

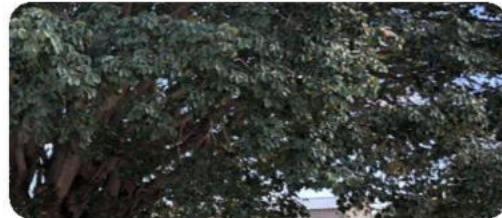
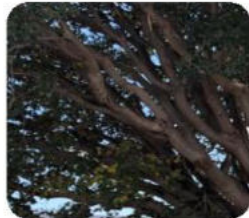
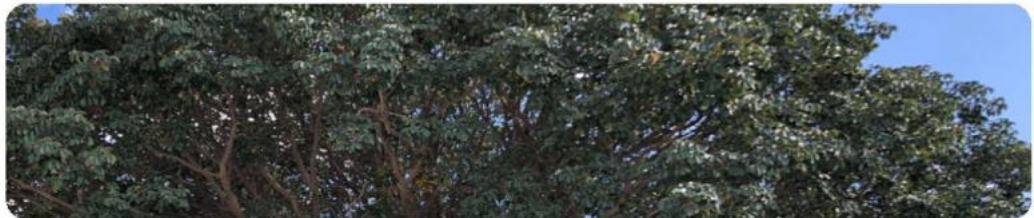


**URBAN
DYNAMICS**
town and regional planners

DATE MAY 2024
REPORT NUMBER: 231018002335

ENVIRONMENTAL SCOPING ASSESSMENT

FOR THE CONSTRUCTION OF PUBLIC ROADS THROUGH THE SUBDIVISION OF ERVEN 1134 AND 1135 EENHANA EXTENSION 2 WITHIN THE OHANGWENA REGION



PROPONENT:

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DOCUMENT INFORMATION

| | |
|-----------------------|--|
| Title | Scoping Assessment for the construction of public roads through the subdivision of Erven 1134 and 1135 Eenhana Extension 2 within the Ohangwena Region |
| Client | Eenhana Town Council |
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| Reviewer | Ernst Simon |
| Keywords | Public Roads, Urban Development, Management Plan |
| Status | Final |
| Report No. | 1 |
| Company | Urban Dynamics Africa (Pty) Ltd. |
| MEFT App Ref | 231018002335 |
| UDA Project No. | Eenhana 1237 |

DOCUMENT REVISION RECORD

DEVELOPMENT ROLE PLAYERS:

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ACRONYMS AND ABBREVIATIONS

| ACRONYM / ABBREVIATION | DESCRIPTION |
|------------------------|--|
| BID | BACKGROUND INFORMATION DOCUMENT |
| DEA | Department Of Environmental Affairs |
| EA | ENVIRONMENTAL ASSESSMENT |
| EC | ENVIRONMENTAL COMMISSIONER |
| ECC | Environmental Clearance Certificate |
| EHS | Environmental, Health And Safety |
| EIA | Environmental Impact Assessment |
| EMA | Environmental Management Act |
| EMP | ENVIRONMENTAL MANAGEMENT PLAN |
| ESF | Environmental And Social Framework |
| ESS | Environmental And Social Standards |
| FRMP | FLOOD RISK MANAGEMENT PLAN |
| HA | HECTARES |
| I&APS | INTERESTED AND AFFECTED PARTIES |
| m ² | SQUARE METERS |
| MEFT | Ministry Of Environment, Forestry, And Tourism |
| NBD | THE NAMIBIA BIODIVERSITY DATABASE |
| NHC | NAMIBIAN HEALTH CARE |
| NORED | NORTHERN REGIONAL ELECTRICITY DISTRIBUTOR |
| TRRP | TREE REMOVAL AND REPLACEMENT PLAN |
| UDA | Urban Dynamics Africa |
| URPB | URBAN AND REGIONAL PLANNING BOARD |
| WMP | WASTE MANAGEMENT PLAN |
| WRP | WASTE REMOVAL PLAN |

1 INTRODUCTION

Eenhana Town Council, appointed Urban Dynamics to obtain Environmental Clearance for the construction of a public roads, through the subdivision of Erven 1134 and 1135 Eenhana Extension 2.

The relevant documentation is included in support of our application to the Environmental Commissioner; please refer to the appendices attached hereto.

1.1 BACKGROUND

The project aims to address poverty-related challenges and advance development within Eenhana, capitalising on the town's strategic geographical advantage and its role as a regional centre. Through targeted initiatives and interventions, it aims to enhance the living conditions and opportunities for the local population, with the ultimate goal of making Eenhana a central contributor to the broader development objectives of the Ohangwena Region and the nation as a whole.

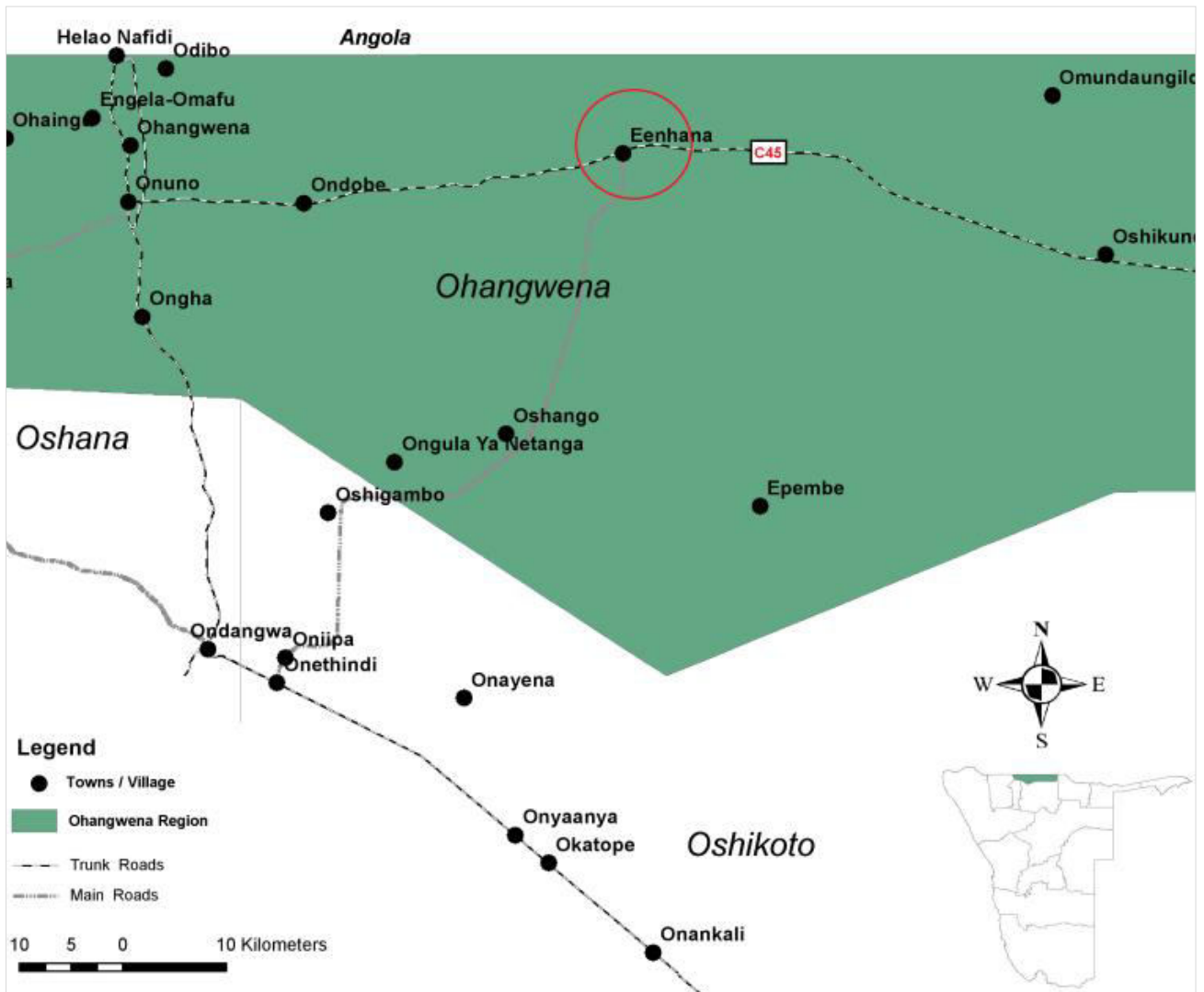
To achieve the program's objectives, the Eenhana Town Council (The Proponent) proposes subdividing Erven 1134 and 1135 Eenhana Extension 2 into 116 new erven and Remainers (street). This proposed development involves the formalisation of residential erven and the creation of two 10m streets within Extension 2, Eenhana.

1.2 PROJECT LOCATION

The project site is situated within the town of Eenhana, located in the Ohangwena Region of Namibia. Eenhana holds a crucial position as the regional capital and a vital growth centre within the Ohangwena Region. The specific location of the proposed township is illustrated in Figure 1. Its strategic location and multifaceted role make it a pivotal element in regional development.

Eenhana is positioned approximately 76km northeast of Ondangwa, another significant urban centre in the region. The town's strategic importance is further emphasised by its close proximity to key transportation routes, including the C45, which connects Onhuno and Okongo, and the M121, linking Eenhana to Oniipa. Eenhana's dual role as both a regional capital and a transportation hub underscores its significance in driving regional development and socio-economic progress.

Figure 1: The Locality of Eenhana within the Region



1.3 PURPOSE OF THE REPORT

The requirement for an Environmental Assessment (EA) arises from the provisions laid out in the 2012 Environmental Impact Assessment (EIA) Regulations of the Environmental Management Act (EMA) No. 7 of 2007. The proposed development falls under a category of listed activities that are subject to specific regulations and necessitate an Environmental Clearance Certificate (ECC) before any further actions can be taken. The activities within this scope are categorised under the following sections:

- **Activity 10.1 (b) Infrastructure:** This relate to the construction of public roads. (The proposed project includes the construction of roads).
- **Activity 10.2 (a) Infrastructure:** This category deals with the route determination of roads and the design of associated physical infrastructure, especially when the development concerns public roads. (The proposed project involves the route determination of roads).

To meet the requirements of the EMA and its 2012 EIA Regulations, the Eenhana Town Council has appointed Urban Dynamics Africa (Pty) Ltd. (UDA) as an independent Environmental Consultant to conduct an Environmental Scoping Assessment (ESA), which includes a public consultation component. The documents generated through this process will be included in an application for an ECC, as specified by the EMA and its EIA Regulations.

The outcomes of the ESA process have been compiled into this Environmental Report, which, alongside the draft Environmental Management Plan (EMP), will be submitted as part of the ECC application to the Environmental Commissioner at the Department of Environmental Affairs (DEA) within the Ministry of Environment, Forestry, and Tourism (MEFT).

Heidri Bindemann-Nel, a qualified Environmental Assessment Practitioner (EAP), led the execution of this ESIA process under the supervision of Tresia Amwaalwa, an experienced Town, and Regional Planner. This process was also supported by Steve Mwaningange Manager Urban Development & Technical Services. For more detail on the EAP involved, her CV is provided in **Annexure 2**.

2 PROJECT DESCRIPTION

The Eenhana Town Council plans to formally subdivide Erven 1334 and 1135 Extension 2, Eenhana, into residential erven, public open spaces, and streets. This council aims to formalise the existing residential areas and create 10-meter streets on the remainders of Erven 1334 and 1135.

2.1 OVERVIEW

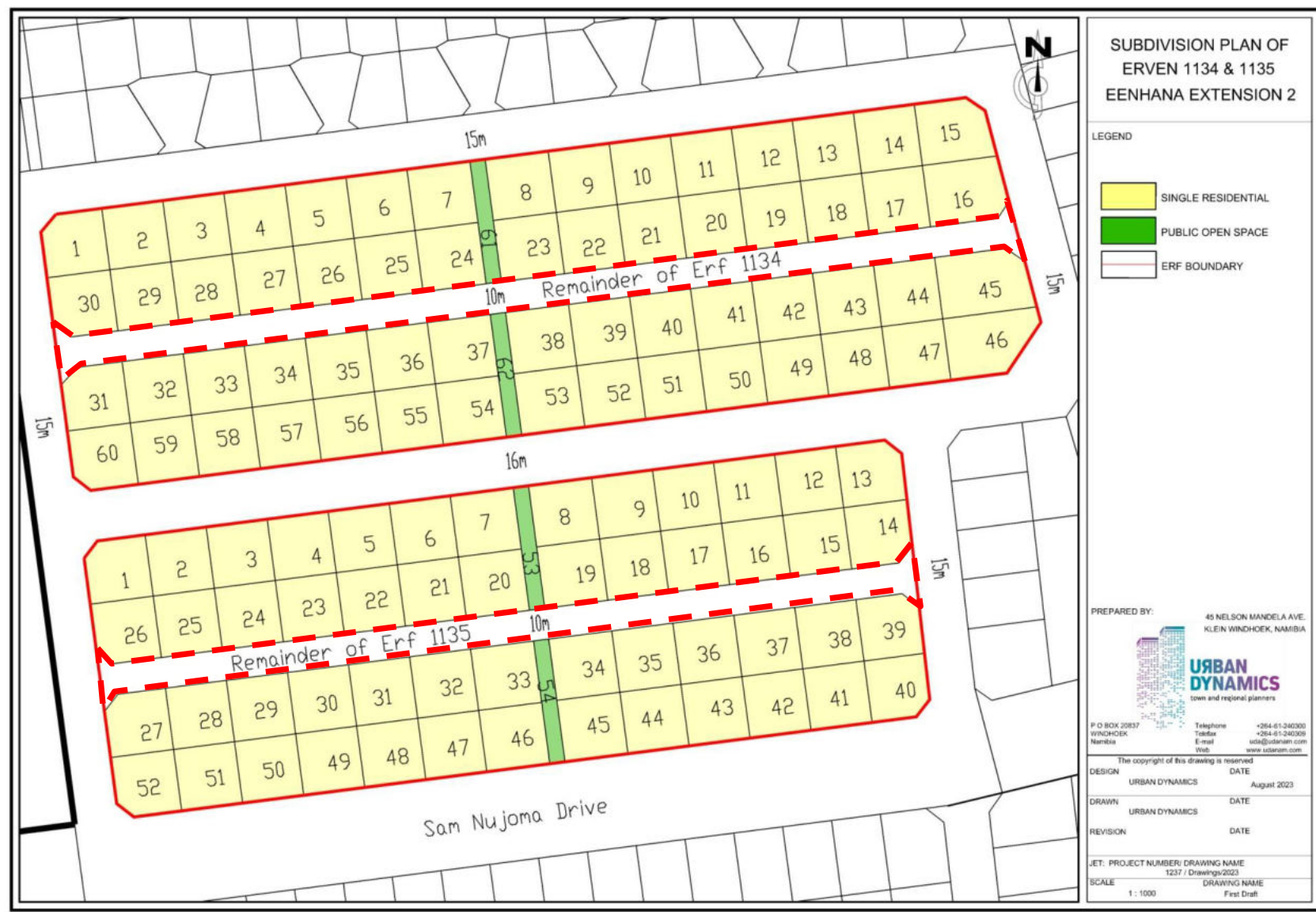
The site currently accommodates a number of residential structures, and the majority of the land uses proposed within the new subdivision layout is based on the current actual use of the land. Table 1 summarises the detailed land-use allocation for the new layout. The erven and streets shapes are illustrated in the subdivision layout in Figure 2.

| Subdivision of Erf 1134 into 62 New Erven and Remainder | | | | |
|---|-----------|---------------|------------------|------------|
| Zonings | No. Erven | Total Area | Average Erf Size | % |
| Residential | 60 | 24 566 | 409 | 87 |
| Public Open Space | 2 | 400 | 200 | 1 |
| Street | | 3 203 | | 11 |
| Total | 62 | 28 169 | | 100 |

| Subdivision of Erf 1135 into 54 new Even and Remainder | | | | |
|--|-----------|---------------|------------------|------------|
| Zonings | No. Erven | Total Area | Average Erf Size | % |
| Residential | 52 | 20 883 | 402 | 87 |
| Public Open Space | 2 | 400 | 200 | 2 |
| Street | | 2 723 | | 11 |
| Total | 54 | 24 006 | | 100 |

Table 1: Erf Sizes and Zonings

Figure 2: The Subdivision Layout



2.2 ASSESS TO FACILITIES

2.2.1 Residential Land Uses:

The proposed subdivisions integrate several occupied residential plots and informal streets from the existing informal layout; aiming to accommodate about 113 Single Residential erven to meet the demand for residential land in Eenhana.

2.3 ACCESS AND UTILITY SERVICES:

Road Access:

The erven will be accessible via roads measuring 10, 15, and 16-meters, all of which connect to Sam Nujoma Drive. The latter extends from the West (Onunho) to the East (Okongo).

Water Connection:

NamWater supplies bulk water to the town of Eenhana. The town's water-reticulated network ensures water distribution to formal residents and businesses, while informal areas have access to water through communal taps. To facilitate the water supply for the project site, three water connection points have been established, enabling integration with the water-reticulated network on the site.

Figure 3: On Site Utility Services



Electrical Supply:

The town of Eenhana receives its electricity supply through its reticulated network, which is interconnected with both the nearby Nored network and NamPower. NamPower supplies electricity to Nored, which, in turn, provides it to the town. This electrical infrastructure serves the town, by providing power for residential and commercial areas. The project site includes a substation.

Sewerage:

A sewerage reticulation network and pump station serve the formal areas of Eenhana, while informal settlement areas use septic tanks and pit latrines.

Communication:

The town accesses various services, including television, radio, newspaper, telephone, and cell phone networks.

3 PROJECT STANDARDS

In this section, we provide a comprehensive review of pertinent Namibian legislation, policies, and guidelines that directly apply to the proposed development. The main objective of this review is to disseminate essential information to the Eenhana Town Council, Interested and Affected Parties, and the decision-makers at the DEA. We focus on elucidating the precise requirements and expectations outlined within these regulatory instruments.

3.1 NAMIBIA ENVIRONMENTAL LEGISLATION

The Constitution of the Republic of Namibia (1990) establishes the foundational principles governing Namibia. Article 95 commits the state to endorse sustainable development by preserving ecosystems, essential ecological processes, and biological diversity in Namibia. It underscores the sustainable utilisation of natural resources for the collective benefit of all Namibians, both present and future.

Namibia's Environmental Impact Assessment Policy of 1995 plays a crucial role in fostering accountability and informed decision-making. It mandates the necessity of EIAs for specified programs and projects (activities). This policy is enforced through the Environmental Management Act (No. 7 of 2007) and the EIA Regulations.

The EMA, enacted in December 2007 and effective from January 2012, delineates various rights and obligations for citizens and the government. Key aspects of the EMA include:

- Defining the environment.
- Promoting the sustainable management of the environment and the responsible use of natural resources.
- Establishing a process for assessing and controlling activities that may significantly affect the environment.

Part 2 of the EMA outlines several principles of environmental management aligning with the Constitution's provisions for integrated environmental management. Decision-makers must consider these principles when determining whether to grant environmental clearance for listed activities.

The EIA Regulations, promulgated in January 2012, provide the framework for the control of listed activities (GN No. 29). These activities are prohibited until an ECC is issued by the office of the Environmental Commissioner in the MEFT. ECC applications, subject to specific conditions, are considered by the MEFT only after compliance with the EIA process detailed in the EIA Regulations 2012 (GN No. 30).

3.2 REGULATORY FRAMEWORK

| THEME | LEGISLATION | PROVISION | PROJECT IMPLICATIONS |
|----------------------|---|---|---|
| NATIONAL | The Constitution of the Republic of Namibia First Amendment Act. 34 of 1998 | Article 16 (1) guarantees the right to acquire, own, and dispose of property, and Article 95 (i) mandates the state to manage ecosystems sustainably. | The project supports freehold title ownership and commits to preserving ecological integrity. |
| ENVIRONMENTAL | Environmental Management Act 7 of 2007 | Section 27 mandates an environmental assessment for projects with significant impacts, and Section 2(b-c) requires public participation. - Details principles which are to guide all EIAs | Procedures for authorisation, including an Environmental Clearance certificate, will be followed. |
| | EIA Regulations GN 57/2007 (GG 3812) | Section 10(1), construction of (b) public roads and Section 10.2 route determination of roads and design of associate physical infrastructure (a) public road whereby the Minister of Environment, Forestry and Tourism or in a manner prescribed by the Minister. Section 21 outlines public consultation requirements for the environmental assessment process. Prescribes the procedures to be followed for authorisation of the project (i.e. Environmental clearance certificate). | |
| FORESTRY | Forestry Act 12 of 2001 | Section 22(1) states that tree species and any vegetation within 100m of a Watercourse may not be removed without a permit. Provision for the protection of various plant species. | Environmental Protection for Plant Species: Planning Phase: During the planning |

| | | | |
|---------------------|--|--|---|
| | <p>Forest Regulations GN 170/2015 (GG 5801)</p> | <p>Section 13.2 states that no protected species should be removed unless special permission is granted. The plant or species declared protected species are listed in Annexure A of the Regulations.</p> | <p>stage, it is important to safeguard plant species listed under Annexure A of the Regulations. This protection is achieved through planning in the layout.</p> <p>Construction Phase: Prior to commencing construction, a comprehensive Tree Management Plan must be developed for the site. This plan should identify and ensures the protection of these plant species.</p> <p>Exceptional Circumstances: In cases where it becomes impossible to preserve protected plant species during the planning and construction phase, permits must be sought from the Ministry of Environment, Forestry, and Tourism (Department of Forestry) to authorise their removal. This ensures compliance with regulations and responsible environmental management.</p> |
| <p>WATER</p> | <p>Water Management Act No. 11 of 2013 (GG 5740)</p> | <p>Section 102(e) excavations may not expose the roots of or destroy native trees in any watercourse.</p> <p>Section 102(f) the area where activities relating to the use of a wetland or a dam takes place must be left rehabilitated so that the view of the watercourse concerned is not blemished at any time.</p> | <p>During the project's construction phase, it is vital to have necessary measures in place to prevent the pollution of water resources, especially in the water catchment area at the site.</p> |

| | | | |
|------------------------------|--|---|---|
| HEALTH AND SAFETY | Labour Act 11 of 2007 | Chapter 2 details the fundamental rights and protections of employees. Chapter 3 deals with the basic conditions of employment. | The project's environmental management plan should underscore the importance of ensuring compliance with labour laws, maximizing employment opportunities, and making additional efforts to allocate jobs to local residents, with a particular emphasis on providing opportunities for women in the local community. |
| | Public and Environmental Health Act of 2015 (GG 5740) | This Act provides a framework for Namibia's structured, uniform public and environmental health system. It covers notification, prevention and control of diseases and sexually transmitted infections; maternal, ante-natal and neo-natal care; water and food supplies; infant nutrition; waste management; health nuisances; public and environmental health planning and reporting. | Development contractors should adhere to the legal requirements of the Act, specifically by preventing activities that could impact the health and safety of the public and employees. |
| ATMOSPHERIC POLLUTION | Atmospheric Pollution Prevention Ordinance No 45 of 1965 | Part II - control of noxious or offensive gases. Part III - atmospheric pollution by smoke. Part IV - dust control, and Part V - air pollution by fumes emitted by vehicles. | The development should consider the provisions outlined in the Atmospheric Pollution Prevention Ordinance No. 45 of 1965. The proponent is required to apply for an Air Emissions permit from the Ministry of Health and Social Services if deemed necessary. |
| ARCHAEOLOGY | National Heritage Act 27 of 2004 | Section 48(1) states that " A person may apply to the (Heritage) Council for a permit to carry out works or activities concerning a protected place protected object" | When archaeological material (e.g., graves) is discovered, the National Heritage Council should be informed immediately. |
| | Burial Place Ordinance 27 of 1966 | The Ordinance prohibits the desecration or disturbance of graves and regulates matters relating to the removal or disposal of dead bodies. | The Ordinance regulates the exhumation of graves. |

| | | | |
|------------------------------------|---|--|---|
| SOIL | Soil Conservation Act 76 of 1969 | The Act regulates combating and preventing soil erosion, the conservation, improvement, and manner of use of the soil and vegetation and the protection of the water sources. | Measures should be in place to ensure that soil erosion and pollution are avoided during the construction and operational phases. |
| LAND USE | The Urban and Regional Planning Act 7 of 2018 | The Act regulates the establishment of townships, amendment of layout, subdivisions and consolidation, and land rezoning. | The proposed township and layout should be approved by the Ministry of Urban and Rural Development in accordance with the Act. |
| | Eenhana Town Planning Scheme 20 (GG 7290) | The Eenhana Town Planning Scheme provides for various land use and activities allowed within the Eenhana Town Council's jurisdiction. | The development should adhere to the Eenhana Town Planning Scheme. |
| | Eenhana Town Council Strategic Plan 2021/2022-2025/2026 | The Eenhana Town Council Strategic Plan makes provision for the relocation of the current landfill within the townlands. | The Landfill Development Project aims to relocate the existing landfill, which is currently adjacent to the site, to a different location within the townlands. |
| SERVICES AND INFRASTRUCTURE | Road Ordinance 17 of 1979 | <p>Section 3(1) the width of proclaimed roads and roads receive boundaries.</p> <p>Section 27(1) the control of traffic during construction activities on the trunk and main roads.</p> <p>Section 37(1) infringement, obstructions on, and interference with proclaimed roads.</p> <p>Section 38 distances from proclaimed roads at which fences are erected.</p> | The proponent should ensure that the construction of public roads and infrastructure through township development and the operational phase do not affect major nearby roads. |

4 ESIA APPROACH AND METHODOLOGY

The following section discusses the methodology used by UDA in assessing the site in terms of its strengths, weaknesses, opportunities, and threats and to then formulate a planning approach to prepare a layout that harnesses the strengths, accommodate the weaknesses, utilise the opportunities and avoid the threats identified. These also include the natural and social environment within which the project is set.

4.1 SITE INFORMATION AND TOPOGRAPHY

UDA conducted a site visit in October 2023 to identify existing structures, infrastructure, and topography, land uses, and assess the settlement's current functionality. To ensure accuracy in topographical mapping and aerial survey images, a registered land surveyor appointed by the Eenhana Town Council surveyed the site.

4.2 NATURAL AND SOCIAL RECEIVING ENVIRONMENT

The assessment of the natural receiving environment involved orthophoto analysis, site visits, literature surveys, and leveraging extensive regional experience.

Data sources included:

- The Atlas of Namibia (Atlas of Namibia Team, 2022),
- Atlas of Namibia (Mendelsohn et al., 2002),
- Northern Region's Flood Risk Management Plan (Tamayo et al., 2011),
- Eenhana Town Council Strategic Plan 2021/2022 – 2025/2026 (Eenhana Town Council, 2022),
- 2011 Population and Housing Census - Ohangwena Region (NSA, 2012),
- 2001 Population and Housing Census - Ohangwena Region (RoN, 2002),
- 2018 Namibian Labour Force Survey (NSA, 2019),
- Health in Namibia (MoHSS, 2012),
- 2015/2016 Namibia Household Income and Expenditure Survey (NSA, 2015),
- Namibia 2011 Census Fertility Report (NSA, 2014), and
- World Bank Health Nutrition and Population Statistics Database (World Bank, 2019).

4.3 PUBLIC CONSULTATION

A public consultation campaign was conducted to ensure comprehensive stakeholder engagement. Notices were published in two newspapers over successive weeks, as outlined in **Appendix C.2**. A community meeting held on 21 October 2023, at the project site in Eenhana, involved representatives from Urban Dynamics and the Eenhana Town Council.

5 BASELINE ENVIRONMENTAL AND SOCIAL CONDITIONS

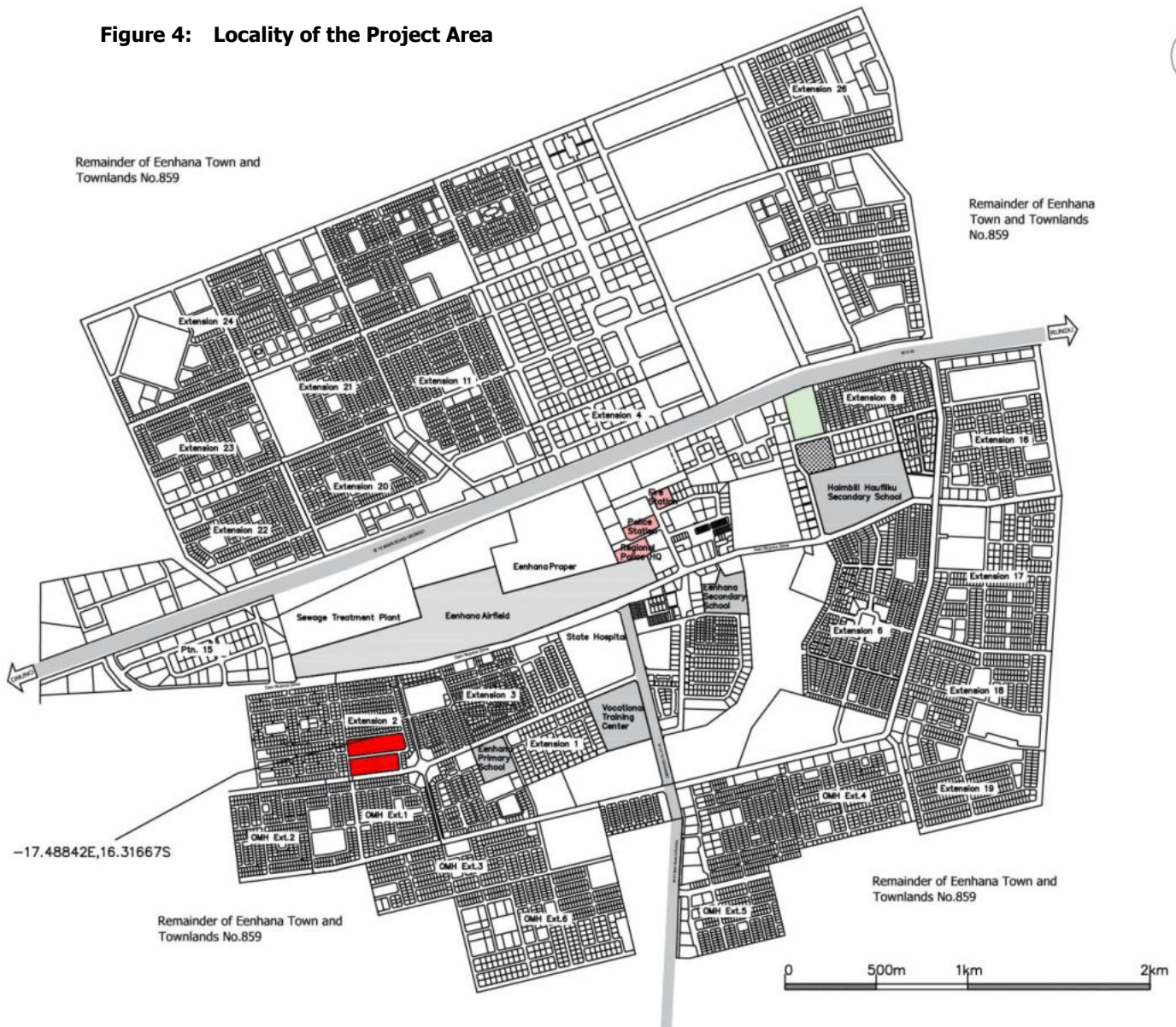
This section describes the proposed project site's biological, physical, social-cultural, and land-use environment in relation to the surrounding urban areas.

5.1 LAND USE

5.1.1 Locality:

The proposed development is located on Erven 1134 and 1135 Eenhana Extension 3. The project falls within the Ohangwena Region under Registration Division A. The erven is south of the C45 Road, at -17.48842S, 16.31667E. A locality plan is attached as **Appendix "B"**.

Figure 4: Locality of the Project Area



5.1.2 Ownership, Size, Shape, and Land Use Activities:

The registered owner of the erven is the Eenhana Town Council. The zoning scheme specifies the erven is zoned as Residential. The total extent of the project site covers approximately 26.2 ha. Table 2 provide information regarding the Erven sizes and zonings.

| ERVEN | AREA (HA) | ZONING |
|-----------------|-----------|-------------|
| Erf 1134 | 28 | Residential |
| Erf 1135 | 24 | Residential |

Table 2: Erven Sizes

The erven currently includes several temporary and permanent structures used for residential, existing infrastructure and track roads, as shown in the image below.

Figure 5: Current Land Use Activities



5.2 BIOPHYSICAL ENVIRONMENT

Within the Biological Environment segment, this report provides a detailed exploration of the project area's climatic conditions, flooding and topography, soil composition, and vegetation characteristics.

5.2.1 Climatic Conditions:

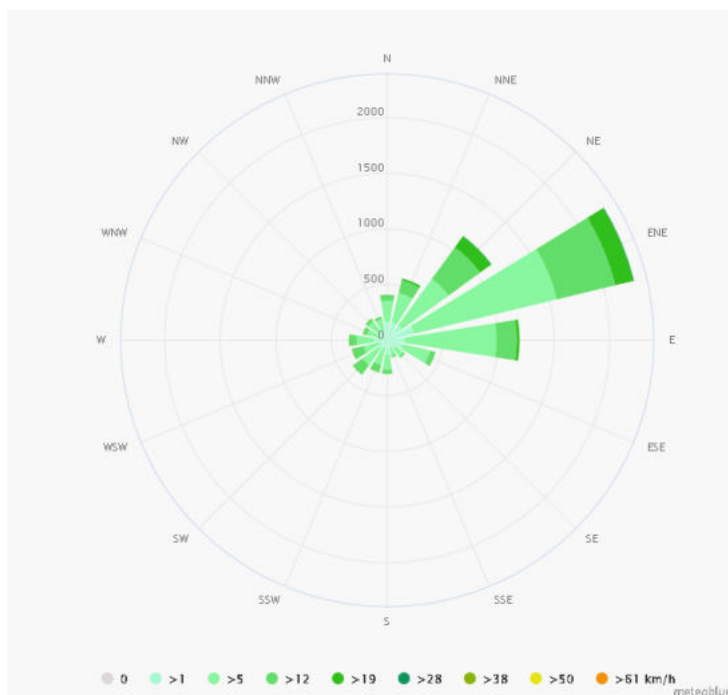
Namibia is characterised by a hot and arid climate, primarily attributed to its low atmospheric humidity levels (Mendelsohn, 2002). This climatic feature results in scanty cloud cover, infrequent rainfall, and exceptionally high evaporation rates. In Eenhana, the average monthly temperatures exhibit notable variation, ranging from 20°C in July to 36°C in October.

According to data from weatherspark.com for the year 2023, the length of daylight in Eenhana fluctuates across the seasons. The shortest day, occurring on June, offers 11 hours and 5 minutes of daylight, while the longest day falls on December, providing 13 hours and 11 minutes of daylight.

Eenhana receives its rainfall through clouds carried by north-easterly winds, but these clouds are often obstructed by the arid terrain. Monthly midday humidity levels vary from 50% in March to a mere 17% in September. Almost 99% of the annual precipitation occurs between October and April, with January recording the highest rainfall. Across the north-central regions, the average annual rainfall increases from west to east, with values ranging from less than 300 mm to no more than 550 mm (Mendelsohn, 2002).

Wind patterns in Eenhana are greatly influenced by local topography and other factors. The wind speed and direction exhibit considerable variability over time. However, when examining average hourly wind speeds, there is a noticeable but mild seasonal variation throughout the year.

Figure 6: Wind Speed and Direction



The windier period extends for 5.6 months, spanning from May to October, with average wind speeds exceeding 13.3km per hour. The peak of this windy season occurs in July, with an average hourly wind speed of 15.5km per hour.

Conversely, the calmer period lasts 6.4 months, ranging from October to May. February stands out as the calmest month in Eenhana, boasting an average hourly wind speed of 11.1km per hour. The predominant average hourly wind direction in Eenhana is from the east north east throughout the year (Meteoblue, 2023).

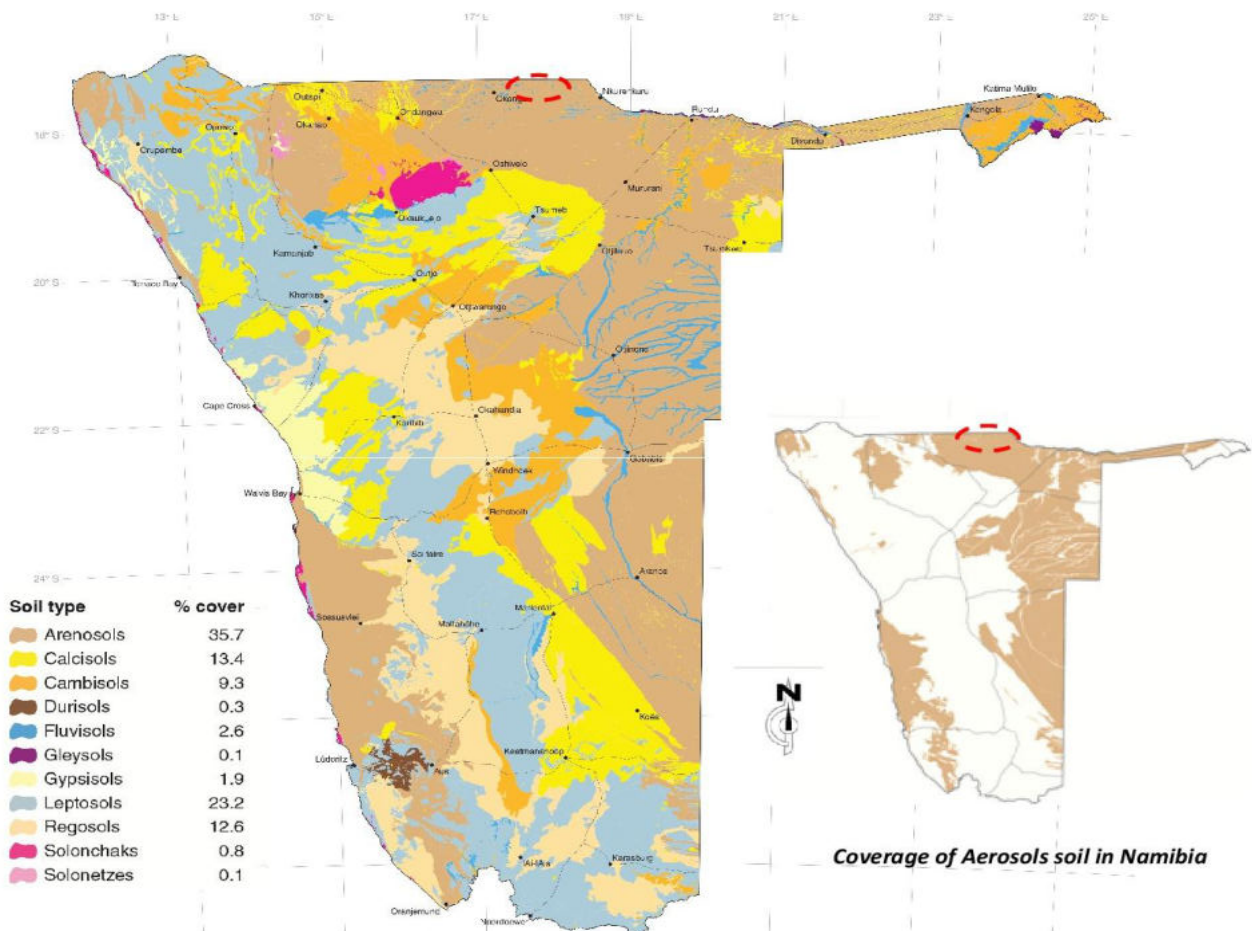
5.2.2 Flooding & Topography:

Eenhana, situated within the Cuvelai basin, encompasses low-lying areas that collect rainwater during the rainy season. Although lacking flowing oshanas (seasonal rivers), the Northern Regions Flood Risk Management Plan (Tamayo et al., 2011) designates the central part of the region, including Eenhana, as falling within the Moderate Flood Risk Zone. This classification is due to factors like a high groundwater level, sparse population density, and low-lying areas within Eenhana's town borders. The site is not close to a major riverbed/watercourse and is not prone to flooding.

5.2.3 Soil Conditions:

Figure 7 illustrates that Namibia boasts a diverse range of eleven distinct soil types, with Arenosols dominating approximately 35.7% of the nation's land area. The Namibian Atlas (2022) confirms that Arenosols, which are prevalent in this region, are primarily characterised by deep windblown sands with a sandy texture and a loose, porous structure. These soil types have a limited capacity to retain water and essential nutrients, which can contribute to dust-related challenges. Moreover, the low-lying areas of the site are comprised of clay soil, further hindering effective water drainage.

Figure 7: Namibia Soil Types and Coverage



Source Namibia Atlas, 2022 **Figure 8** shows the soil composition on the project site, emphasizing that the movement of vehicles and construction equipment within the area may give rise to dust-related issues. This has the potential to result in visual and health concerns due to the airborne particulate matter they generate, potentially affecting respiratory health and visibility.

Figure 8: Soil Condition



5.2.4 Vegetation Conditions:

Namibia's diverse vegetation landscape is characterised by five distinct biomes and divided into twenty-eight vegetation-type regions. The distribution of these biomes and vegetation types is primarily influenced by the region's climate and soil conditions, as documented in the Namibia Atlas of 2022.

Figure 9: Namibia Biomes and Vegetation Types

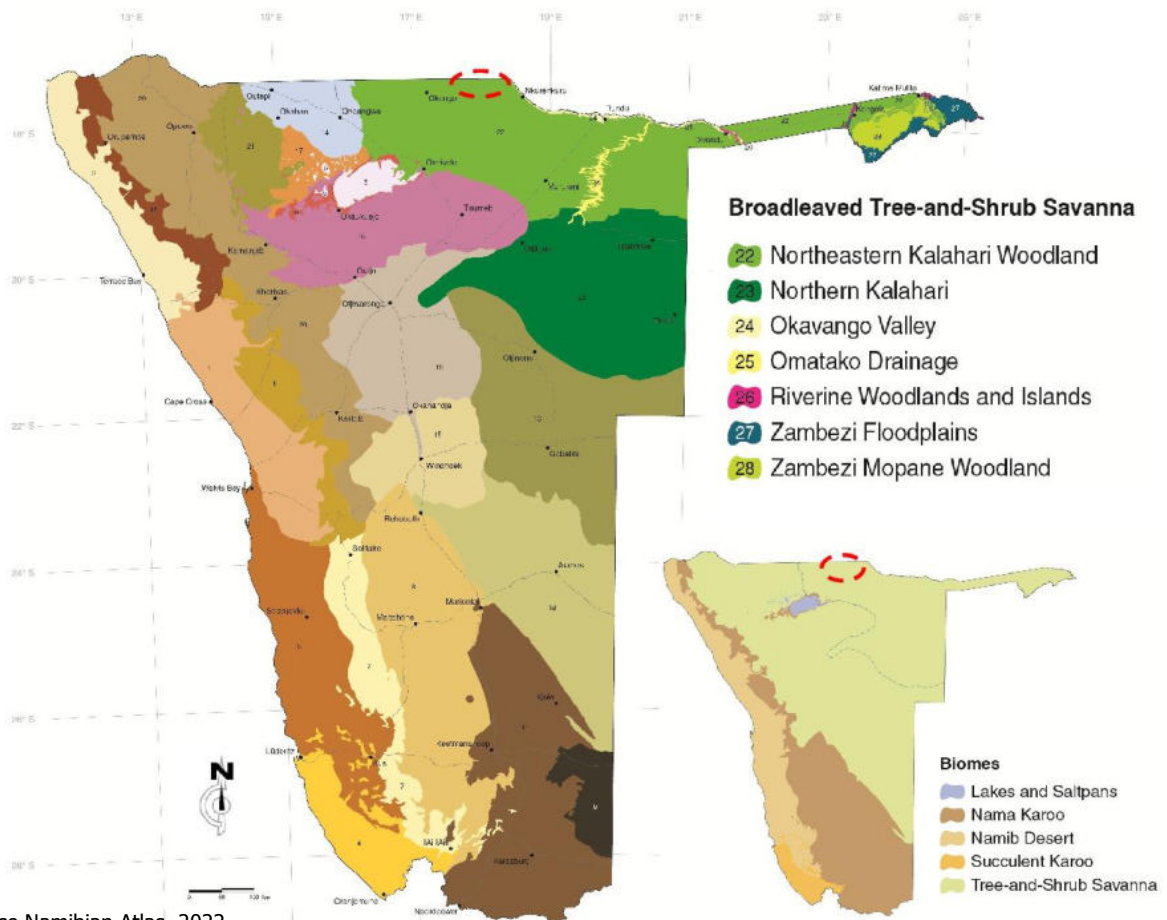


Figure 9 illustrates that the Ohangwena Region falls within the Broadleaved Trees and Shrub Savanna biome, specifically designated as vegetation type 22. This biome corresponds to the north-eastern Kalahari woodland vegetation, as documented in the 2022 Namibia Atlas.

The development site is primarily characterised by weathered large trees and shrubs, indicating environmental challenges. The prevalence of scathed vegetation is a consequence of factors such as overgrazing, land clearance for wood harvesting, and ongoing house construction, collectively contributing to a noticeable scarcity of greenery. Scattered trees and shrubs are prominent throughout the site, with a distinctive concentration of trees notable to the northwest.

Noteworthy species on the site include *Prosopis caldenia* (referred to as Persopis), *Pterocarpus angolensis* (known as Kiaat / Omuguya), *Hyphaene petersiana* (recognized as the Makalani Palm Tree), *Combretum collinum* (referred to as Omupupwahek), and *Pechuel-loeschea leubnitziae* (commonly known as bitterbos / Iizimba), among others. This comprehensive inventory underscores the diverse and unique flora present, despite the visible impact of environmental stressors on the site's vegetation.

To protect any listed trees, the developer should compile a Tree Management Plan to identify listed trees and establish strategies to protect or replace them. Throughout the phases of site planning and construction, it is of utmost importance to prioritize the preservation of large protected trees situated within erven, public open spaces, and road reserves. If circumstances necessitate the removal of these protected trees, obtaining the required permits for their removal is an imperative step to ensure compliance with regulations and responsible environmental practices.

5.2.5 Habitats on Site:

The project site has experienced habitat alteration, leading to ecological degradation. Consequently, the site can no longer be regarded as pristine, and its ecosystem no longer functions fully at its natural level. It is more appropriately categorised as an impacted ecosystem rather than a natural environment.

5.2.6 Status of Protected Area:

The site does not hold any protected status.

5.3 KEY SENSITIVITIES:

| FEATURE | DESCRIPTION | SENSITIVITY | POTENTIAL IMPACT |
|-------------------------|--|---|---|
| Protected Trees: | Existence of protected tree species on the site. | Protected trees located in the roads, public open space and land zoned residential. | Removal of Protected trees, Damaging to vegetation, Violation of environmental regulations. |
| Soil: | The soil type in the project area possesses a loose structure and is vulnerable to wind erosion. | Construction activities. | Increase in dust. |
| | | Sandy porous soil structure. | Contamination of surface and ground water. |
| Traffic: | Construction activity increase will result in higher traffic volume. | Lack of formal traffic assessment. | Traffic congestion is expected during the construction phase, necessitating proper planning and management. |
| Noise: | Increased construction activity will lead to elevated noise levels. | Proximity of residences and businesses to construction sites. | Potential disruption due to increased noise. |

Table 3: Biophysical Environmental Key Sensitivities

5.4 SOCIAL CULTURAL ENVIRONMENT

This section serves as an overview of the socio-economic conditions in the area earmarked for the proposed project. It delves into population characteristics and trends, educational profiles, health issues, and income patterns at the region and the constituency levels. Additionally, where available, it explores the social environment within the town of Eenhana. The objective is to establish a context for assessing any potential impacts that may be identified.

5.4.1 Cultural Resources:

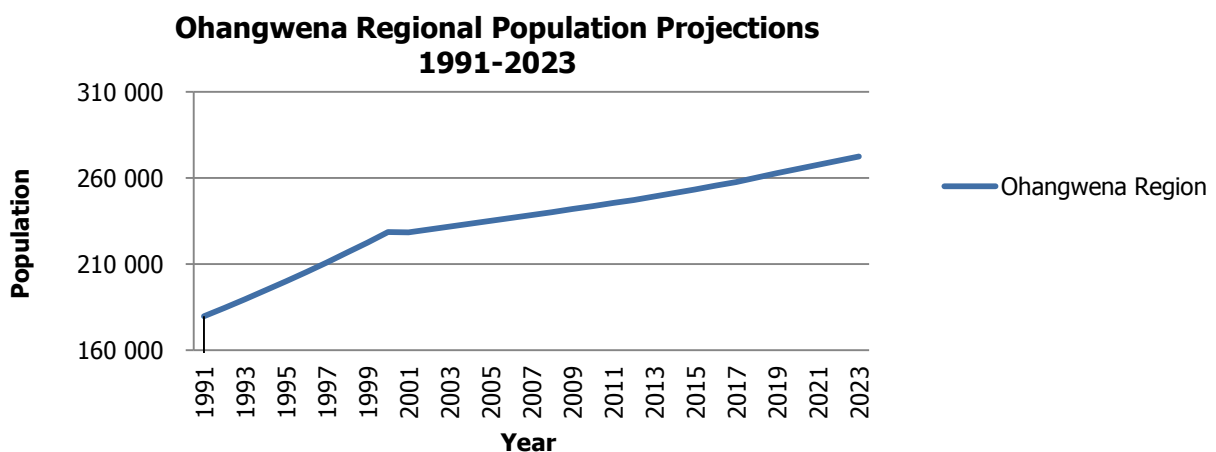
The site does not include any graves or other artefacts or items of historical significance.

5.4.2 Demographic Profile:

According to Census data from 2001 and 2011, the total population of the Ohangwena Region increased from 228,384 in 2001 to 245,446 in 2011 (NSA, 2012). The 2016 Namibia Inter-Censal Demographic Survey estimated the population to be 255,809, by 2018 the Labour Force Survey found the region’s population to be about 260,190. The average annual growth rate for the region between 2001 and 2011 was 0.7%, increasing to 0.8% per annum from 2016 to 2018. Figure 10:

Ohangwena Region Population Projection between 1991 to 2023. Figure 10 shows a population projection spanning from 1991 to 2023 for the region. This demographic shift has established the Ohangwena Region as the second most populous region in Namibia, hosting 12% of the total population (NSA, 2012).

Figure 10: Ohangwena Region Population Projection between 1991 to 2023

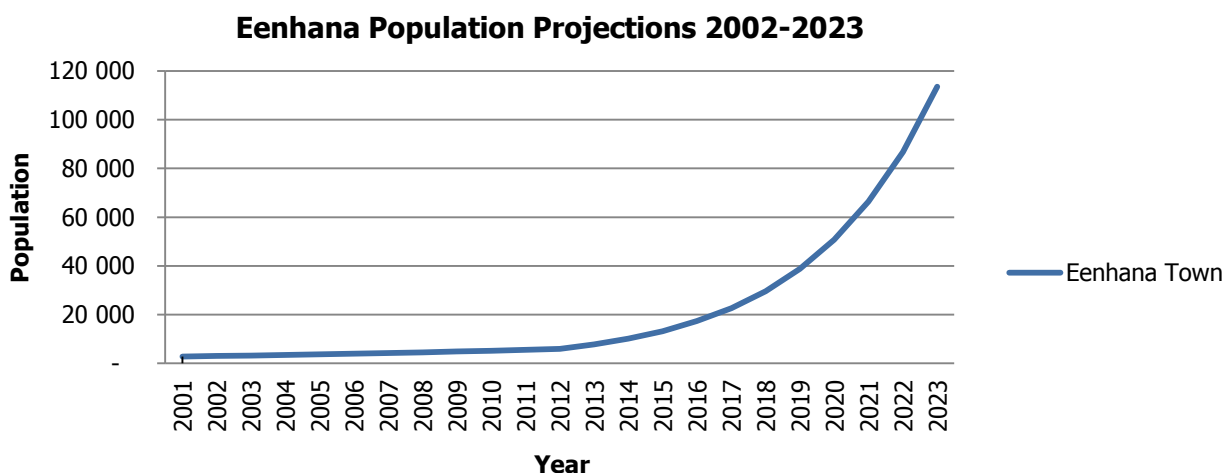


(NSA, 2012)

Urbanisation has been a noteworthy trend over the past two decades. In 2001, only 1% of the Ohangwena Region’s population resided in urban areas, by 2011, this figure had risen to 10% (RoN, 2002) and (NSA, 2012). According to the Eenhana’s Investment Profile 2021 to 2025 (2021), the town of Eenhana’s population was 2,814 in 2001, and by 2011, it had grown to 5,528. A more

substantial increase occurred as Eenhana's population surged to 10,120, marking a 30% rise by 2014 (ETC, 2021). The population surge is indicated in Figure 11.

Figure 11: Eenhana Town’s Population Projection between 2001 and 2023



(NSA, 2012)

The age and sex distribution of the region, as depicted in Table 4, shows that the population share of the under-15 year age group decreased slightly from 39% in 2001 to 37% in 2011 (NSA, 2012). The Region's working age group (15 to 64 years) also showed a decrease from 64% in 2001 to 47% in 2016. The sex ratio over the same period decreased from 96 males per 100 females to 62 males per 100 females. This is much higher than the national sex ratio of 94 males per 100 females. The male to female ratio in the Eenhana Constituency is similar than the regional figure, with 83 males per 100 females (NSA, 2012).

| Indicator | Namibia | | | Ohangwena Region | | | Eenhana Constituency | |
|------------------------------|---------|------|------|------------------|------|------|----------------------|------|
| | 2001 | 2011 | 2016 | 2001 | 2011 | 2016 | 2001 | 2011 |
| Under 5 years (%) | 13 | 14 | 14 | 11 | 14 | 15 | 15 | 14 |
| 5 – 14 years (%) | 26 | 23 | 23 | 18 | 29 | 29 | 31 | 28 |
| 15 – 64 years | 52 | 57 | 57 | 64 | 49 | 47 | 44 | 50 |
| 60+ years (%) | 8 | 6 | 6 | 6 | 8 | 9 | 8 | 8 |
| Males / 100 females | 94 | 94 | 95 | 112 | 84 | 86 | 84 | 83 |
| Mean Household size | 5.1 | 4.4 | 3.9 | 3.8 | 3.3 | 3.8 | 6.1 | 5.2 |
| Female Headed households (%) | 55 | 56 | 54 | 96 | 57 | 62 | 56 | 56 |

(NSA, 2012)

Table 4: The National, Regional, and the Eenhana Constituency Population Age Distribution, 2011

The household sizes for the Eenhana Constituency are higher than the region the national regional (NSA, 2012). The female-headed households for the National and Eenhana Constituency are higher than the region (NSA, 2012).

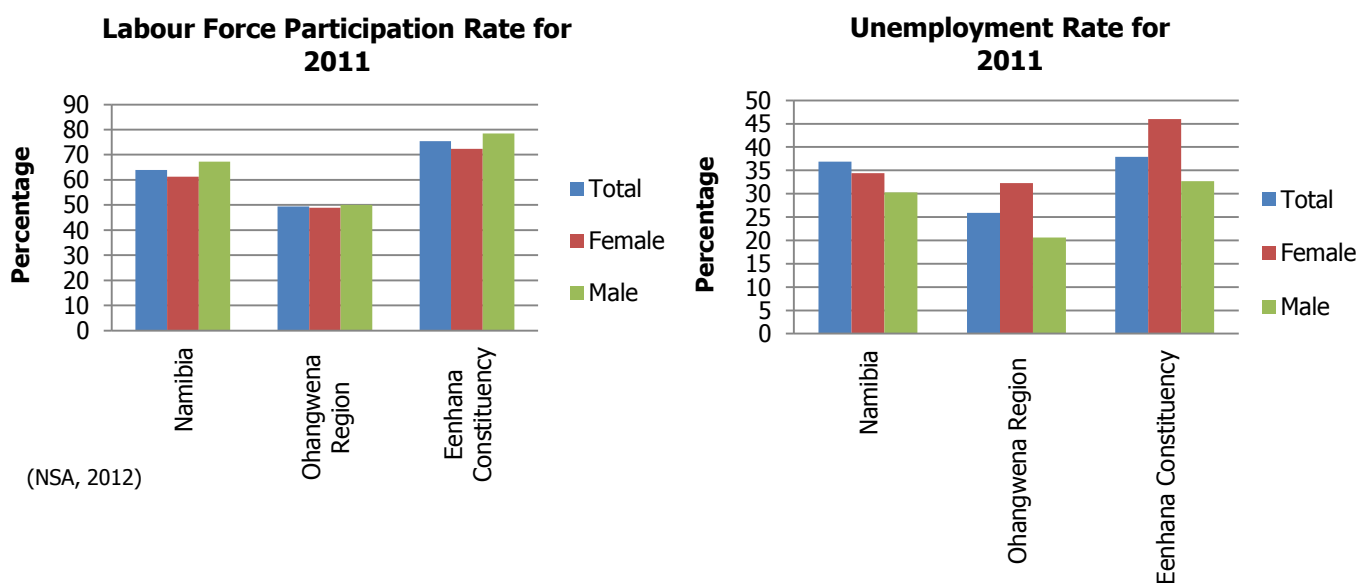
5.4.3 Livelihood Profile:

Examining the livelihood profile, the Ohangwena Region, in 2010, had the ninth-highest mean annual household consumption in the country at N\$44,854, notably lower than the national average of N\$68,878. However, by 2016, the mean annual household consumption rose to N\$94,482, still below the national average of N\$119,065 (NSA, 2016), ranking seventh.

According to the 2018 Namibian Labour Force Survey, the regional unemployment rate was 33.6% of the labour force, reflecting a slight decline of 0.4% since 2001 (NSA 2019). Eenhana faced a substantial unemployment rate of 42% at the constituency level in 2011 (NSA, 2012).

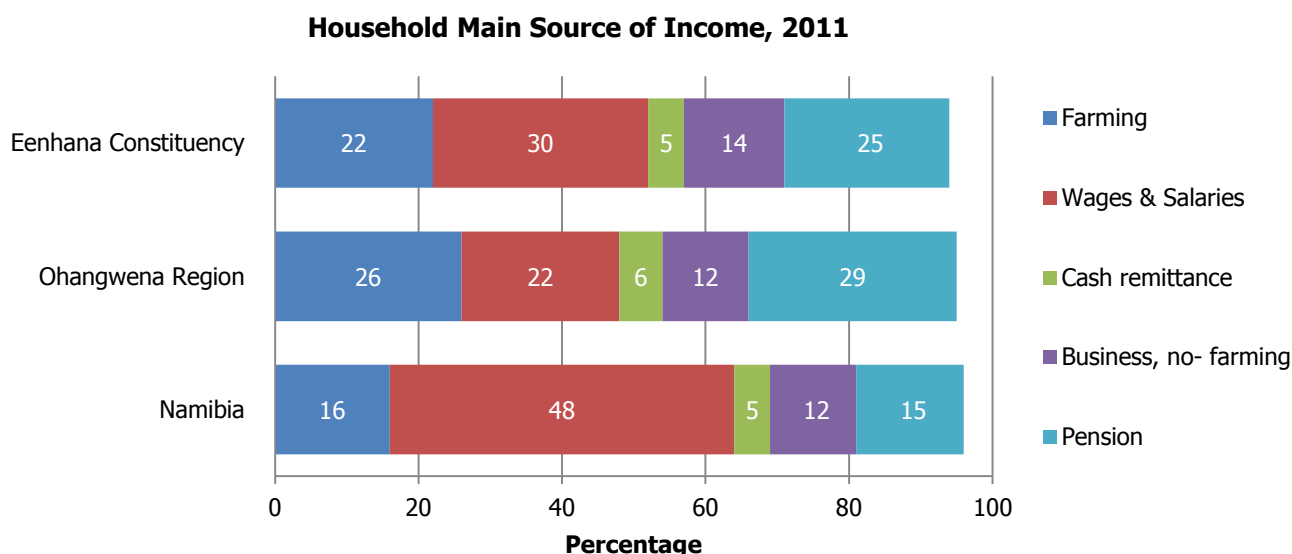
The labour force participation rate for 2011 for the Ohangwena Region was approximately 49.4%, with a slightly higher rate for males (50%) than for females (48.9%). This trend persisted in both urban and rural areas, where the labour force participation rate in urban areas (73.3%) exceeded that in rural areas (46.1%) (NSA, 2012). Notably, unemployment rates were higher among females than males at national, regional, and constituency levels. In the region, 32.3% of females and 20.6% of males were unemployed. In the Eenhana Constituency, 46% of females were unemployed, compared to 32.7%.

Figure 12: Labour Force Participation Rate and Unemployment Rate For 2011



Turning to Figure 13, a significant trend emerges in the Ohangwena Region, where 29% of households primarily depend on pensions, surpassing the national average of 15%. In the specific Eenhana Constituency, 30% of households derive their main income from wages and salaries. Despite the Ohangwena Region's predominant focus on small-scale, sustainable farming, only 22% of households in the area rely on agriculture as their primary income source. This underlines the importance of diverse economic activities beyond agriculture for sustaining livelihoods in the region. Figure 13 further illustrates this, depicting the percentage of households categorized by their primary sources of income (NSA, 2012).

Figure 13: Household Main Source of Income, 2011



(NSA, 2012)

In 2011, housing conditions in the Ohangwena Region were notably below the national average, with only 7.6% of households residing in detached or semi-detached houses compared to the national rate of 37.8%. Improved housing (shacks) was lower in the region at 5.1%, in contrast to the national average of 16%. Recognizing the pressing need for improvement, especially in urban areas, it becomes evident that new housing developments are essential.

| Area | % in detached or semi detached houses | % in improvised shelters | % ownership without mortgage |
|------------------|---------------------------------------|--------------------------|------------------------------|
| National | 37.8 | 16 | 56.1 |
| Ohangwena Region | 7.6 | 5.1 | 85 |

(NSA, 2012)

Table 5: Housing Conditions

Table 5: Housing Conditions, provides a detailed overview of the housing situation in the region, indicating the necessity for increased housing options and improved conditions. Specifically, only 7.6% of households in the Ohangwena Region reside in detached or semi-detached houses, highlighting the need for more affordable and suitable housing options. Additionally, the high ownership percentage

without a mortgage 85% suggests an opportunity for targeted housing initiatives that consider financial accessibility (NSA, 2012).

The region ranked as the sixth-largest contributor to the national GDP in 2016, representing 4.77% of the total GDP (Urban Econ 2019). The region's economy has historically relied on natural resources, with a growing emphasis on tourism playing an increasingly significant role.

Addressing the region's needs, there is a clear imperative to enhance housing options, particularly affordable ones, and foster job creation, with a specific focus on empowering women to enter the workforce. Initiatives aimed at bridging gender disparities in employment and providing accessible housing can contribute significantly to the overall development and well-being of the Ohangwena Region and, in particular, the Eenhana Constituency.

5.4.4 Educational Profile:

In 2019, the region had a total of 20 secondary schools, 144 combined schools, and 101 primary schools (EMIS, 2019).

Regarding literacy rates in the Eenhana Constituency in 2011, for individuals aged 15 and older, the literacy rate was 85%, which is lower than the regional average of 97%. Additionally, in the Eenhana Constituency, 30% of the population had never attended school, whereas the regional figure stood at 17% (NSA, 2012) (NSA, 2017).

5.4.5 Health Profile:

In 2023, the Ohangwena Region boasted a health infrastructure comprising 3 hospitals, 2 health centres, 31 primary health care clinics, and 144 outreach service points, as the Ministry of Health and Social Services reported in 2023.

Table 5 shows that a substantial percentage of the Ohangwena population, 70%, resides within 10 km of a health facility. While this is commendable, it falls slightly below the national average of 77%. The region's health system demonstrates a capacity of two (2) beds for every 1000 people, in contrast to the national average of three (3) beds per 1000 people (World Bank, 2019).

| Indicator | Ohangwena Region | Namibia |
|--|------------------|---------|
| % People within 10 km of health facility | 70 | 77 |
| Public hospital beds per 1000 people | 2 | 3.2 |
| Under 5 mortality per 1000 | 67 | 69 |
| % Households with access to safe water | 86 | 80 |
| % Households with no toilet facility | 72 | 46 |

(MoHSS, 2012) (NSA 2014) (NSA, 2016) (World Bank, 2019)

Table 6: Health Indicators

Health outcomes in the Ohangwena Region are encouraging, with the mortality rate for under 5-year-olds standing at 67 deaths per 1000 people, notably lower than the national average of 69 deaths per 1000 people (NSA, 2016). Additionally, life expectancy for males in the region saw a significant improvement from 43.2 years in 2001 to 46.1 years in 2011, according to the Namibia 2011 Census Mortality Report 2014. Similarly, for females in the region, life expectancy increased from 44.8 years in 2001 to 57.4 years in 2011.

These positive health trends align with national averages in Namibia, as illustrated in Table 7, indicating an increase in national life expectancy for males from 47.6 years in 2001 to 50.2 years in 2011. Furthermore, national life expectancy for females also exhibited a positive trajectory, rising from 50.2 years in 2001 to 60.5 years in 2011 (NSA, 2014).

| Area | 2001 | | 2011 | |
|------------------|------|--------|------|--------|
| | Male | Female | Male | Female |
| National | 47.6 | 50.2 | 53.3 | 60.5 |
| Ohangwena Region | 43.2 | 44.8 | 46.1 | 57.4 |

(NSA 2014)

Table 7: Live Expectancy (In Years) By Area, Sex and Census Years 2001 And 2011

The observed patterns suggest an overall improvement in male life expectancy in both the Ohangwena Region and nationally. In contrast, female life expectancy demonstrated positive gains at both regional and national levels during that period. Understanding regional variations and national trends are crucial for shaping effective public health planning and interventions.

5.5 KEY SENSITIVITIES:

| FEATURE | DESCRIPTION | SENSITIVITY | POTENTIAL IMPACT |
|-----------------------------|---|--|--|
| Population Growth: | The Ohangwena Region, Eenhana Constituency and the Eenhana Town have witnessed significant population growth in the last years. | Lack of serviced erven within Eenhana. | The project aims to formalise land occupation, ensuring tenure security, access to capital, active participation in the economy, and wealth creation during the operational phase. |
| Economic Activities: | Economic activities are predominantly centered around wages and salaries. | Lack of economic activity diversification. | During construction of the road, the construction company will contribute to the formal economy, focusing on local employment, tax contributions, and economic stimulation. |
| Job Creation: | The region faces a high unemployment rate. | Job creation during construction and future economic activities. | The project will focusing on local employment creating job during construction and future economic activities. |

Table 8: Social Cultural Environmental Key Sensitivities

6 STAKEHOLDER ENGAGEMENT

Public consultation is a vital aspect of the Environmental Assessment (EA) process, enabling Interested and Affected Parties (I&APs) to express their perspectives and concerns about the project. This practice ensures compliance with the Environmental Management Act (EMA) and its Environmental Impact Assessment (EIA) Regulations. It fosters collaboration and assists the Environmental Assessment Practitioner (EAP) in thoroughly assessing potential impacts, the necessity for further investigations, and potential mitigation measures.

According to the Environmental Management Act (Act No. 7 of 2007) of Namibia, the environmental practitioner is responsible for overseeing the evaluation of social and environmental impacts, finalising the application process, and facilitating public engagement with Interested and Affected Parties (I&APs). To meet these obligations, the EIA process involves establishing an I&AP database, maintaining an issue and response register, and disseminating all draft and final documents to registered stakeholders.

6.1 METHODS

The methods used during the public consultation to communication with I&APs are as follows:

6.1.1 Newspaper Notices:

Newspaper notices were placed in two separate newspapers simultaneously for two successive weeks. They were published in, The Namibian and The New Era, with publication dates of 5 and 12 October 2023.

The notices provided a brief explanation of the proposed activity and its location. They also invited members of the public to attend the meeting and register as I&APs. Notices which were placed are attached as **Appendix C.1**.

6.1.2 Background Information Document (BID):

A comprehensive Background Information Document (BID) was prepared and distributed. This document contains descriptive information about the proposed township activities. It was emailed to all identified and registered I&APs (**Appendix C.2**).

6.1.3 Site Notice:

A notice was put up at the project site to inform the local community and passersby about the proposed development. This notice makes the public aware of the project and the ongoing public consultation process. Photos of the process are seen in Figure 14.

6.1.4 Notification to Surrounding Property Owners:

On October 21, 2023, surrounding property owners were notified about the public meeting, ensuring their participation in the consultation regarding the subdivision. Additionally, the Namibian Airports Company was informed and consulted about the development.

6.1.5 Town Council Notice Board:

Notices regarding the intended subdivision and the scheduled public meeting were posted on the Town Councils Notice board. This step helps in reaching out to the local community and government authorities.

6.1.6 Public Meeting:

Representatives of Urban Dynamics, and the Eenhana Town Council, held a community meeting on 21 October 2023 at 14:00, within Eenhana. The meeting was conducted in Oshowambo. This public meeting provided a platform for I&APs and the general public to engage in direct discussions, ask questions, and share their concerns or opinions about the proposed development (**Appendix C.3**).

Figure 14: Public Consultation



6.2 SUMMARY OF KEY ISSUES RAISED

| SUMMARY OF KEY ISSUES | |
|-----------------------|--|
| THEME | ISSUE |
| Economy: | <ul style="list-style-type: none"> Concerns were raised about the previous impact on houses resulting from construction activities causing flooding. Emphasis on the need to involve the local community in employment opportunities related to the project. |
| Communication: | <ul style="list-style-type: none"> Lack of awareness among community members regarding their erf boundaries. |

Table 9: Key Community Issues

7 IMPACT ASSESSMENT

While preparing the subdivision layout, the team continuously assessed the project's potential positive and negative impacts. Attempts have been made to enhance and strengthen positive impacts and mitigate and weaken the effects of negative impacts in all cases. The planners made several alterations to the plan until they were satisfied that the layout had been refined to the point where it limits risks, mitigates negative impacts and enhances positive impacts to as great an extent as possible. The following section explores each of these impacts in detail, describing and exploring the various ideas integrated into the layout and assessing alternatives where they seem viable.

The section also explores positive impacts that are not fully addressed by the layout. Many influences may be transitory in nature (for example, occurring only during the project's construction phase) or unavoidable given the site constraints and the need for maximising long-term benefits overall. These impacts and strategies for dealing with them are discussed here, but given that this document is an application for environmental clearance, the measures dealing with their mitigation/enhancement are dealt with in detail in the Environmental Management Plan (EMP).

7.1 SUMMARY OF POTENTIAL IMPACTS

The planning of the alignment and construction of road has the potential to cause environmental and social impacts. The following is a list of potential impacts identified through the scoping process:

7.1.1 Benefits of the Project:

- Provision of formalise serviced erven;
- Stimulation of economic development and providing new employment opportunities during construction; and
- Improve health and safety of the residents in Extension 2 Eenhana

7.1.2 Potential Negative Impacts during Construction:

- Impact of removal of protected trees;
- Impact of dust;
- Impact of noise;
- Impact on traffic flow;
- Impact as result of construction flooding;
- Impact on the health and safety of workers; and
- Impact of waste.

7.2 POTENTIAL IMPACTS

7.2.1 Project Benefits:

Provide for serviced erven: The project will provide the community access to adequately planned erven with specified erf boundaries. The provision of service erven ensures that the residents have a formal and permanent land occupation and security of tenure.

Stimulate employment creation and local economic development: The development will lead to employment creation during the construction phase. By providing for employment within Eenhana, contribute to rates and taxes and spend money within the same economy.

Stimulate health and wellness within the Eenhana townlands and region: To enhance the health and safety of residents in Extension 2, Eenhana, the subdivision plan includes formal roads that are safe and comply with planning standards. This will improve traffic flow within the township.

7.2.2 Potential Negative Impacts during Planning and Construction:

- **The removal of protected trees:** The construction of the road may have to remove protected trees.
- **Impact of construction traffic:** Construction vehicles would need to haul the excavated soil to a disposal site and provide building materials and other supplies (i.e. fuel etc.) to the construction site, most of which could be delivered by truck. Construction vehicles are most likely to pass near erven and disrupt traffic flow within the project site Eenhana Extension 2 and Omnito Extension 2 and 3 (although the exact access routes to the site are yet to be defined).
- **Impact of dust:** The movement of construction vehicles on bare soil is anticipated to generate excessive dust, posing significant health risks to both the surrounding community and construction workers. Dust pollution resulting from these activities can lead to respiratory issues and other health complications. Furthermore, the visibility impairment caused by dust can impact air quality, potentially affecting aviation operations. To mitigate these adverse effects, preventative measures must be implemented to control dust emissions and safeguard public health and environmental quality.
- **Impact of potential construction noise:** Construction machinery creates substantial noise, and this will impact the surrounding community. Constant noise can cause stress and health impacts on nearby residents.
- **Impact of construction waste:** Solid waste is the expected significant source of waste at the construction site. If no construction Waste Management Plan (WMP) is in place to address

general and hazardous waste disposal, it can lead to water and soil pollution on the site and nearby water areas.

- **Impact on the health and safety of workers:** Construction activities always have potential risks for workers. Inadequate site management measures can expose workers to hazardous chemicals, dust, and noise. A lack of notices and signs within the area where deep excavation work is done can put workers' lives in danger.
- **Rainwater Flooding:** Measures to prevent rainwater from flooding residential areas and causing disruptions.

These potential negative impacts during construction underscore the need for meticulous planning, proactive measures, and effective waste management. Addressing these concerns will not only ensure the safety of workers and the community but also contribute to responsible and sustainable construction practices.

7.3 DEALING WITH RESIDUAL IMPACTS

7.3.1 Residual Social Impacts:

No Residual Social Impacts were identified.

7.3.2 Residual Environmental Impacts:

Residual environmental impacts through this project could be elaborated on as follows:

- **Removal of protected trees during the planning and construction phases:** Not all protected trees can be accommodated within the layout. Mitigation measures should be included in the EMP.
- **Impact of dust and noise:** The development project will create dust and noise during the construction phase. This will be limited; methods to limit it are contained in the EMP.
- **Impact of construction traffic:** The project development will have an impact on traffic during the construction phase. To minimise the increase in transportation during the construction phase, mitigation measures to manage the vehicles on the construction site when services are included in the EMP provisions.
- **Impact of solid waste:** As mentioned before, solid waste is the expected source of waste at the construction site. Mitigation methods are contained in the EMP regarding a WMP for the construction site.

- **Health and safety:** During the construction phase, there will be a potential impact on the workers' health and safety due to their work environment. This will be limited, and methods to restrict it are contained in the EMP.
- **Rainwater Flooding:** It may not be possible to prevent all instances of rainwater flooding during construction, measures outlined in the Environmental Management Plan (EMP) are designed to mitigate its impacts.

8 SUMMARY AND APPLICATION

8.1 PROJECT IMPACTS, AVOIDANCE MEASURES AND RESIDUAL IMPACTS

| POTENTIAL IMPACT: | MEASURES: | | | RESIDUAL IMPACTS: |
|---|------------|-------------|---|-------------------|
| | AVOIDANCE: | MITIGATION: | ENHANCEMENT: | |
| STIMULATE LOCAL ECONOMIC DEVELOPMENT AND CREATE EMPLOYMENT OPPORTUNITIES: | | | Development Phase: The construction company will render services within the formal economy, employ local staff, pay rates and taxes, and spend money all within the same economy. Emphasis must be placed on the requirements and employment of local people. | |
| SERVICED RESIDENTIAL ERVEN: | | | The project will lead to: - Formal and permanent land occupation, - Tenure security, - Access to capital and partaking in the economy, | |
| HEALTH AND WELLNESS OF THE COMMUNITY: | | | Development Features: - All services will be located on the higher road reserve. - Provision of pedestrian infrastructure. - Situated within walking distance from the town centre, schools, and health facilities within Eenhana. - Formal and permanent occupation of land with security of tenure. | |

| POTENTIAL IMPACT: | MEASURES: | | | RESIDUAL IMPACTS: |
|------------------------------------|---------------------------------------|--|--------------|---|
| | AVOIDANCE: | MITIGATION: | ENHANCEMENT: | |
| POTENTIAL NEGATIVE IMPACTS: | | | | |
| REMOVAL OF PROTECTED TREES: | Avoid the removal of protected trees. | Planning Phase: Accommodate protected trees in: <ul style="list-style-type: none"> • Public Open Space, • Individual erven, • In road reserves. Construction Phase: <ul style="list-style-type: none"> • Identify protected trees. • Obtain permits for removal of protected trees. | | Not all protected trees can be accommodating within the layout. Mitigation mergers should be included in the EMP. |
| DUST AND NOISE: | Avoid dust and noise. | Construction Phase: <ul style="list-style-type: none"> • Implement scheduling of construction activities to minimise dust and noise during sensitive hours. • Implement dust suppression techniques such as water spraying, dust barriers, or dust control chemicals. • Implement traffic management plans to minimise vehicle-related noise and dust generation. • Train to workers on noise and dust control measures. | | Dust and noise prevention may not be achievable. Mitigation measures to reduce the impact of dust and noise should be included in the EMP. |

| POTENTIAL IMPACT: | MEASURES: | | | RESIDUAL IMPACTS: |
|--|--|---|--------------|--|
| | AVOIDANCE: | MITIGATION: | ENHANCEMENT: | |
| POTENTIAL NEGATIVE IMPACTS: | | | | |
| INCREASE IN TRAFFIC DURING CONSTRUCTION: | Avoid uncontrolled increase in traffic. | Traffic should be restricted between 07h00 and 18h00 during construction. | | An increase in traffic can be managed. However, the increase in traffic will still have a potential impact on residents. |
| HEALTH AND SAFETY OF WORKERS: | Avoid health and safety impacts on workers during the construction phase. | Proper construction practices and safety procedures need to be applied during construction. | | Not all the health and safety aspects of the workers can be prevented. |
| | Avoid health and safety impacts on residents during the operational phase. | <ul style="list-style-type: none"> New development should follow the guidelines outlined in FSS-AGA-FORM-032. Structures must comply with height restrictions set by the Namibia Civil Aviation Authority, prohibiting second-floor construction. | | Not all the health and safety aspects of the residents can be prevented. |
| IMPACT OF WASTE: | Avoid impacts of solid waste during the construction phase. | A Waste Management Plan should be in place to limited impacts of waste on the watercourses and surrounding area. | | Not all impacts because of waste can be prevented. |

9 APPLICATION FOR ENVIRONMENTAL CLEARANCE

Given these baseline investigation findings, there are no current future environmental impacts and future identified due to construction of the street within Eenhana Extension 2.

It is recommended that the development proceed without the need for further assessment, as provided for under articles 33 and 34 of the Environmental Management Act. The application form for an Environmental Clearance Certificate as per Section 32 is attached as **Annexure "1"** to this Scoping Report.