, which bears the approval stamp of the Municipal Council.
- (d) That a water line SERVITUDE PLAN be registered against Portions 2, 3, 8 and 9 of Remainder Farm 38.

(3) That in accordance with Sections 56(2) and 109(2)(a) of the *Urban and Regional Planning Act, 2018 (Act No. 5 of 2018)*, the applications for rezoning of newly created Portion 2 from "Undetermined" to "Special" (Truck Port with Auxiliary Uses); rezoning of newly created Portions 3 to 5 and 7 to 10 from "Undetermined" to "Industrial"; rezoning of newly created Portion 11 from "Undetermined" to "Public Open Space"; rezoning of newly created Portion 12 from "Undetermined" to "Utility Services" (Existing Substation) and the rezoning of the newly created Remainder Portion 1 from "Undetermined" to "Streets" be recommended to the Urban and Regional Planning Board for approval, as generally indicated on sketch plan ZONINGMAP/P1_12 dated 12 August 2023, which bears the approval stamp of the Municipal Council.



- (4) That the Municipal Council obtains the Environmental Clearance Certificate (ECC) from the Ministry of Forestry, Environment and Tourism, prior to the submission of the subdivision application (for the creation of streets) to the Urban and Regional Planning Board (Minister of Urban and Rural Development).
- (5) That consent be granted to establish a Truck Port on Newly Created Portion 2 (a Portion of Portion 1 of Remainder Farm 38) in accordance with Clauses 6.1.2 and 12.1 of the Walvis Bay Town Planning (Zoning) Scheme, while the subdivision and rezoning application is in progress.
- (6) That condition (5) above only comes into effect when the Municipal Council has obtained access approval from Roads Authority to Main Road MR 36 for access provision for the proposed Truck Port development on Newly Created Portion 2 (a Portion of Portion 1 of Remainder Farm 38).
- (7) That the Municipal Council accepts responsibility for the accuracy of the figures and/or dimensions shown on the sketch plans which bear the Municipal Council's stamp of approval.

For your information and purposes, the confirmed and signed minutes of the Municipal Council are attached.

Should you have additional queries, please do not hesitate to contact the Town Planning Section at townplanning@walvisbaycc.org.na or (064) 201 3229.

Yours faithfully



Otniel Kakero

Town Planner

Roads and Building Control



Figure 2: Council approval_Creation of Public Street

3. ACCESSIBILITY TO SERVICES & COMMUNITY FACILITIES

Remainder of Portion 1 of Farm 38 is located along the C14 main road, between Walvis Bay Urban and the Walvis Bay International Airport. The site is accessible and may be accessed through the C14 tarred road to the Walvis Bay International airport, which is the road connecting Walvis International Airport with the rest of Urban Walvis Ba. The access public street to be created will serve as a link or access entrance and exist street for the approved subdivided portions (portion 1-12) and which shall link future upcoming developments in the area.

The different portions subdivided on farm 38 are portions of land reserved for future Industrial business commercial development which shall in-turn create a build-up or hub of integrated Industrial land uses on remainder of portion 1. There is no existing land use activity on the site but most developments are still undergoing statutory approvals.



Figure 3: C14 Access-road to the project site



Samsung Quad Camera
Shibobow



Samsung Quad Camera
Shibobow

Figure 4: Surrounding Industrial development

4. OWNERSHIP & PROPOSED LAND USE

In terms of the Council resolution of the Walvis Bay Municipal Council, Remainder of subdivided portion 1 of Farm 38 inextant of 49,5703 is land zoned “Undetermined” and reserved for Public Street Creation and shall be rezoned from “Undetermined” to “Streets”. This public street shall remain a property of Council for maintenance, repair and future upgrade

5. POLICY AND LEGAL FRAMEWORK

Table 1: describes the environmental framework of the project.

LEGISLATION/GUIDELINE/POLICY	APPLICABLE CLAUSE/POLICY	COMMENTS
Namibia 's Environmental Assessment policy (1995)	List of activities that require EA.	Tourism facilities need to be assessed in terms of the impact on the natural and social environmental and resources.
Local Authorities Act 23 of 1992	To provide for the determination, for purposes of local government, of local authority councils;	The establishment of such local authority councils; and to define the powers, duties and functions of local authority councils;
Urban and Regional Planning Act, 2018.	Consolidate the laws relating to urban and regional planning; to provide for a legal framework for spatial planning in Namibia; to provide for principles and standards of spatial planning;	To establish the urban and regional planning board; to decentralise certain matters relating to spatial planning
Environmental Management Act, 2007	Listing of activities and prohibition in respect of listed activities through EMA Regulations	To promote the sustainable management of the environment and the use of natural resources by establishing principles for decision making on matters affecting the environment;
Inland fisheries resources act,2003 and regulations	Promotion, sustainable utilisation and protection of inland fisheries resources. Restrictions by limiting number of nets, mesh, sizes, net length and damaging fishing methods.	A fishing licence needs to be obtained from the regional office to engage in recreational fishing in any inland waters by means of any regulated fishing gear.
Walvis Bay Town Planning Scheme/ Zoning Scheme 2014	Provides for the clear description of land uses within Walvis Bay local authority together with restrictions of use	Statutory document serving as a strategic guide tool to control land use and ensure/enforce compliance
Namibia transport Act 22 of 1999	Guides and control the use of road by heavy and light vehicles on Namibian public roads	Control of traffic on public roads, the licensing of drivers, the registration and licensing of

		vehicles, the control and regulation of road transport across Namibia's borders
Walvis bay Integrated Urban Spatial Development Framework 2015	IUSDF) for Walvis Bay which includes the necessary urban and environmental management policies and plans and urban development programmes to guide and manage urban growth that is completed and adopted by Council.	legal framework for spatial planning in Namibia; to provide for principles and standards of spatial planning; to establish the urban and regional planning board; to decentralise certain matters relating to spatial planning;

Table 2: Other relevant legal frameworks related to waste management in Namibia

Framework	Emphasis
Atmospheric Pollution Prevention Act No. 45 of 1965	<i>Prevention of pollution of the atmosphere.</i>
Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal, 1992	<i>Environmental sound management of hazardous waste and other wastes through the reduction of their movements, for the purpose of reducing their impacts on human health and environment</i>
Hazardous Substances Ordinance No. 14 of 1974	<i>Control of toxic substances (including manufacture, use, disposal, import and export).</i>
Pollution Control and Waste Management Bill of 1999	<i>Prevention and regulation of air, water and land pollutants; establishment of an appropriate framework for integrated pollution prevention and control, regulation of noise, dust and odour, as well as an establishment of a system of waste planning and management.</i>
Pollution Prevention Ordinance No. 11 of 1976	<i>Prevention of air pollution.</i>
Prevention and Combating of Pollution of Sea by Oil Act No. 6 of 1981	<i>Prohibits the discharge of oil from ships, tanker or off-shore installation and gives the state certain powers to prevent such pollution and deal with removal of oil spills.</i>
Prevention and combating of pollution of the sea by oil Act 24 of 1991	<i>Prevention of sea pollution by oil.</i>
UN Convention on the Law of the sea, 1982	<i>Protection and preservation of the marine environment including the seabed, ocean floor, subsoil and the resources in the environment.</i>
Water Resources Management Act No. 24 of 2004	<i>Prevention of water pollution.</i>

6. DESCRIPTION OF THE PROPOSED PROJECT

6.1 Locality

The development is located on a major national road, the C14 road between Walvis Bay urban and Walvis townlands heading toward Walvis Bay international Airport. The site is located west of the C14 highway – about 3km South of Dune's Mall on the following GPS position Lat -22.98129, Lon 14.57527. The site has good access from the national distributor highway (BC14) – and fast connectivity to the ports of Walvis Bay (~ 10 minutes / 5km).

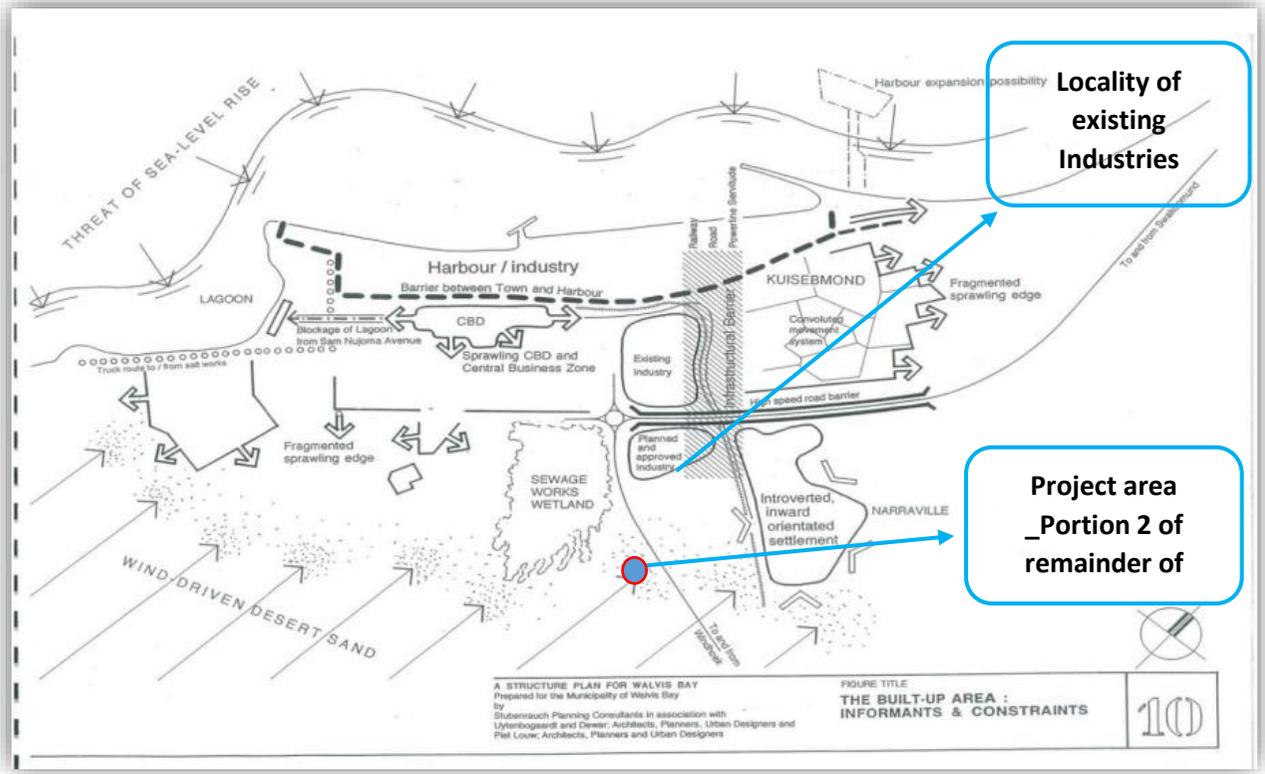
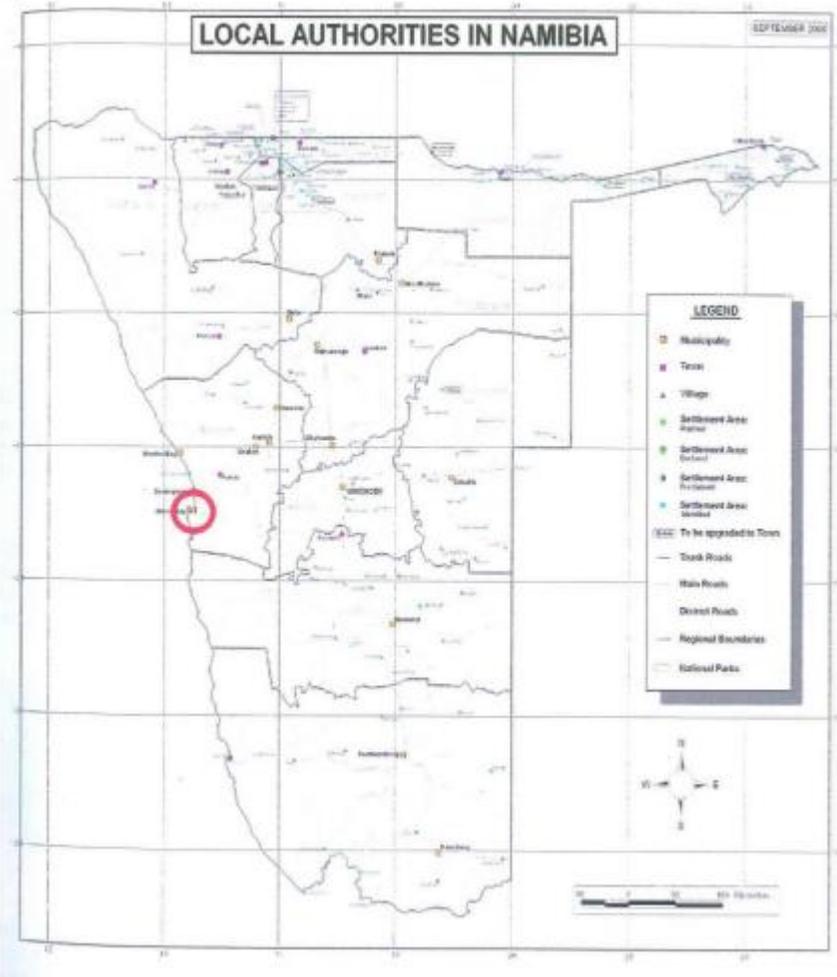


Figure 7: Walvis Bay Local Authority Area & Project area (structure plan, 2011)

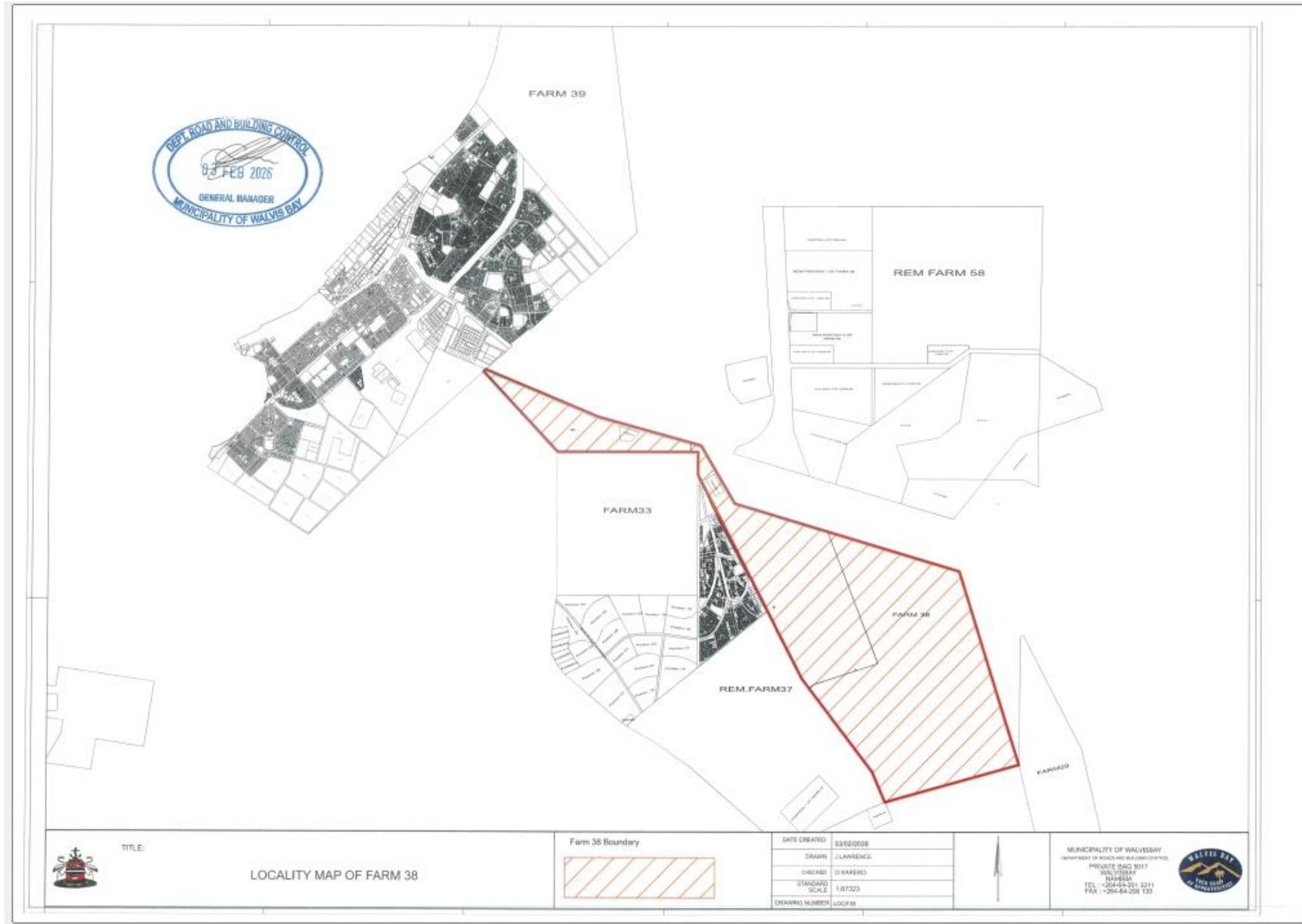
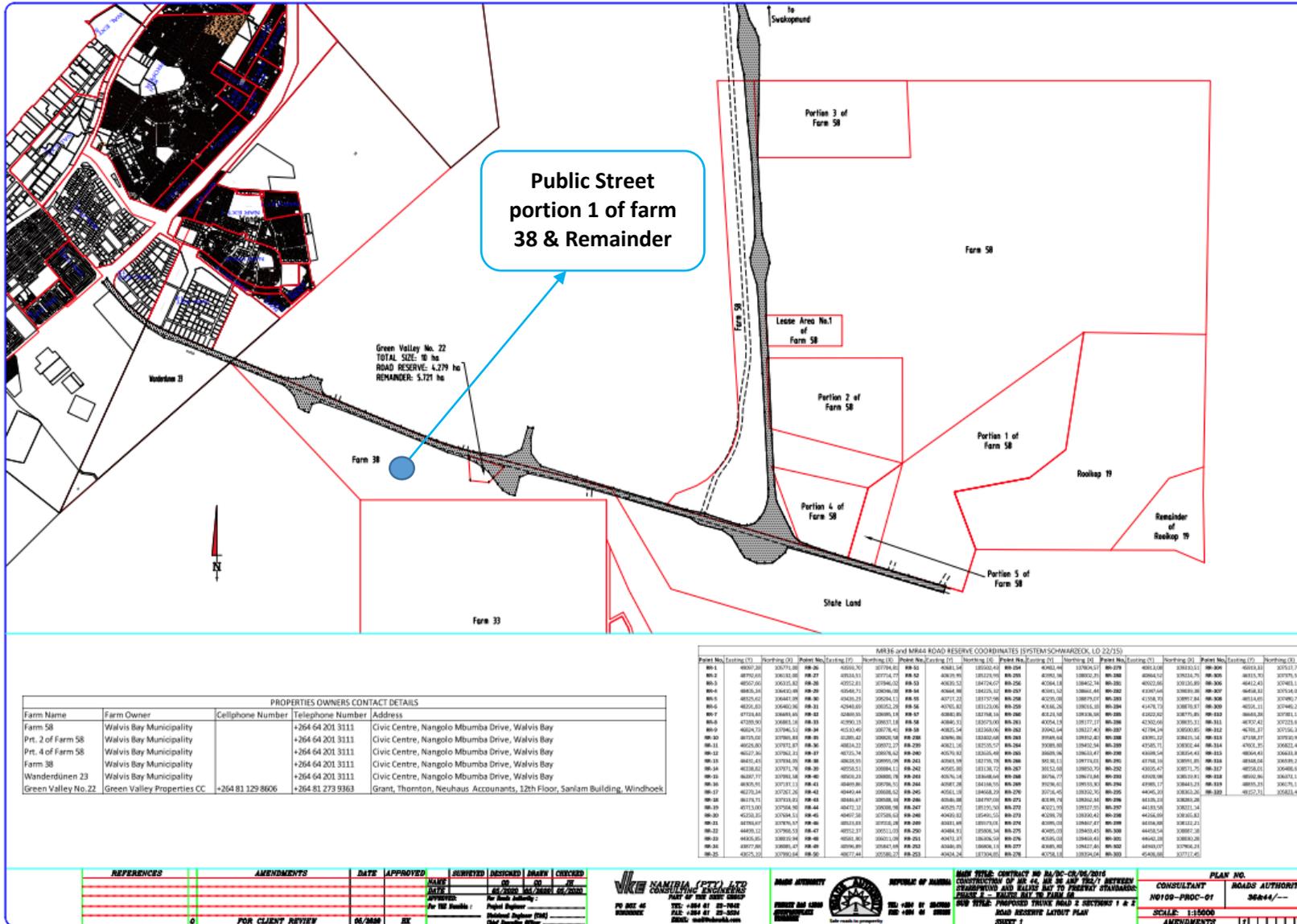


Figure 8: Locality Map_Portion 1 of farm 38



6.2 Project Rationale

The creation of public street in land subdivision is a fundamental component of urban planning and land development, serving to organize, connect and service new portions of land. Streets are not merely established for vehicular traffic but also function as crucial public spaces that provide accessibility, infrastructure and safety. The core rationales for creating a public street on the Remainder of subdivided portion 1 of Farm 38 are as follows:

1. Accessibility and Mobility

- **Vehicular Circulation:** the Public Streets to be created on Remainder of subdivided portion 1 of Farm 38 will be designed to provide safe and efficient access to each subdivided lot. It will connect with existing road networks such as the C14 Main Road to ensure logical traffic flow.
- **Pedestrian and Cycle Access:** the Public Street will be well-designed which will include sidewalks and cycle routes to facilitate non-motorized movement.

2. Infrastructure and Service Provision

- **Utility Corridors:** The Public Street rights will also serve as essential corridors for laying down underground utilities, including water, sewage, electricity and telecommunications.
- **Stormwater Management:** The envisaged Public Streets will be crucial for managing stormwater runoff through designed gradients, curbs, gutters, and sustainable designs.
- **Emergency Access:** The Public Streets will be designed to accommodate service vehicles like fire trucks, ambulances and garbage trucks.

3. Environmental and Site Optimization

- **Topographical Adaptation:** The Public Street and/or road layout will allow developers to work with the natural landscape, minimizing extensive land modification.
- **Density and Plotting:** The street placement will assist to determine the layout and density of the residential, commercial, or industrial erven, ensuring efficient use of land.

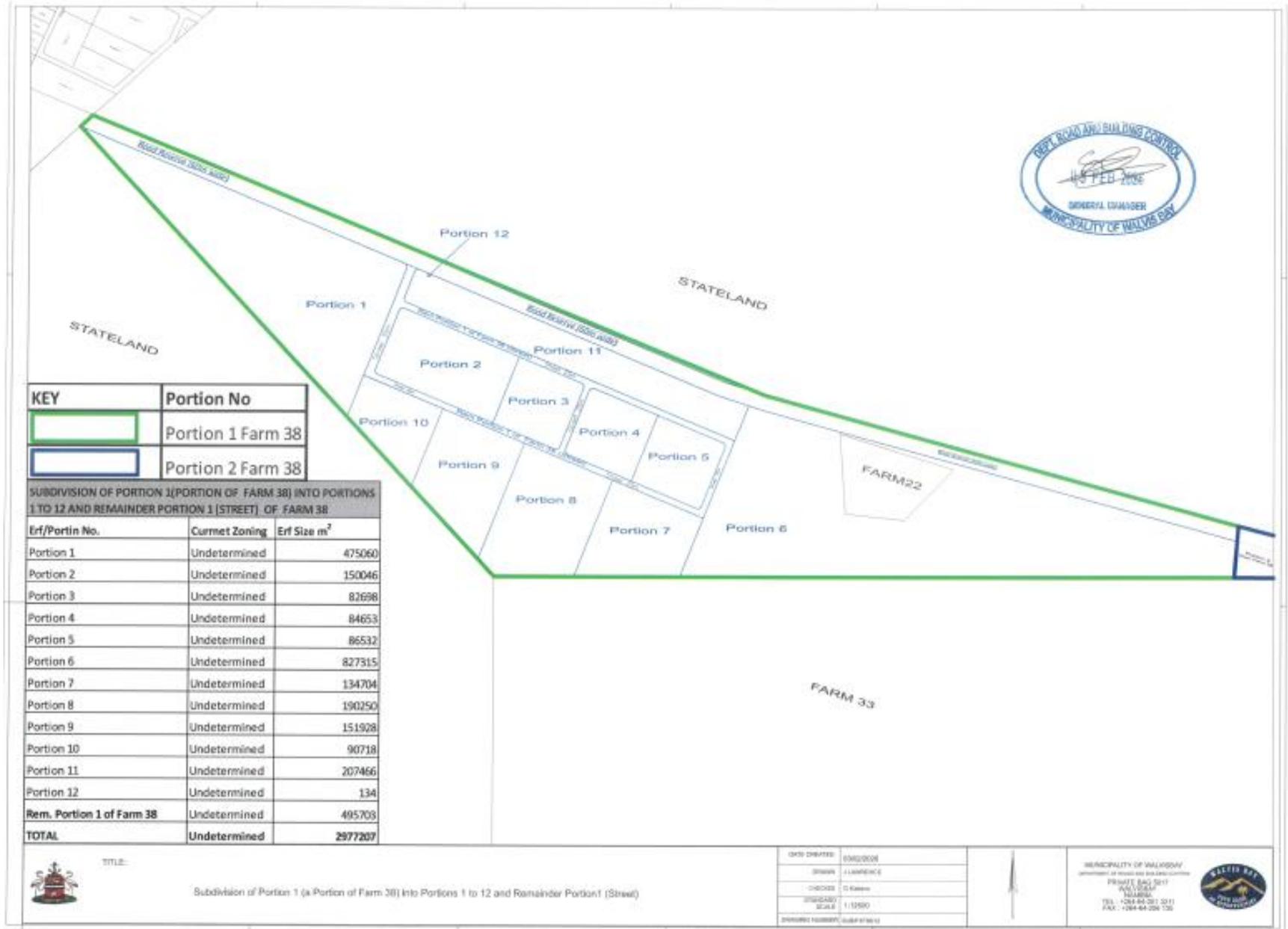
4. Public Space, Social Function and Amenity

- **Community Character:** The Public Streets will shape the aesthetic character of the neighbourhood, acting as the public realm where residents interact.
- **Landscaping and Greenery:** Streets provide space for trees and landscaping, which improve air quality, provide shade, and enhance the visual appeal of the area.

In summary, the street network is the skeleton of any new subdivision, dictating how the land is used, accessed, serviced, and experienced by its residents.

7.4 Street Creation description; Remainder of Portion 1 of farm 38

- The length of the C14 main road-reserve to Walvis Bay International Airport is 60metrres wide
- The electrical servitude area and line running on the public Open Space to service the subdivided portions (portions 1-12) is 70metres wide.
- The width/length of the proposed Internal public street to be created on Remainder of Subdivided Portion 1 of farm 38 will be 35metres and 25 metres respectively. The layout is provided on page 24 below.



KEY	Portion No
	Portion 1 Farm 38
	Portion 2 Farm 38

SUBDIVISION OF PORTION 1 (PORTION OF FARM 38) INTO PORTIONS 1 TO 12 AND REMAINDER PORTION 1 (STREET) OF FARM 38

Erf/Portin No.	Current Zoning	Erf Size m ²
Portion 1	Undetermined	475060
Portion 2	Undetermined	150046
Portion 3	Undetermined	82698
Portion 4	Undetermined	84653
Portion 5	Undetermined	86532
Portion 6	Undetermined	827315
Portion 7	Undetermined	134704
Portion 8	Undetermined	190250
Portion 9	Undetermined	151928
Portion 10	Undetermined	90718
Portion 11	Undetermined	207466
Portion 12	Undetermined	134
Rem. Portion 1 of Farm 38	Undetermined	495703
TOTAL	Undetermined	2977207



TITLE:

Subdivision of Portion 1 (a Portion of Farm 38) into Portions 1 to 12 and Remainder Portion 1 (Street)

DATE DRAWN	05/02/2006
DRAWN	J. LAWRENCE
CHECKED	G. KASSA
DRAWING SCALE	1:12500
DRAWING NUMBER	Sub 01/06/12



MUNICIPALITY OF WALKSBAY
 (INCORPORATED 1994)
 PRIVATE BAG 5011
 WALKSBAY
 NAMIBIA
 TEL: +264 64 291 5011
 FAX: +264 64 296 132



7. ENVIRONMENTAL AND SOCIAL OVERVIEW OF THE AFFECTED ENVIRONMENT

8.1 Introduction

In the following sections the current biological, physical and socio-economic conditions of the study area are discussed and their sensitivities to change are considered

8.2 Climate

The climate of the area is fundamental in determining the availability of water and also reveals much about its ecological sensitivity and resilience to change. The climate data below (table below) is typical for Erongo region as part of the name desert and is expected to occur at the site. The climate in Walvis Bay is comfortable and mostly clear. Over the course of the year, the temperature typically varies from 50°F to 71°F and is rarely below 45°F or above 86° Based on the tourism score, the best time of year to visit Walvis Bay for warm-weather activities is from mid November to late May.

Along the coast the southerly and south-westerly winds dominate both in frequency (30-45 %) and strength (6 to more than 9 m/s), whereas the variable winds of the interior do not present a clear pattern. The warm, dry and dusty easterly winds that blow during late autumn and early winter, cause much discomfort along the coast as it is usually hot as well. The cool air mass above the cold Atlantic Sea water is overlain by a warmer, dry air mass, resulting in an almost permanent temperature inversion. Relative humidity is usually higher than 80%. These conditions are ideal for the formation of fog and low stratus clouds. On average approximately 100 days are foggy, while there is a somewhat higher occurrence during winter along the central coast. This fog blanket is an important, and sometimes the sole source of moisture for the fauna and flora of the Namib Desert.

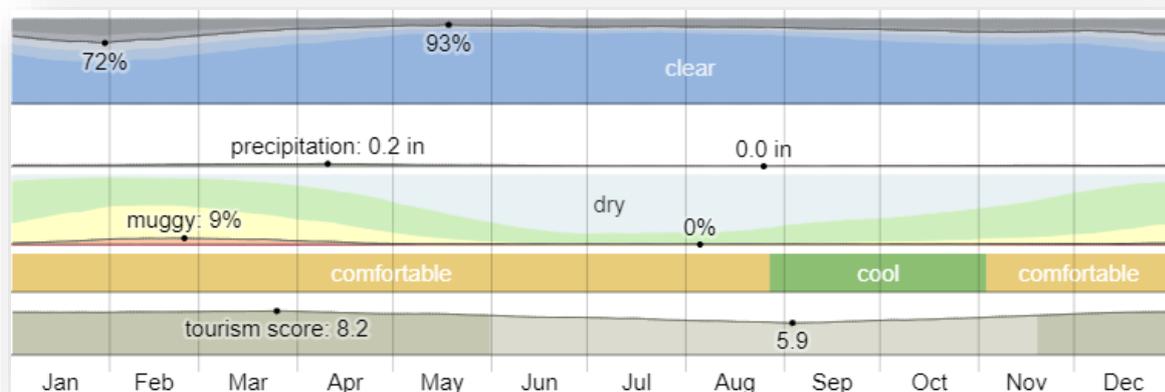


Figure 12: Avarage Percentage of climate in Erongo region(Walvis bay)

8.2.1 Temperature

For the purposes of this report, the geographical coordinates of Walvis Bay are -22.958 deg latitude, 14.505 deg longitude, and 20 ft elevation. The topography within 2 miles of Walvis Bay contains only modest variations in elevation, with a maximum elevation change of 125 feet and an average elevation above sea level of 15 feet. Within 10 miles also contains only modest variations in elevation (377 feet). Within 50 miles contains only modest variations in elevation (2,884 feet). The area within 2 miles of Walvis Bay is covered by sparse vegetation (40%), bare soil (25%), grassland (17%), and water (16%), within 10 miles by bare soil (49%) and water (39%), and within 50 miles by water (48%) and bare soil (46%).

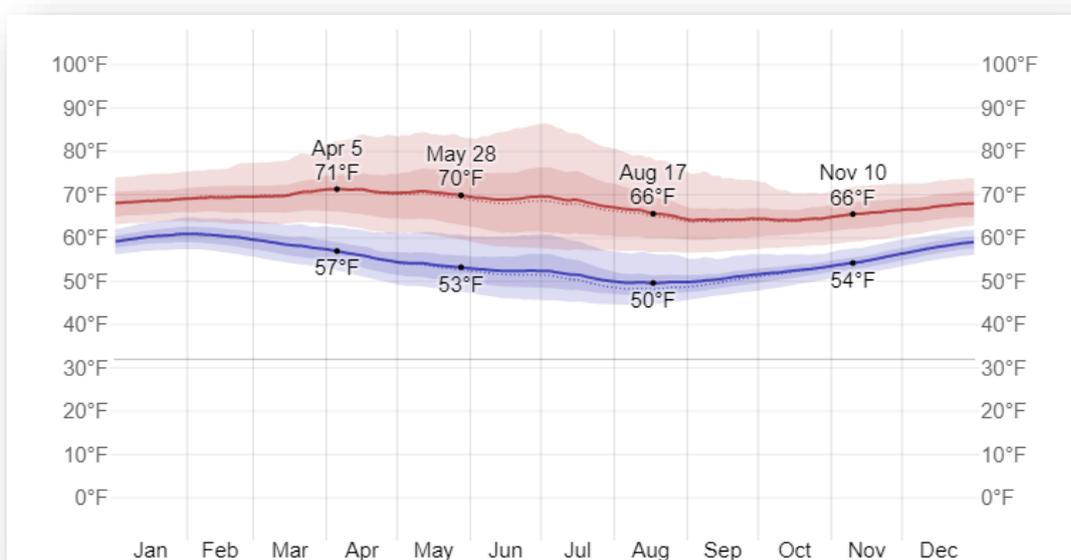


Figure 13: The average temperatures in walvis bay

8.2.2 Clouds

In Walvis Bay, the average percentage of the sky covered by clouds experiences significant seasonal variation over the course of the year. The clearer part of the year in Walvis Bay begins around March 7 and lasts for 9.5 months, ending around December 24. The clearest month of the year in Walvis Bay is May, during which on average the sky is clear, mostly clear, or partly cloudy 93% of the time. The cloudier part of the year begins around December 24 and lasts for 2.5 months, ending around March 7. The cloudiest month of the year in Walvis Bay is January, during which on average the sky is overcast or mostly cloudy 25% of the time.

8.2.3 Precipitation

Walvis Bay does not experience significant seasonal variation in the frequency of wet days (i.e., those with greater than 0.04 inches of liquid or liquid-equivalent precipitation). The frequency ranges from 0% to 3%, with an average value of 1%.

Among wet days, we distinguish between those that experience rain alone, snow alone, or a mixture of the two. The month with the most days of rain alone in Walvis Bay is March, with an average of 0.7 days. Based on this categorization, the most common form of precipitation throughout the year is rain alone, with a peak probability of 3% on April 6.

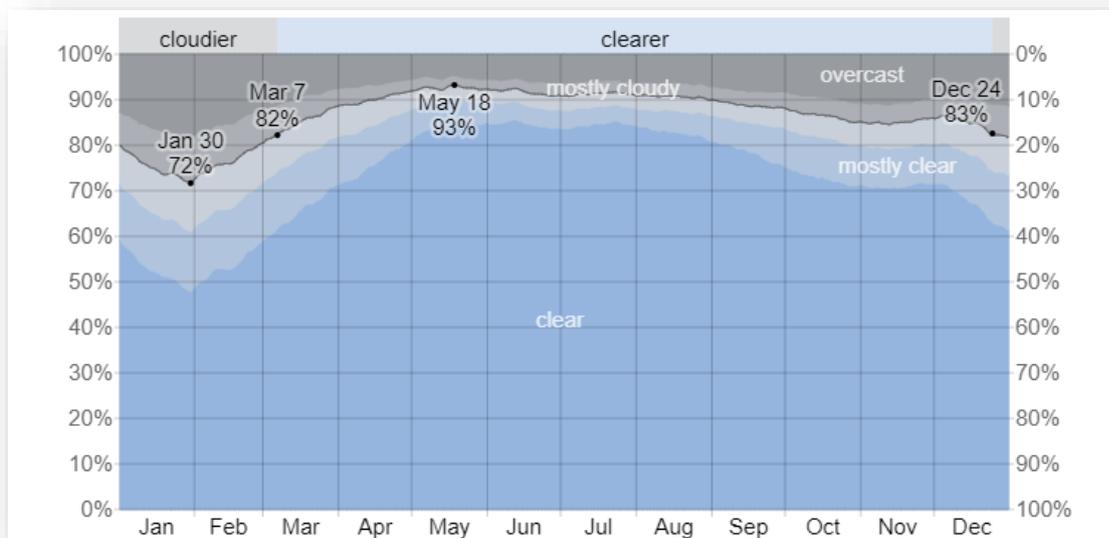


Figure 14: The average precipitation percent in Walvis bay

8.2.4 Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night. The perceived humidity level in Walvis Bay, as measured by the percentage of time in which the humidity comfort level is muggy, oppressive, or miserable, does not vary significantly over the course of the year, staying within 5% of 5% throughout.

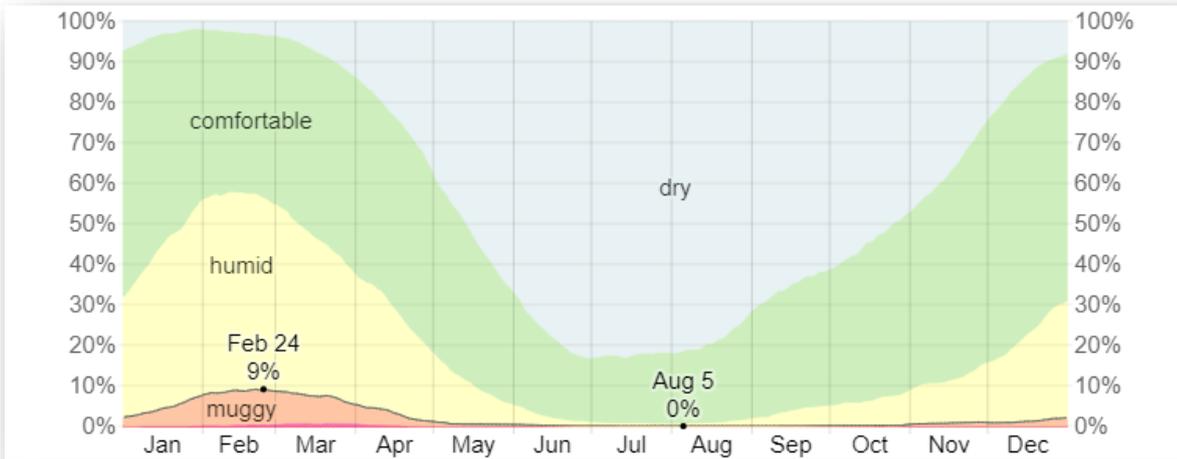


Figure 15: The average Humidity in walvis bay

8.2.5 Wind

This section discusses the wide-area hourly average wind vector (speed and direction) at 10 meters above the ground. The wind experienced at any given location is highly dependent on local topography and other factors, and instantaneous wind speed and direction vary more widely than hourly averages. The average hourly wind speed in Walvis Bay experiences mild seasonal variation over the course of the year. The windier part of the year lasts for 6.0 months, from May 30 to November 29, with average wind speeds of more than 8.7 miles per hour. The windiest month of the year in Walvis Bay is July, with an average hourly wind speed of 9.4 miles per hour. The calmer time of year lasts for 6.0 months, from November 29 to May 30. The calmest month of the year in Walvis Bay is March, with an average hourly wind speed of 7.9 miles per hour.

8.3 Topography, Geology and soils

Aeolian sedimentation processes are active in the Kalahari and Namib Deserts, where dunes and Hamada type landscapes prevail. Chemical weathering is hampered, mostly due to the lack of moisture. In the western Namib Desert, however, the breakdown of bedrock material is caused by salt contained in the coastal fog and derived from the marine environment. Tertiary and Quaternary deposits, such as dunes and flat sand plains, are morphological features dominant in the Kalahari and Namib Desert. Due to the low relief in these areas, calcareous deposits can be found in weakly eroded valleys.

Large areas of the Namib are completely soilless, with bedrock at the surface. Other areas are covered with shifting sand. Soils that do occur are often highly saline, impregnated with gypsum, or cemented firmly by calcium carbonate, the latter forming a calcrete layer just below the surface. Walvis Bay, with its large bay and sand dunes, is an important centre of tourism activity in Namibia. Attractions include the

artificial Bird Island, centre of a guano collection industry, the Dune 7 sand dune, the salt works, the abundant birdlife. The locality of Walvis Bay, Erongo Region, Namibia (-23.11425 14.34746 -22.79425 14.66746), Average elevation: 30 m, Minimum elevation: -1 m, Maximum elevation: 173 m

Walvis Bay, Walvis Bay Urban, Namibia is only 7 meters / 22.97 feet above sea level, so if the sea rises 2 meters nearby areas will be affected. Flooding will be more common, and the population of nearby coastal areas will have to be relocated. The aquifer lithology in most cases comprises fine to medium grained sand, with intercalated clay-rich layers/lenses. Layers of coarser sand and gravels, a few metres thick, are often found at the bottom of the succession, just above bedrock, and are considered to be the most productive part of the aquifer. The mean saturated thickness of the aquifer is 15m. Transmissivity is generally between 150 and 1600 m²/day and storage coefficient between 0.09 and 0.25. The water table is generally between 7 and 25 m depth, and the aquifer is generally unconfined. Boreholes are generally between 22 and 75 m deep.

8.4 Surface and Ground Water Hydrology

Only the border rivers are permanent. The Swakop and Kuiseb rivers rise on the plateau, descend the western escarpment, and die out in the Namib (except in rare flood years, when they reach the sea at Swakopmund and Walvis Bay, respectively). The Fish (Vis) River rises in the Central Plateau and (seasonally) flows south to the Orange. Various lesser rivers rise on the plateau and die out downstream in the Namib or Kalahari Desert. The Walvis Bay area is characterised by a complex and dynamic environment. The landscapes of the Walvis Bay biodiversity areas are a result of river, marine, wind, and man induced processes and feature some of the most interesting geological, soils, hydrological and biological features as well as different land uses. It is further characterised by a rare ecological interaction between a coastal wetland and the desert, under the influence of a very unusual climate dominated by the presence of cold sea currents.

8.5 Landscape characteristics

8.5.1 Biodiversity (Birds, Mammals, Fauna & Flora)

Walvis Bay is blessed with a rich biodiversity which thrives in the scenic Namib Desert dunes and associated gravel plains, the Walvis Bay Lagoon, the ephemeral Kuiseb River Delta and other ecosystems. Biodiversity forms the basis of our tourism sector. Therefore, its preservation is critical to the sustainable growth of the sector and the entire economy of Walvis Bay. The Walvis Bay area is characterised by a complex and dynamic environment. The landscapes of the Walvis Bay biodiversity

areas are a result of river, marine, wind, and man induced processes and feature some of the most interesting geological, soils, hydrological and biological features as well as different land uses. It is further characterised by a rare ecological interaction between a coastal wetland and the desert, under the influence of a very unusual climate dominated by the presence of cold sea currents.

Only 1% of Namibia's shoreline offers a sheltered, shallow area connected to the sea such as is found at Walvis Bay. Here a collection of species can usually be found that either do not occur or occur less plentifully on the open shore. Walvis Bay thus provides a rich habitat for marine fauna and flora and also accommodates the largest harbour along Namibia's coast. It is for these reasons that the city's biodiversity is divided into four main areas:

- (1) The Walvis Bay Ramsar Site;
- (2) The Kuiseb Delta;
- (3) The Dune Belt Area and
- (4) The Walvis Bay Coastline and Each of these main areas is further divided into functional zones.

The Dune fields is the area between the middle of the Swakop River in the north, the C14 road to Solitaire in the south, the tarred road in the west and railway line in the east between Walvis Bay and Swakopmund, excluding any approved urban development. Biodiversity description The Dune fields are characterized by a unique biodiversity and its conservation is important in view of Namibia's heritage and sustained tourism potential along the coast. The ability of this area to support a rich and unique biodiversity should not distract from the fundamental fragility of this dune ecosystem which is easily disturbed. Ecologically it is a low energy system because of the lack of water. Perennial plants grow slowly while annual ones can only grow in the years with adequate rain. As a result, a long period of time is required for the vegetation of the area to recover from disturbance.

One of the special attractions of the Namib Desert is the very unusual fauna and flora of the dune ecosystem with its wonderful adaptations to this sandy environment. The common vegetation in the dune belt especially along the road between Walvis Bay and Swakopmund is the cushion like plant, ***Trianthema hereroensis***. This succulent is able to absorb fogwater through its leaves as well as soil moisture by way of its roots. ***Trianthema hereroensis*** is endemic. Two endemic rodent species occur in the dune sand namely the Golden mole (***Eremitalpa granti namibensis***) and Namib dune gerbil (***Gerbilurus tytonis***). Damara Terns (***Sterna balaenarum***), (near-threatened, near-endemic seabird) also breed in the dune belt area. Various species of lizards and snakes occur in the dune fields. The lizards and snakes in this area have largely adapted to the desert environment and some have become famous for their behaviour of licking fog moisture off themselves, sand diving, foot-lifting, and sidewinding. The animals responsible for the above-mentioned adaptations are the following: the Palmatogecko

(*Palmatogecko rangei*), the Southern Slipface Lizard (*Meroles anchietae*), and the Southern Namib Sand Adder (*Bitis peringueyi*) respectively.

The Namaqua Chameleon (*Chamaeleo namaquensis*), the Namib Sand Snake (*Psammophis leightoni* subs. *namibensis*), the Wedgesnouted Skink (*Mabuya acutilabris*), the Slender Blind Legless Skink (*Typhlosaurus braini*), the Wedge Snouted Desert Lizard (*Meroles cuneirostris*), the Small-scaled Desert Lizard (*Meroles microphilodotus*) and the Small-legged Burrowing Skink (*Typhlosaurus brevipes*) found here, also occur on other coastal desert areas of the Namib Desert. Almost all the reptile species on the coast are endemic to Namibia

Gerbillurus tytonis

trianthema hereroensis



Sterna balaenarum

Desert Lizard (*Meroles microphilodotus*)

Figure 16: Fauna & Flora found in desert dunes (Walvis Bay townland)

8.5.2 Agriculture

There is no existing and/or any commercial and/or subsistence agriculture taking place on the portion 1 of farm 38 and/or on the surrounding areas. Most surrounding townland are earmarked for urban industrial development excluding agriculture as a result of the poor saline soils and low water table. The other reason for lack of agriculture development in the area is because most of the Walvis Bay Townland along the C14 Walvis Bay town to Walvis Bay International airport is slowly being transformed into a high business node area for Industrial business and other infrastructure economic activities

8.6 Socio Economic Profile

At local level Walvis Bay has an urban population size of 63 000 (Namibia Statistics Agency, 2023) and the current estimate is around 90 000 to 100 000. Attracted by perceived and real employment opportunities at the coast, several individuals have moved to the area and only 30% of Walvis Bay residents were born in the town. The demand of the fishing industry for workers is heavily dependent on the fishing quotas, which then adds to the fluctuations in population size. The construction of the public street will provide employment to people from the area. Skills development and training would also be a benefit to approximately 10-50 construction workers. The creation of the public street will have an influence on stimulating economic growth of the town and region.

8.6.1 Benefits and project Socio- economic activities

The creation, upgrading, and maintenance of public street will generate significant socio-economic benefits by enhancing accessibility, stimulating local economies and improving the overall quality of life. The Street will function as a critical public infrastructure that will connect people to jobs, services and markets, reducing transportation costs and fostering urban or rural development. The key socio-economic benefits of street creation, based on recent studies:

1. Economic Growth and Development

- **Increased Property Values:** Improvement of road infrastructure will lead to higher property values On Farm 38, which will increase tax revenues for Walvis Bay Local Authority, allowing further reinvestment.
- **Business Attraction and Job Creation:** The New Public Road will attract businesses, will stimulate trade and create jobs (both in construction and long-term, through increased commerce). The construction of the public street enhances employment opportunities to local residents in Walvis Bay.

- **Increased Productivity:** Improved infrastructure allows for efficient, faster movement of goods, which increases competitiveness.

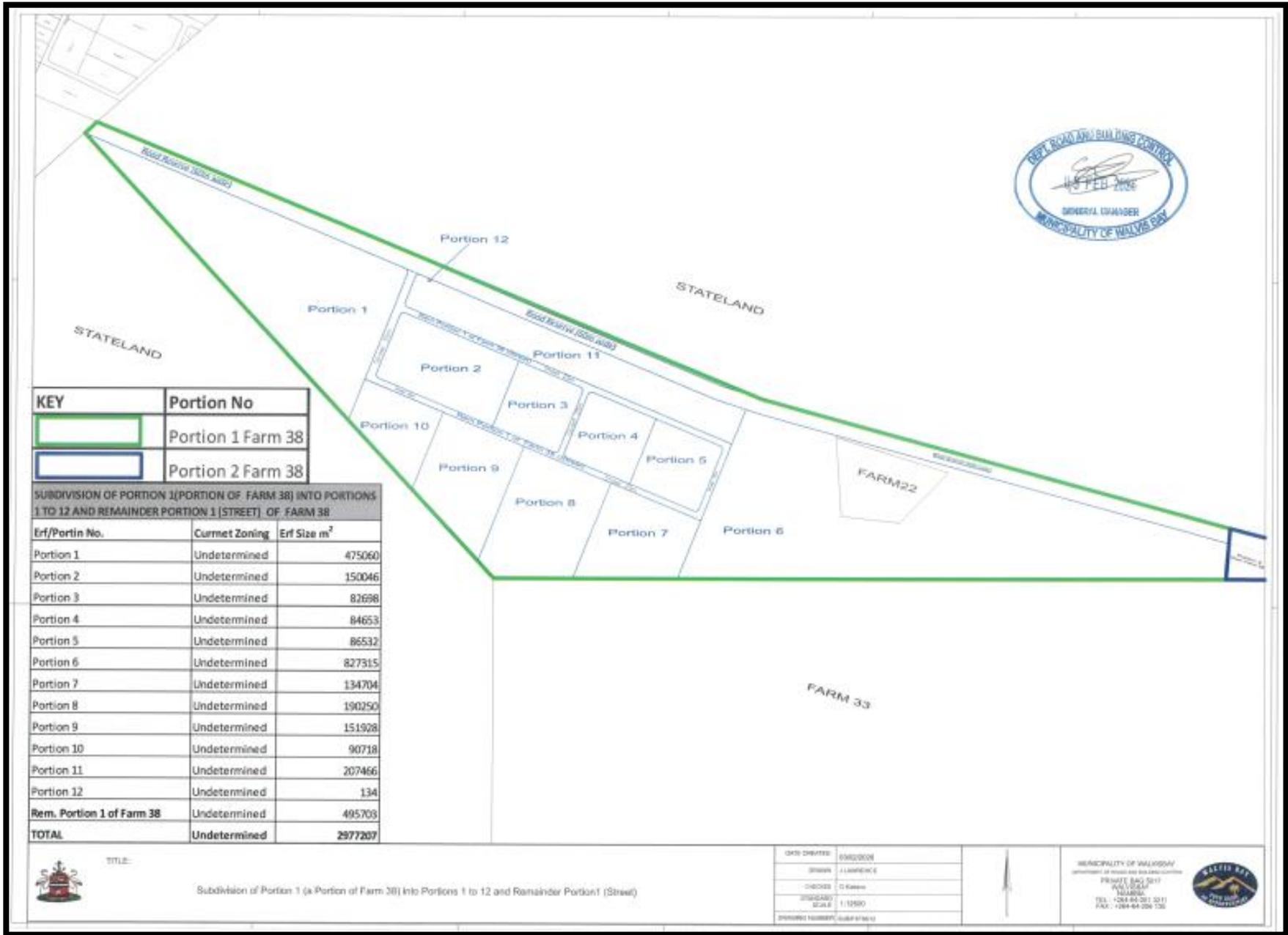
2. Social Well-being and Inclusion

- **Access to Services:** The Public Streets will provide residents will quicker access to essentially healthcare, education and social services, which is crucial for poverty reducing and improving living standards.
- **Enhanced Community Interaction:** The proposed public street will improve the public realm, will increase the sense of community and social interaction among residents.

9. DESCRIPTION OF THE PROJECT

9.1 Subdivision of portion

It is a legal statutory requirement guided by the Urban & Regional planning Act, act 5 of 2018 that for any subdivision of more than 10 portions, that such subdivision must be accompanied by public streets which serves to support, connect and provide access to different portions of land. The Walvis Bay Local Authority is therefore required by law to comply with the subdivision requirements by establishing a public street on the approved subdivision of Remainder of subdivided Portion 1 of Farm 38, The proposed Public Street to be created is in extent of (495,703m²). The subdivision plan and proposed zoning is shown below;



KEY	Portion No
	Portion 1 Farm 38
	Portion 2 Farm 38

SUBDIVISION OF PORTION 1 (PORTION OF FARM 38) INTO PORTIONS 1 TO 12 AND REMAINDER PORTION 1 (STREET) OF FARM 38

Erf/Portin No.	Current Zoning	Erf Size m ²
Portion 1	Undetermined	475060
Portion 2	Undetermined	150046
Portion 3	Undetermined	82698
Portion 4	Undetermined	84653
Portion 5	Undetermined	86532
Portion 6	Undetermined	827315
Portion 7	Undetermined	134704
Portion 8	Undetermined	190250
Portion 9	Undetermined	151928
Portion 10	Undetermined	90718
Portion 11	Undetermined	207466
Portion 12	Undetermined	134
Rem. Portion 1 of Farm 38	Undetermined	495703
TOTAL	Undetermined	2977207



TITLE:

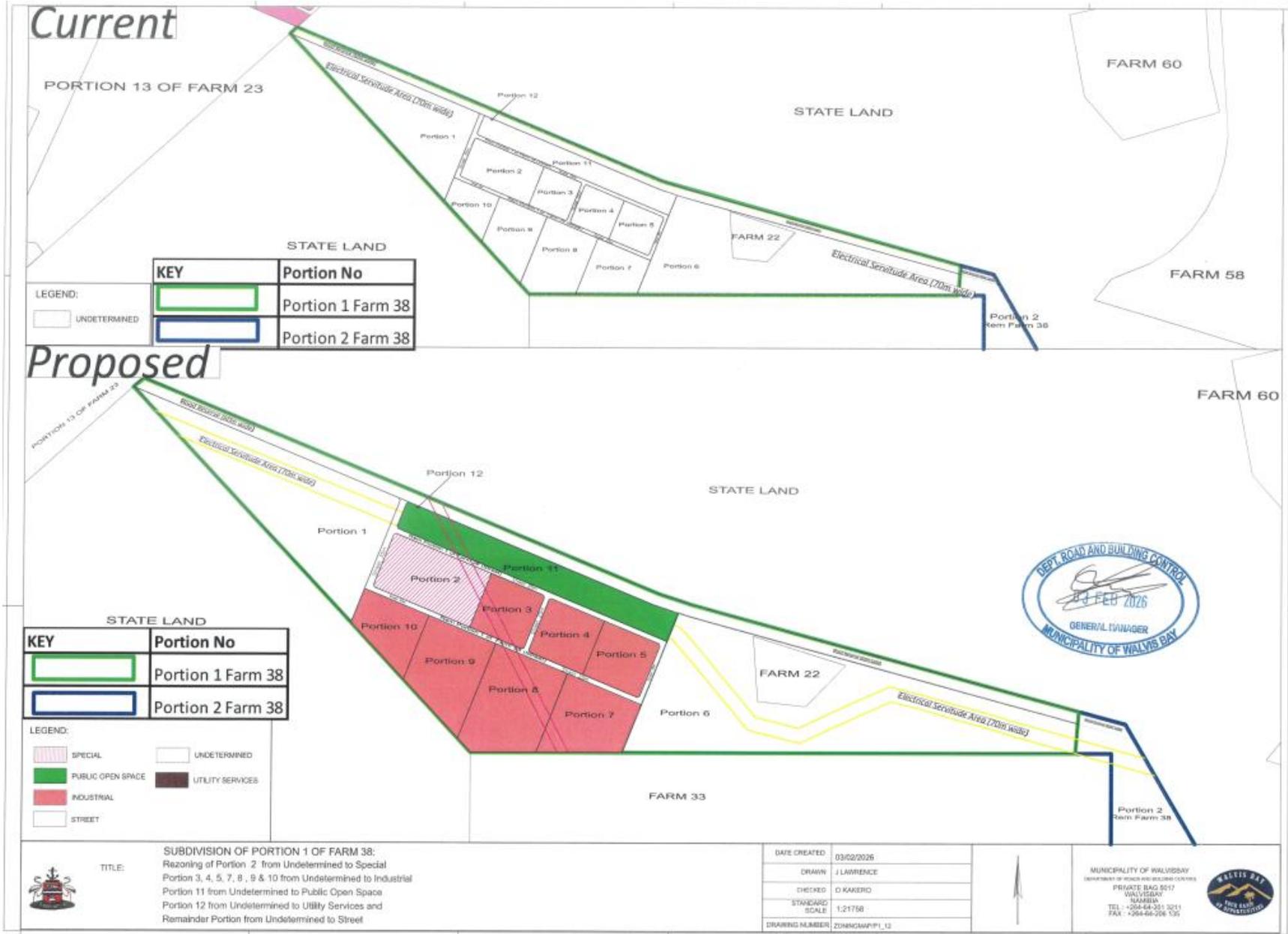
Subdivision of Portion 1 (a Portion of Farm 38) into Portions 1 to 12 and Remainder Portion 1 (Street)

DATE DRAFTED:	08/02/08
DRAWN:	A LAWRENCE
CHECKED:	D KLEIN
DESIGNED:	
SCALE:	1:1000
PREPARED FOR:	DAVID STRAUSS



MUNICIPALITY OF WALVISBAY
 DEPARTMENT OF ROAD AND BUILDING CONTROL
 PRIVATE BAG 5010
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 FAX: +264 64 206 120





Current

PORITION 13 OF FARM 23

STATE LAND

FARM 60

STATE LAND

FARM 22

FARM 58

KEY		Portion No
		Portion 1 Farm 38
		Portion 2 Farm 38

LEGEND:
 UNDETERMINED

Proposed

FARM 60

STATE LAND

STATE LAND

KEY		Portion No
		Portion 1 Farm 38
		Portion 2 Farm 38

LEGEND:
 SPECIAL
 PUBLIC OPEN SPACE
 INDUSTRIAL
 STREET
 UNDETERMINED
 UTILITY SERVICES



TITLE: SUBDIVISION OF PORTION 1 OF FARM 38:
 Rezoning of Portion 2 from Undetermined to Special
 Portion 3, 4, 5, 7, 8, 9 & 10 from Undetermined to Industrial
 Portion 11 from Undetermined to Public Open Space
 Portion 12 from Undetermined to Utility Services and
 Remainder Portion from Undetermined to Street

DATE CREATED	03/02/2026
DRAWN	J. LAWRENCE
CHECKED	O. KAKERO
STANDARD SCALE	1:21758
DRAWING NUMBER	ZHANCAMP1_12

MUNICIPALITY OF WALVISBAY
 (INCORPORATED BY ACT OF PARLIAMENT 1975)
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9.3 Construction and Operational Phases

The creation of public roads and streets is a complex, multi-year and often a multi-disciplinary project that involves five primary phases: **planning, design, right-of-way acquisition, construction, and maintenance**. These phases transition from initial conceptualization and feasibility studies to, ultimately, on-site construction, paving, and opening to traffic. Three phases of the stages for construction of public street such as *planning, design, right-of-way acquisition* were already undertaken by Walvis Bay Municipality during the project planning of the subdivision. Hence the emphasis of the scoping report will focus on the construction, and maintenance of the public street

1. Construction Phase (1–4 Years)

The physical creation of the public street shall be managed by the department of civil works under Walvis Bay Municipality.

- **Site Preparation (Clearing & Grubbing):** The construction activity will comprise of removal of vegetation, trees, rocks, and debris to clear the path.
- **Earthwork and Excavation:** The Heavy equipment will shape the terrain, cut high points and filling low spots to reach the desired elevation.
- **Subgrade Preparation:** Ground testing, stabilizing and compacting the soil to create a solid foundation.
- **Drainage System Installation:** drainage will be Installed for storm drains, culverts and curbs to guide water away from the road structure.
- **Base Layer Installation:** Placement and compacting of granular material layer (gravel or crushed stone) will be applied to provide structural integrity.

2. Finalization and Maintenance

- **Final Inspection & Testing:** Upon completion of the street creation, Walvis Municipal Engineers will verify whether the road meets all safety standards, including load testing and surface quality checks.
- **Handover:** The road will be officially opened to the public.
- **Maintenance & Operations:** Walvis Municipality will take over the maintenance of the streets to extend the lifespan of the road.

10. ASSOCIATED INFRASTRUCTURE

10.1 Water

Water supply will be connected from the adjoining Nam-Water pipeline (marked Blue) from the Kuseb dam/delta reservoir to the project site. The Walvis Bay Municipality shall be responsible to connect from the existing Nam-water pipeline to the proposed project area for user and utility. Figure 20 below shows the connection point marked as "Green-line" the water pipe is situated approximately 700 meters to 1 kilometre to the project site, The water is suitable for human consumption. Walvis bay municipality shall recreate a connection point from the reservoir pipeline to supply the project area



NB: Blue line (Nam-water pipe) & Greenline (Municipal pipeline from the reservoir)

Figure 20: Existing Nam-water water pipeline from the Kuiseb water reservoir

10.4 Solid Waste Disposal

All solid wastes to be generated during the construction and operational phase of public street creation will first be collected in the wheel bins, dustbin and skip container waste collectors (such as building rubbles, garden refuse and waste materials). Then such wastes will then be transported and disposed to the Walvis Bay designated dumping site. Walvis bay Municipality will take the full responsibility to ensure the management & facilitation of solid waste deposing is carryout it at per the approved policies and municipal bylaws..



Figure 24: Skip container for refuse rubbles 240 Litre & Wheel bins

11. STAKEHOLDER AND COMMUNITY CONSULTATIONS

Public participation forms an important component of the environmental Assessment process. It is defined by the Environmental Management Act (2007), as a 'process in which potential interested and affected parties' area given an opportunity to comment on, or raise issues relevant to specific matters. The objectives of the stakeholder consultation process are to disseminate information on the project and its expected impact, long-term as well as short-term, among primary and secondary stakeholders and to gather information on relevant issues so that the feedback received could be used to address these issues at early stages of project design. Another important objective was to determine the extent of the concerns amongst the community, to address these in the project implementation and to suggest appropriate mitigation measures. The feedback received has been used to address these issues at early stages of project design

Identification of Stakeholders

The stakeholders to be consulted for the Project will include local affected persons, local authorities, educational institutions, local community and other groups with an interest in the area around the Project. Consultations took place between 17 February to 09 March 2026.

Consultation with Stakeholders

Due to the extent and size of the proposed development, public participation notices were placed in around Walvis Bay town & on the Walvis Bay municipality notice board. Some adverts were placed at the project site and in the newspapers circulating nationwide. The advert was placed in the New Era tabloid dated 17th and 26 February 2026 respectively. A random list of Interested & affected parties & stakeholder was identified based on the relevance & impact of the stakeholders to the proposed development.

The identified keys stakeholders identified were invited through registered emails and stakeholders were also informed of the public meeting date, venue and time. However, no comments and/or objections were received from the stakeholders. Furthermore, the public consultation meeting that was scheduled to take place on the 05th March 2026 did not take place as there were no stakeholders or general public that attended the meeting.



Figure 26: Venue: Public Consultative meeting; Walvis Town Hall; Date: 05.03.26

A summary of Projected and/or anticipatory social-environmental issues and concerns that might be raised by the interested and affected parties during the meeting are listed below. The purpose of presenting these issues is simply to:

- Ensure transparency regarding the concerns that have been expressed;
- Ensure that all issues raised are properly addressed in the EIA, ESMP and mitigation measures proposed.

The anticipated social-environmental issues and concerns may include:

- Employment Creation
- Deforestation and ecosystem impacts
- Surface & Groundwater pollution
- Noise pollution
- Traffic increase or flow
- Economic growth

12. MAJOR IMPACTS IDENTIFIED

12.1 Employment creation

Some socio-economic advantages that are presumed to accompany the establishment of the public street is the creation of job opportunities that will be generated during the construction and maintenance of the streets. It is envisaged that the project will create approximately +-50 permanent jobs for the local community (for both 10 unskilled to be labourers). casual labourers will be hired on a contractual basis especially during the construction. It is a vital objective to support local skills to uplift the living standard and livelihood of Namibian citizens. This impact is considered positive for the development of Walvis Bay town.

12.2 Deforestation and ecosystem impacts

As explained in previous sections of the report, the proposed area for public street creation is a desert area, uncovered with no vegetation. The site is an open desert barren land. Given the unfertile soil condition and soil climate, the habitat of flora and fauna is known to have fragmented and degraded. As a result, there is no flora and fauna on site. The proposed area lies within an already disturbed urban area. Thus, no immediate threat to biodiversity in the area can be expected, however, uncontrolled pollution may and can cause damage to any species in the area surrounding the site.

12.3 Groundwater Surface Water and Soil contamination

Only the border rivers are permanent. The Swakop and Kuiseb rivers rise on the plateau, descend the western escarpment, and die out in the Namib (except in rare flood years, when they reach the sea at Swakopmund and Walvis Bay, respectively). The Fish (Vis) River rises in the Central Plateau and (seasonally) flows south to the Orange. Various lesser rivers rise on the plateau and die out downstream in the Namib or Kalahari Desert. Public water supply to Walvis Bay and the surrounding development is provided by Nam-Water from the Nam-Water Kuiseb Water Supply Scheme. Groundwater is not a source of potable water and as such public water supply should not be at risk because of activities at the facility.

12.4 Noise pollution

The creation of public street will have low to moderate noise pollution emanating from heavy-duty road construction equipment and loaders that will level the top soil and conduct compaction of soil. The slight noise pollution will not have any detrimental effect to any land use around the area as most development is under construction and closest existing land uses of General Businesses and industrial operational are

situated 3kilomtre from the project area. The road works will be regulated to operate within specified hours 08h00 to17h00s.

12.5 Traffic increase or flow

The main aim and purpose of creating of public street is to alleviate urban traffic flow and congestion. The creation of this proposed road on Remainder of portion 1 of farm 38 shall result in reduce traffic congestion and ensure human mobility. Alternative access temporal roads will be created during construction to allow undistracted movement. this impact therefore poses no risk as mitigation are in place.

12.6 Economic growth

It is projected that the establishment of public street will promote economic growth through the following; efficient movement of services, goods and people.

Table 3: Sustainability / Potential Appraisal

12.7 Sustainability / Potential Appraisal			
Impact on Ecological & Socio Economic	Level of Impact		Comments
	Positive	Negative	
Creation of Employment	High	None	10 unskilled local workers during the construction phase of the project for local residents
Deforestation and ecosystem impacts	N/A	None	there is no flora and fauna on site. The proposed site lies within an already disturbed urban area. Thus, no immediate threat to biodiversity in the area can be expected, however, uncontrolled pollution may and can cause damage to any species in the area surrounding the site.
Groundwater Surface Water and Soil contamination	High	None	The water will be extracted from the Nam water pipeline situated about 10 meters from the proposed site.
Noise pollution	N/A	None	In consultation with the traffic policies and applicable laws, noise pollution will be addressed

			applying by managing traffic systems and conditions like reducing speed limits, controlling traffic flow and restricting use of heavy vehicles on some roads
Traffic increase or flow	N/A	None	Provision for alternative accesses will be created to provide continuous movement of people and vehicle. this impact therefore poses no risk as mitigation are in place
Economic growth	High	None	Increase in the Country Gross domestic products and revenue collection by increasing flow, movement of goods and services

Key Consideration Area

- Contribute to local economy & National economy
- Employment Creation
- Local level economic empowerment

13. IMPACT ASSESSMENT AND MITIGATION

13.1 Environmental Impact Associated with the Project

This section discusses the potential environmental impacts of the proposed Project and identifies mitigation measures to minimize the impacts in the design, construction and operational phases. Environmental analysis covered potential direct, indirect, cumulative, and induced impacts but primarily focusing on the physical impacts within and around the truck port operational areas.

13.1.1 DESIGN / PRE-CONSTRUCTION PHASE

1. Detailed Design

The development of public street creation was adopted after the Walvis Bay Municipality has complied with the required statutes of planning in consultation with key development partners and stakeholders. The project was thus deemed feasible and the project was approved by Council engineering division and regulatory compliance. The approved detailed design of the proposed public street was adopted after considering the following

Surveying of land & Soil Analysis: this was done using drones and GPS for mapping and soil testing for strength and suitability.

Environmental Impact Assessment (EIA): The objective of undertaking this environmental study is for studying the impact on human socio life, wildlife, water and air quality.

Detailed Design: Comprehensive drawings and specifications for pavement, drainage, intersections, and lighting was/shall be approved by the engineering department of Walvis Bay Municipality for implementation.

Permitting: Approvals from local was obtained as per the attached council approval letter. Other approval from regional sector and/or federal authorities shall be obtained once the ECC is approved by the Ministry of Environment, Forestry and Tourism

13.1.2 CONSTRUCTION PHASE

The source of the construction impacts from the Creation of Public Street will include (i) excavation of top soils, Land Preparation (Clearing & Grubbing), Gound Earthwork and Excavation, Subgrade Preparation, Compacting the soil to create a solid foundation, installation of drainage System and installation of Base Layer. The waste disposal issues for the works should be manageable as there will be no major excavation necessary.

1. Occupational Health and Safety

Worker occupational health and safety is generally governed Employment and Labour Act. Construction works will generally result in accidents and injuries or even demise of the workers if no health and safety measures are followed. General Rules and Regulations on Occupational Health and Safety will be applied for occupation safety.

Mitigation measures to be implemented by contractors to ensure health and safety of workers are as follows:

- a) The contractor will conduct of training (assisted by PIU) for all workers on safety and environmental hygiene at no cost to the employees. The contractor will instruct workers in health and safety matters as required by law and by good engineering practice and provide first aid facilities.
- b) The contractors will instruct and induct all workers in health and safety matters (induction course) including construction camp rules and site agents/foremen will follow up with toolbox talks on a

weekly basis. Workforce training for all workers starting on site will include safety and environmental hygiene.

- c) Fencing on all areas of excavation greater than 1m deep and sides of temporary works shall be observed.
- d) Workers shall be provided with appropriate personnel safety equipment such as safety boots, helmets, gloves, protective clothes, dust mask, goggles, and ear protection at no cost to the workers.
- e) Reversing signals (visual and audible) shall be installed on all construction vehicles and plant.
- f) Contractor will at all-time keep the first aid kit at the construction sites.
- g) Contractor will be responsible for evacuation injured person to the nearest medical centre and bear all the medical expenses

2. Community Health and Safety

Public safety, particularly of pedestrians and children can be threatened by the excavation of the trenches for side drain construction. Since construction site is alongside the C14 highway, it will be guarded on all sides by security personnel. Construction activities will be timed and provision for safe passage of school children and elderlies will be made. excavated trenches/ditches and freshly cut steep side slopes will be clearly marked and fenced for the safety of passers-by and workers alike. Project or construction vehicles will be briefed on speed limit within sensitive areas such as schools, commercial and residential areas. In event of accidents, the contractor will be responsible for immediate evacuation of injured person to the nearest medical centre. The contractor shall bear medical and other expenses of the injured person.

6. Traffic Management

Construction activities are likely to cause hindrance in local traffic flow if not properly planned and executed. Contractor in consultation with project manager, the local authorities will come up with traffic management during construction. Work hours and traffic windows will be decided and implemented accordingly. Traffic flow during the rush hours (school and office opening and closing time) will be kept open.

7. Sanitation and Disease Vectors

Potential sanitation and impacts from disease need to be controlled by maintaining hygienic conditions during construction and operation of the public street. The Walvis Bay Municipality will ensure that

improvements are made to site sanitation and will implement the mitigation measure below for all operational activities and for the contractor ensures that:

- a) Measures to prevent malaria shall be implemented by installation of proper drainage to avoid formation of stagnant water, etc.
- b) Standing water will not be allowed to accumulate in the drainage facilities or along the warehouse sides to prevent proliferation of mosquitoes.
- c) Temporary and permanent drainage facilities will be designed to facilitate the rapid removal of surface water from all areas and prevent the accumulation of surface water ponds.
- d) Malaria controls will be implemented in line with social plans for the Project.

8. Noise and Dust

Earthworks and rock crushing activities will be the main sources of dust and noise. There will be significant dust and noise impacts on surrounding environment if no proper mitigation measures are followed. Therefore, to minimize the dust pollution impacts, contractor will implement following measures:

- a) Water sprinkling or spraying using tanker will be done twice a day to reduce dust generation. Water can be sourced from the nearby boreholes
- b) Construction work will be carried out only during day time (from 8.00am to 6 pm).
- c) If works have given rise to complaints over dust, the contractor shall investigate the cause, report it in the monthly progress reports and review and propose alternative mitigation measures before works recommence.
- d) Suitable construction noise barrier will be designed and constructed
- e) Fuel-efficient and well-maintained haulage trucks will be employed to minimize exhaust emissions. Regular maintenance will be carried out.
- f) Vehicles transporting soil, sand and other construction materials will be covered with tarpaulin sheets to reduce the release of dust and avoid impacts from dust. Speed limits of such vehicles within the works site and on unpaved edge areas of the project road will be established and agreed.

11. Water Resource and Water Quality

During construction, the contractor will ensure the proper disposal of spoil and other waste. Hazardous waste such as oil and lubricants will be properly stored and sent for recycling. Solid municipal waste will be disposed-off in a municipal landfill.

13. Impact Flora and Fauna

The project area is located in an open townland desert area, a distance of approximately 8 kilometres from the Walvis Bay CBD. Except for levelling of the sandy dunes, no removal of trees or vegetation will be required on the project area, there will be no other impact on flora and fauna. For removed trees, project will carry out compensatory plantation with locally available native tree species. Depending on the availability of space, compensatory ration would be either 1:1 (in small area) or 1:4 (if larger vacant area is available).

14. Archaeological and cultural artifacts

There are no known archaeological and cultural sites within Project area. And hence no impact is expected.

15. Compensatory Plantation

Project consultants in consultation with Walvis Bay Municipality, division of forestry and community will locate the government or even community barren for compensatory plantation. Compensatory plant using local or native tree species will be carried out to replace the trees felled during the construction. Ratio for compensation will be 1:1 if the area of plantation is small. However, the project can go up to 1:4 if the larger areas available.

13.1.3 OPERATIONAL PHASE

During the operational phase of the creation of public street, the Walvis Bay Municipality will take full responsibility for overseeing the operation of the street as the street will become a property of council. Walvis bay Municipality will be responsible for occupational health and safety of the workers and other occupants on the project. It will also take fully responsibility of handling and management of all hazardous materials shipped to the area. No hazardous waste will be discharge directly into the local drainage system. All hazardous waste will be collected and stored in a safe place until it is disposed of or recycled.

1. Noise and Dust

Noise levels during operation of the street will be limited to normal and low. The noise will mostly come from small vehicles driving in the roads and from other construction vehicles that will operate in the area.

Strict and rested road signs along the streets will be installed to mitigate the effect of noise in different neighbourhoods

Dust pollution will be a problem particularly during dry winter season, it will be reduced by having concrete/asphalt surfacing of parking area. Further, if required, the water will be sprayed at least twice daily to dampen the dust. With regard to toxic fumes emissions, the trucks entering areas such as truck port compound will be checked of emission standards as per the current practice of Road Safety standards. Routine checking and penalizing of defaulters is expected to bring level of toxic fume emission to acceptable limits.

E. Cumulative Environmental Impact

More than adverse cumulative impacts, the cumulative beneficial impacts would be higher for the entire region as well as for Walvis Bay urban area, if development of the public street is implemented. Therefore, creation of public street would have following cumulative beneficial impacts:

- **Air and Water Pollution:** Road construction and traffic are major sources of pollutants, including carbon monoxide, nitrogen oxides, and particulate matter. Contaminants from road surfaces—such as salt for ice, heavy metals, and hydrocarbons—are carried into waterways via stormwater runoff.
- **Urban Sprawl and Increased Emissions:** The expansion of road networks encourages low-density, sprawling development. This creates a long-term, self-reinforcing cycle where more, longer, and higher-speed vehicle trips are required, increasing overall energy consumption and greenhouse gas emissions.

17. CONCLUSIONS AND RECOMMENDATIONS

Based on established prevalent approved urban planning principles and best practice that guides the creation of public street design in Walvis Bay, it's important to portray creation of streets as primary public spaces that should/must be designed to enhance community life, not only to facilitate vehicle movement. That effective Public Street design prioritizes the safety and convenience of all users inclusive of pedestrians, cyclists, public transport, and vehicles. This is regardless of mobility levels. That street design must reflect the surrounding land use (residential, commercial, mixed-use) and local context, rather than applying uniform, high-speed standards to all areas. That well-designed public streets on portion 1 of farm 38 will increase adjacent property values, foster social interaction and improve environmental sustainability. That creation of public streets will also contribute significantly to urban ecology and will incorporate green infrastructure for stormwater management.

It is therefore recommended that planning and street design principles should prioritize pedestrians to be walkable and accessible thereby using narrower traffic lanes to encourage lower speeds (20–35 mph in mixed-use areas). To create street design and operate streets to accommodate all users safely. That the public streets created should form a network of interconnecting, permeable streets rather than cul-de-sacs to disperse traffic and improve accessibility and that the Street design is able to supports the local, social, and economic activities of the neighbourhood. Lastly is to ensure that Walvis Bay Municipality as custodian of the streets are able to collaborate across different departments (planning, engineering, public health) to align street design with broader city goals and to ensure that Walvis Bay Municipality budgets for long-term maintenance of landscaping, cleaning and lighting are secured during the planning phase

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