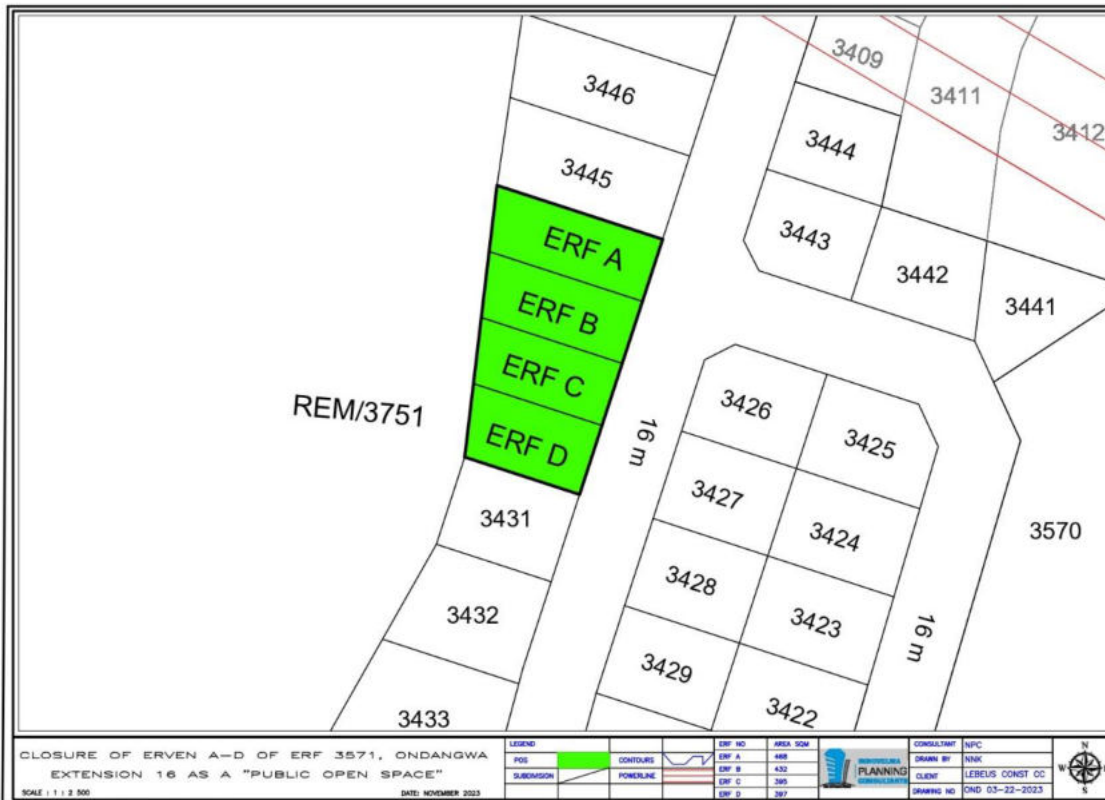


ENVIRONMENTAL IMPACT ASSESSMENT SCOPING REPORT

FOR THE PERMANENT CLOSURE OF PROPOSED ERVEN A-D OF ERF 3571,
ONDANGWA EXTENSION 16 AS A “PUBLIC OPEN SPACE AND SUBSEQUENT
REZONING TO “SINGLE RESIDENTIAL”.



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LIST OF ABBREVIATIONS

TERMS	DEFINITION
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
DEA	Department of Environmental Affairs
PPPPs	Projects, Plans, Programmes and Policies
NDC	Namibia Development Consultants
SANS	South African National Standards
I&APs	Interested and Affected Parties
PM	Particulate Matter
NPC	Nghivelwa Planning Consultants
GRN	Government of the Republic of Namibia

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1. INTRODUCTION

1.1 Project Overview

Lebeus Construction and Plumbing CC has been allocated proposed Erven A-D of Erf 3571, Ondangwa Extension 16 by Ondangwa Town Council in order to develop and construct 4 single residential properties. The proposed Erven are located in Extension 16, Ondangwa Town in Oshana Region in north central Namibia. The Ondangwa Town Council resolved to allocate the land in order to help with the provision of housing in the northern town and to reduce the housing backlog of the town.

Proposed Erven A-D/3571 are currently zoned as a “Public Open Space” and in order for the construction of houses to commence, the statutory town planning and environmental management procedure for the permanent closure of proposed Erven A-D of Erf 3571, Ondangwa Extension 16 as a “Public Open Space” has to be carried out.

Nghivelwa Planning Consultants, a Town and Regional Planning and Environmental Management Consultancy firm has been appointed to conduct an Environmental Impact Assessment and Environmental Management Plan (EMP) for the permanent closure of proposed Erven A-D of Erf 3571 as a “Public Open Space” and subsequent rezoning to “Single Residential”. The Environmental Impact Assessment has been conducted to meet the requirements of the Namibia’s Environmental Management Act (No. 7 of 2007).

An EIA may be defined as: a formal process to predict the environmental consequences of human development activities and to plan appropriate measures to eliminate or reduce adverse effects and to augment positive effects.

Thus, an EIA has three main functions:

- To predict environmental problems,
- To find ways to avoid environmental problems, and
- To enhance positive effects.

1.2 Terms of Reference

The permanent closure of the proposed Erven A-D of Erf 3571, Ondangwa Extension 16 as a “Public Open Space” and subsequent rezoning to “Single Residential” is a listed activity that cannot be undertaken without an Environmental Clearance Certificate. Therefore, as part of the commissioning process an Environmental Impact Assessment (EIA) is required. Thus, it was necessary for Lebeus Construction and Plumbing CC to appoint Nghivelwa Planning Consultants

to provide environmental management consultancy services to undertake an environmental impact assessment to comply with the Environmental Management Act, 2007 (Act no. 7 of 2007).

The Terms of Reference (ToR) for the consultants were, but not limited to the following:

- The collection of all possible data on the environmental, social and natural resource components and necessary parameters;
- A description of the location of the proposed project including the physical area that may be affected by the project activities;
- Description of the design of the proposed project;
- Description of the activities that will be undertaken during the project construction, operation and decommissioning phases;
- Listing of the materials to be used, products and by products, including waste to be generated by the project and the methods of disposal;
- Identification of the potential environmental impacts of the proposed project and
- The mitigation measures to be taken during and after implementation of the project;
- Accidents during the project cycle;
- Establishment of a plan to ensure the health and safety of the workers and neighboring communities;
- Identification of the economic and socio-cultural impacts of the proposed project;
- Economic and social analysis of the project including project risk and measures to mitigate them.
- Establishment of an action plan for the prevention and management of possible impacts (EMP).
- The consultant will prepare recommendation on the project for its future use.

1.3 Acknowledgement

Nghivelwa Planning Consultant has prepared this EIA Report on behalf of Lebeus Construction and Plumbing CC. As the project proponent, Lebeus Construction and Plumbing CC has provided the necessary information and documents and the necessary guidance during the project undertaking and during the preparation of this report. The Consultant (Nghivelwa Planning Consultant) acknowledges the contribution provided by the proponent and support and interest shown by all the identified stakeholders.

1.4 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

This EIA Report was prepared by the following Environmental Practitioners:

Name of representative of the EAP	Education qualifications	Professional affiliations
Nghivelwashisho Natangwe Ndakunda	MBA-Entrepreneurship, B-Tech Town and Regional Planning	Namibia Council of Town and Regional Planners, Namibia Institute of Town and Regional Planners
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Table 1: EAP's

2. EIA METHODOLOGY

The objective of the assessment of impacts is to identify and assess all the significant impacts that may arise from the undertaking of an activity and the findings used to inform the competent authority's decision whether the activity should be approved, approved subject to conditions that will reduce the impacts to within acceptable levels, or should be rejected. In this sense impacts are defined as the changes in an environmental or social parameter that result from undertaking the proposed activity. The following general methodology was used in this EIA for the proposed permanent closure of a public open space; to investigate the potential impacts on the social and natural environment due to the closure and construction of houses:

The key activities undertaken during the assessment included the following:

2.1 Establishment of the environmental baseline

This involved study and description of the receiving environment on which the proposed project is to be implemented. Thus, it involved a site visit, physical inspection of the study area's soil, biology, topography, animal species, water resources, climate and the local socio-economic environment.

2.2 Impact analysis

This involves the identification of impacts that are usually associated with the construction, operation or maintenance and decommissioning of the proposed activity and are generally obvious and quantifiable. These impacts were analyzed and evaluated.

2.3 Impacts mitigation

This involves the identification of the impacts and once impacts have been identified and predicted for a particular activity, then appropriate mitigation measures need to be established. Mitigation measures are the modification of certain activity in such a way as to reduce the impacts on the physical- and socio-economic environment. The objectives of mitigation are to:

- Find more environmentally sound ways of doing things;
- Enhance the environmental benefits of a proposed activity;
- Avoid, minimize or remedy negative impacts; and ensure that residual negative impacts are within acceptable levels.

Furthermore, impacts associated with all the stages of the proposed project were identified and mitigated. An Environmental Management Plan has been prepared as framework for mitigation of impacts and environmental monitoring of the project.

2.4 Review of alternatives

This entailed a review of the alternatives to the proposed project. This was aimed at determining better ways of avoiding or minimizing environmental impacts while still realizing the project goals. The review of alternatives provided opportunities for environmental enhancement. The alternatives reviewed were alternative sites and the no project alternative.

2.5 Public Participation Process (PPP)

This process for the public participation was done by informing the relevant stakeholders and Interested and affected parties. Advertisements for the public to participate and raise their concerns on the proposed project were placed in two (2) local newspapers of the New Era and Confidante of the 10th and 17th November 2023. The public and interested and affected parties were invited to provide comments to the EIA and no interested or affected party registered any comments. Due to the small scale nature of the project and lack of interest, a public meeting about the proposed development and its potential impacts to the environment was deemed not necessary.

3. POLICY AND OTHER RELEVANT LEGISLATION

SUBJECT	INSTRUMENTS AND CONTENT	APPLICATION TO THE PROJECT
The Constitution of the Republic of Namibia	General human rights – eliminates discrimination of any kind The right to a safe and healthy environment	Ensure these principles are enshrined in the documentation of the project

	Affords protection to biodiversity	
Environmental Management Act EMA (No 7 of 2007)	Requires that projects with significant environmental impact are subject to an environmental assessment process (Section 27). Details principles which are to guide all EAs.	Ensure that the permanent closure is carried out within the parameters of the Act.
Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 487	Details requirements for public consultation within a given environmental assessment process (GN 30 S21). Details the requirements for what should be included in a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).	Ensure that the township establishment aligns with the EIA regulations.
Forestry Act No 27 of 2004	Provision for the protection of various plant species	Some species that occur in the area are protected under the Forestry Act and a permit is therefore required to remove the species
Hazardous Substances Ordinance 14 of 1974:	Control of substances which may cause injury or ill-health or death of human beings because their toxic, corrosive, irritant, strongly sensitizing or flammable nature	The waste generated on site and at the campsite should be suitably categorised/classified and disposed of properly and in accordance with the Measures outlined in the Ordinance.
The Nature Conservation Ordinance (No. 4 of 1975)	Prohibits disturbance or destruction of protected birds without a permit. Requires a permit for picking (the definition of “picking” includes damage or destroy) protected plants without a permit	Protected plants will have to be identified during the planning phase of the project. In case there is an intention to remove protected species, then permits will be required.

Forestry Act 12 of 2001 Nature Conservation Ordinance 4 of 1975	Prohibits the removal of any vegetation within 100 m from a watercourse (Forestry Act S22(1)). Prohibits the removal of and transport of various protected plant species.	Even though the Directorate of Forestry has no jurisdiction within townlands, these provisions will be used as a guideline for conservation of vegetation.
Convention on Biological Diversity, 1992	Protection of biodiversity of Namibia	Conservation-worthy species not to be removed if not absolutely necessary.
Water Resources Management Act 11 of 2013	The Act provides for the management, protection, development, use and conservation of water Resources; to provide for the regulation and monitoring of water services.	Obligation not to pollute surface water bodies
National Heritage Act 27 of 2004	Section 48(1) states that “A person may apply to the [National Heritage] Council [NHC] for a permit to carry out works or activities in relation to a protected place or protected object	Any heritage resources (e.g. human remains etc.) discovered during construction requires a permit from the National Heritage Council for relocation
Labour Act 11 of 2007	Details requirements regarding minimum wage and working conditions (S39-47).	Employment and work relations
Health and Safety Regulations GN 156/1997 (GG 1617	Details various requirements regarding health and safety of labourers.	Protection of human health, avoid township establishment at areas that can impact on human health.
Public Health Act 36 of 1919	Section 119 states that “no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.”	Ensure that all contractors involved during the construction, operation and maintenance of the proposed project comply with the provisions of these legal instrument
Water Resources Management Act 11 of 2013	Prohibits the pollution of underground and surface water bodies (S23(1)). Liability of clean-up costs after closure/ abandonment of an activity (S23(2)).	The protection of ground and surface water resources should be a priority. The main threats will most likely be concrete and hydrocarbon spills during construction and hydrocarbon

		spills during operation and maintenance.
Urban and Regional Planning Act no 5 of 2018	Details the functions of the Urban and Regional Planning Board including their consideration when assessing an application for the permanent closure of public open spaces and subsequent rezoning (S3)	The proposed subdivision plan and land uses should be informed by environmental factors such as water supply, soil etc. as laid out in Section 3 of the act.
Local Authorities Act no 23 of 1992	Details the procedures to be followed for the permanent closure of public open spaces in Local Authority Areas.	The public must be informed on the permanent closure of public open spaces.

Table 2: Relevant legislation

4. NEED AND DESIRABILITY OF THE PROPOSED PROJECT

The Ondangwa Town Council derives its mandate from the Local Authorities Act, 23 of 1992 as amended. Amongst its many duties towards the provision of services to its residents is the provision of affordable housing. The northern town has seen a significant increase in the applications for residential land and like other towns in Namibia has been unable to allocate land to all of its inhabitants. This is due to a lack of resources at the local and national levels to meet the housing needs of Namibians.

The Ondangwa Town Council thus turned to the private sector to fill the gap and to participate in the development and provision of housing in the town. The use of local private companies to construct houses and sell them to private individuals is seen as a win-win situation as it stimulates the economy of the town by empowering local companies while benefiting the wider public by providing houses to the needy.

Therefore, the Ondangwa Town Council identified the unused portion that is proposed Erven A-D of Erf 3571, Ondangwa Extension 16 to be ideal for the construction of houses through a public-private partnership. This led to the Town Council to allocate the portion to Lebeus Construction and Plumbing CC to develop the proposed Erven A-D of Erf 3571, Ondangwa Extension 16 and constructed 4 houses on the new properties to be created.

The houses to be developed will be sold to the medium income sector of Ondangwa residents which has been somewhat neglected by local authorities as they mainly focus on the low income end of the housing spectrum. Thus, the development will benefit both the local authority and its residents and it will help with the provision of housing in the town and it will contribute to the economic growth of Ondangwa.

5. SCOPE OF THE EIA

The objectives of the scope of the EIA were to ascertain key issues of the environmental impacts that are likely to be important during all the phases of the Project. Relevant environmental data has been compiled by making use of primary data which was collected during the site assessment done on the 17th of November 2023 and by using secondary data already available. Potential environmental impacts and associated social impacts were identified and addressed in this report.

The construction and operational phases of the proposed permanent closure of a public open space and subsequent rezoning will involve;

- The preparation of the site, including excavations.
- Transportation of construction materials.
- Off-loading of materials
- The constructions of the buildings
- The supply of bulk services such as water, electricity, waste disposal plan and waste management
- The Maintenance of the Erven by Ondangwa Town Council.

The Environmental Impact Assessment study report includes an impact assessment and mitigation measures for the three phases of the proposed project following:

- The field investigations (site assessment),
- Identifying and involving all stakeholders in the Environmental Impact Assessment process by expressing their views and concerns on the proposed project;
- Identify all potential significant adverse environmental and social impacts of the project and recommend mitigation measures to be well described in the Environmental Monitoring Plan (EMP);
- Coordination with the proponent, regarding the requirements of law of Namibia's Environmental Management Act (No. 7 of 2007) and other relevant policies and administrative framework.
- To define the Terms of Reference for the Environmental Impact Assessment study.
- A review of the policy, and relevant legislations
- To provide overall assessment information of the social and biophysical environments of the affected areas by the proposed development.

6. DESCRIPTION OF THE PROPOSED ACTIVITY

The proposed activity is for the subdivision of the Remainder of Erf 3571, Ondangwa Extension 16 into Erven A-D and Remainder, permanently close the proposed Erven A-D of Erf 3571, Ondangwa

Extension 16 as a “Public Open Space” and subsequently rezone the proposed Erven A-D/3571 from “Public Open Space” to “Single Residential”. The activity involves the constructions of 4 houses on the newly created, closed and rezoned erven.

It also includes the maintenance of the site during the operational phase such as waste disposal, noise pollution as well as maintenance of the afore-mentioned municipal services. The proposed Erven A-D/3571 are already connected to the municipal services of Ondangwa Extension 16 and they will obtain access from the adjacent street that is already constructed. Thus, there will be no construction of bulk municipal services for this development.

All new erven to be created will be connected to the existing bulk services and the water-borne sewage will be connected to the sewerage reticulation system of Ondangwa, the harmful residue that is created will be transported to the waste disposal site as to be provided by the Ondangwa Town Council. The land is currently not developed and there is no fauna or flora that is found on the property. Thus, the proposed residential development is consistent with future plans of the government.

6.1 Proposed location and land ownership

Proposed Erven A-D of Erf 3571, Ondangwa Extension 16 are currently owned by the Ondangwa Town Council and currently measure $\pm 1\ 692\text{m}^2$ in extent. It is situated on the property legally known as Erf 3571, Ondangwa Extension 16, Ondangwa Urban Constituency, Oshana Region as shown in Figure 1 below. The site is currently vacant. The proposed site is located in the middle of Ondangwa Extension 16. The GPS coordinates of the location of the proposed project site are: $17^\circ\ 54.625'S$, $15^\circ\ 59.534'E$.

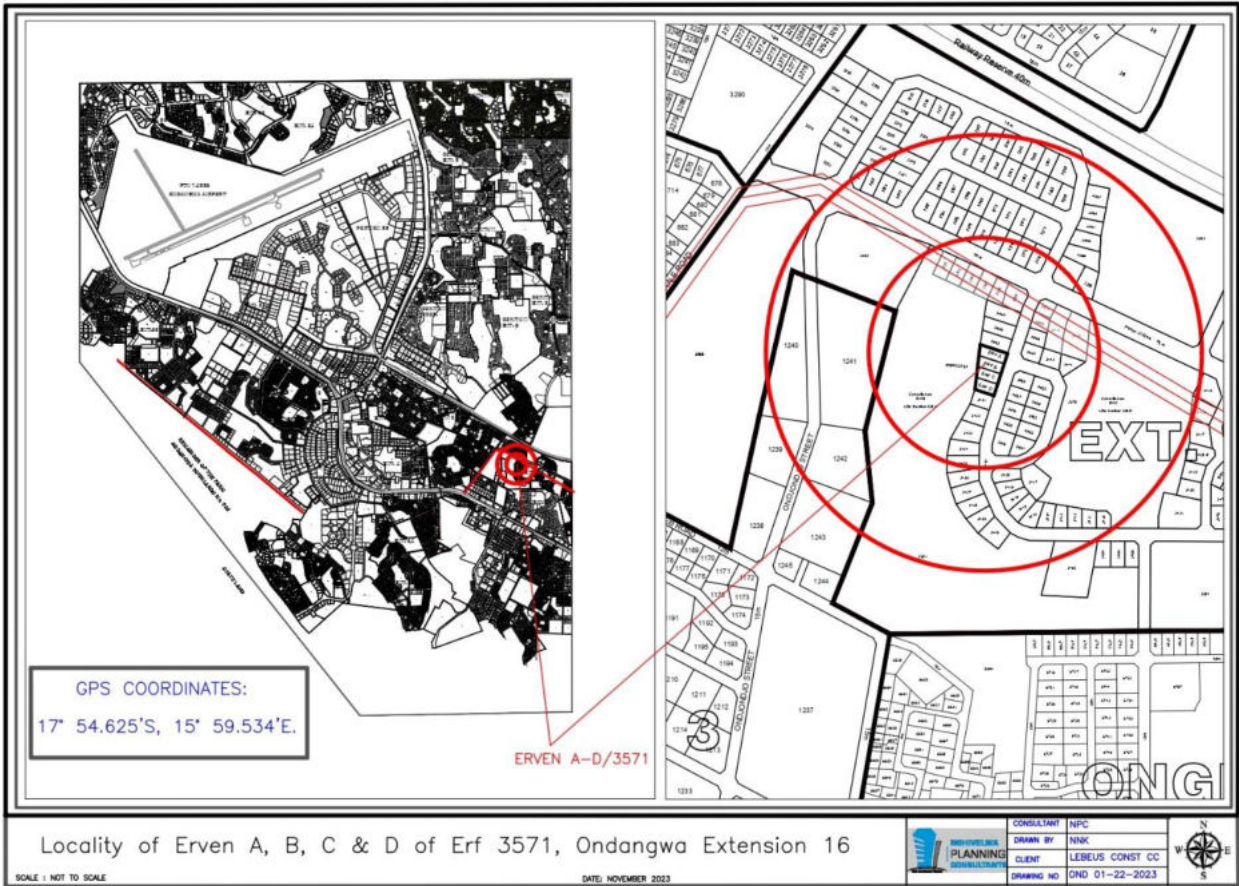


Figure 1: Locality plan of Erven A-D/3571

6.2 Ownership

Portion 1 of Oshigambo Townlands No. 1117 is owned by the Ondangwa Town Council, however, the portion has been allocated to Lebeus Construction and Plumbing CC. Thus, Lebeus Construction and Plumbing CC will be managing the development during the construction phase while Ondangwa Town Council will be managing the project during the operational phases. The proposed erven will then be sold to willing buyers in Ondangwa.

6.3 Description of the site

- The slope of the site is relatively flat, with the seasonal water pond running on the western edge of the proposed portion.
- Although no characteristics of ground slope instability were observed on site, there is a possibility of flooding along the western edge of the property during abnormal heavy rain seasons.

- There was no ground surface water during the site investigation as this was done during the dry season. However, water is expected to accumulate in the water ponds during the wet seasons.
- There is minimal erosion in some areas that are caused by seasonal floods.
- Medium excavations can be expected but no blasting operations are foreseen.

6.4 Photographic History

Below are the photographs indicating the general situation and environment of the proposed site and its surroundings.





Figure 2: Typical conditions of Erven A-D/3571

6.5 Description of the proposed project

The Ondangwa Town Council has allocated proposed Erven A-D of Erf 3571, Ondangwa Extension 16 to Lebeus Construction and Plumbing CC for the development of residential properties. The proposed portions are however zoned for “Public Open Space” purposes and a town planning and environmental management exercise for the subdivision of Erf 3571, Ondangwa Extension 16 into Erven A-D, closure of the proposed Erven as a “Public Open Space” and subsequent rezoning to “Single Residential” is necessary in order for the construction of houses to commence.

6.6 Proposed Project Activities

The proposed development entails the permanent closure of proposed Erven A-D of Erf 3571, Ondangwa Extension 16 and subsequent rezoning to “Single Residential. The subdivision and closure plan is shown in figure 2 below.

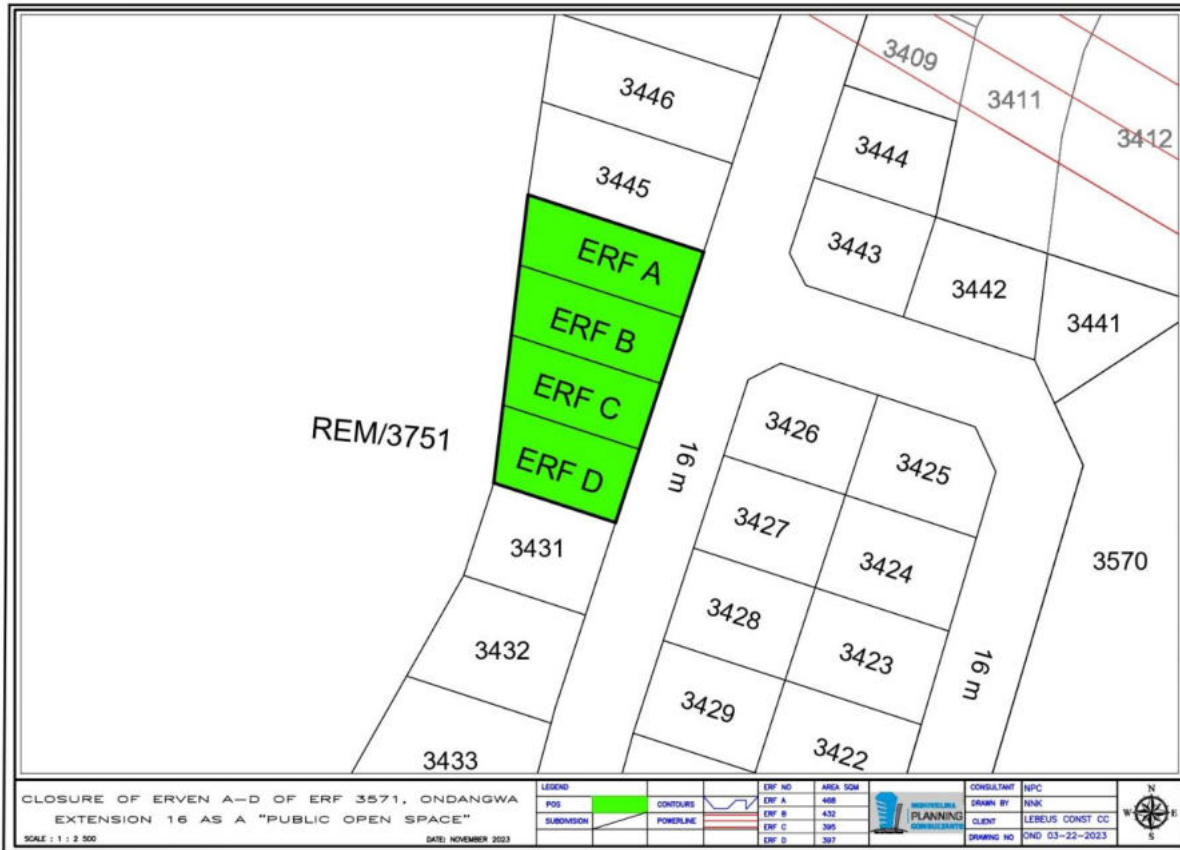


Figure 3: Subdivision and land use plan (Oshigambo)

6.7 Engineering Services

The proponent is proposing to create 4 new erven upon the completion of the town planning and environmental management exercise for the construction of single residential properties on each of the new erven created. The proposed erven are already connected to the bulk engineering services as per the standard engineering requirements that are used in the Namibian industry to make it safe for the habitation of people.

6.7.1 Bulk Infrastructure

The bulk services are already available for this development and apart from connecting the new houses to be created to the bulk services, no additional construction of bulk services is expected.

a) Water

The existing bulk water infrastructure is sufficient to accommodate the proposed development.

b) Sewerage

The existing sewer reticulation system of Ondangwa Extension 16 is sufficient for the proposed development and no additional construction of bulk sewer water reticulation is expected.

c) Electricity

The proposed erven will get electricity from the already constructed electrical network of Ondangwa Extension 16 that is running adjacent the property.

d) Storm water

A storm water drainage system is already constructed and will be channeled along the streets of Ondangwa Extension 16, additional water drainage can be constructed to channel water towards the back of the new erven if it is necessary.

e) Waste Produced

The waste to be produced from the construction of houses will be disposed of by the proponent and waste generated by the operation of the houses will be handled by the Ondangwa Town Council and disposed of at an approved waste disposal site.

f) Roads

No additional road construction will take place as a result of this development.

6.7.2 Blasting

No blasting is to be carried out during the construction of the houses as the soil in the area is not rocky and does not require blasting during the construction of the foundations.

6.8 Phases of the project

The project will consist of three (3) phases, namely the construction, operational and possible decommissioning phase.

6.8.1 Activities during the Construction Phase

a) Site Office

The contractor shall construct a temporary site office to run and manage all activities on site during this phase.

b) Site clearance and fencing

There is currently no vegetation found on site thus, site clearance is not necessary. For public safety and for the security of construction material and equipment, the site must be isolated from the general public.

c) Excavation

Excavations for the construction of the house foundations is expected and the soil excavated will be used to fill the rest of the portion. Thus, minimal waste is expected to be generated from this activity.

6.8.2 Activities during the operation and maintenance phase

During this phase, Ondangwa Town Council will be responsible for the following:

- Maintenance of the site, such as waste disposal;
- Controlling the noise pollution in the area;
- Maintenance of the bulk municipal services;
- Maintenance of public parks;
- Maintain ace of roads, sewerage and electricity infrastructure;
- Collection of rates and taxes.

6.8.3 Activities at the decommissioning phase

In this stage of the development, it is deemed unnecessary to decommission the project because the area has been earmarked by the town council for housing development and thus can accommodate the proposed development. Therefore, there will be no need for decommissioning the project in the near future.

7. BASELINE DATA

7.1 Climate and Temperatures

The table 1 below briefly describe the general climatic conditions experienced within the Oshana Region including the Ondangwa area, as deduced from the Atlas of Namibia, by Mendelsohn et al 2003. The rainy season is limited between the months of November and April whereby an average of 350-400 mm of rainfall is estimated per annum.

In addition, the Cuvelai has inconsistencies in rainfall timings which lead to great variation in the annual rainfall between 30-40 percent. Furthermore; Temperatures vary little across the Basin where the average is greater than 19°C in most areas, especially during the summer months. The annual evaporation of the Basin is known to depend on the temperature, humidity, cloud cover, wind and solar radiation. The predominant wind in the area is expected to be in the easterly direction.

Average rainfall:	Rainfall in the area is averaged to be less than 350 mm-400 mm	per year.
Variation in rainfall:	Variation in rainfall is averaged to be 30-40 % per year.	
Average evaporation:	Evaporation in the area is averaged to be between 2800-3000 mm per year.	
Precipitation:	The highest summer rains are experienced from October to April.	
Water Deficit:	Water deficit in the area is averaged to be between 1501-1700mm per year.	
Temperatures:	Temperatures in the area are averaged to be more than 19-20 °C per year.	
Wind direction:	Wind directions in the area are predominantly easterly winds.	

Table 3: Summary of general data

7.2 Geology, Topography and drainage

The Kalahari sand plateau in the north-east was originally deposited as longitudinal dunes in an east-westerly direction. These longitudinal dunes, with associated omuramba's, form the agro-ecological zone KAL 8 (de Pauw et al. 1998/99). The drainage to the north of the Mangetti (north-east of Oshivello) is still in an east-westerly direction (the "Akadhulu" or "Akazulu"). These fossil dunes do not show a great difference in relief (compared to southern Kavango and north-eastern Grootfontein districts), probably because of erosion and thus a general flattening of the topography.

As these remnant dunes flatten out completely, the rivers “Akadhulu” and “Niipele” turn south towards the Etosha pan. Roughly 80 % of the study area, to the east of Onankali - Okankolo, falls within these fairly flat sand plains, as part of the KAL 3-3 (de Pauw et al. 1998/99). It consists of a sand drift plain with a general slope range of 0-2 % (i.e. flat), very low relative relief (< 10 m), with no preferred drainage orientation.

Drainage in the sand plateau is mainly vertical (downwards). This has resulted in the formation of numerous pans in the north-western parts of the country, spreading out up to Eenhana in the north (the KAL4 according to de Pauw et al. 1998/99). The vertical movement of water leads to increased mineralisation of the sands, thus forming finer textured, more fertile soils in these pans. Both the more fertile soils and the shallow ground water in these pans has resulted in the settling of people along these pans in the Oshana Region.

The literature review shows the results of the soil profile done at one of the above-mentioned pans, that a mini soil profile pit was dug at relevé 87138. The soil profile looked as follows:

Top: 1-2 cm bleached white sand (could be the deposit of erosion from further up).

A-Horizon: 30 cm deep, dark grey loamy sand.

B-Horizon: below 30 cm, yellow grey sandy loam, very sticky to the touch. (Strohbach 1999).

The broad-leafed savannah falls within growing period zone 3 (de Pauw et al.1998/99).

7.3 Vegetation

This vegetation type is typical of the “Forest savanna and woodland (northern Kalahari)” (Giess 1971). This is described as a species-rich vegetation dominated by deciduous trees like *Burkea africana*, *Terminalia sericea*, *Lonchocarpus nelsii*, *Baikiaea plurijuga*, *Pterocarpus angolensis*, *Ochna pulchra*, *Combretum* species and *Grewia* species.

Typical trees are *Terminalia sericea*, *Combretum collinum*, *Lonchocarpus nelsii*, *Burkea africana* and *Acacia fleckii* and the shrubs *Combretum engleri*, *Acacia ataxacantha*, *Bauhinia petersiana*, *Ozoroa schinzii*, *Grewia flava*, *G. flavescens* and *G. bicolor* as well as *Commiphora angolensis*, *C. africana* and *C. glandulosa*. In KAL 8 (Omuramba-Dune association) north of King Kauluma school some *Baikiaea plurijuga* were encountered on a dune. Although this popular timber species had only a DBH of 20 cm (thus far from exploitable), some of these trees were found chopped down in this remote area.

The vegetation in this area is described as woodland dominated mainly by camelthorn shrubs. The vegetation on site consists of short grass moderately scattered around the site. The project site is currently undeveloped but clearly shows; disturbances by animals and human activities, no much clearing of vegetation will occur. There are no protected species onsite that needs to be preserved and be made part of the development. No endangered species were observed on site; therefore, no

threat to vegetation was identified. No wildlife was observed in the vicinity of the study area, only domestic animals mainly cattle, goats and donkey are present in the vicinity of the proposed project site.

7.4 Soils

The dominant soils in the Oshana Region are haplic Arenosols associated with ferralic Arenosols (sandy soils with a very poor nutrient-retaining capability). Strohbach (1999) describes a mini soil profile pit at relevé 87126 as follows: Top 5 cm: Humus enriched, bleached yellow-grey sand Below 5 cm: Undifferentiated pure red sand.

8. SOCIO-ECONOMIC ENVIRONMENT

8.1 Demographics

According to the 2011 National Population and Housing Census. Oshana Region has a population of 176 674, of which the vast majority (55 percent) lives in rural areas and thirteen percent (45%) live in urban areas. The Census also estimated that there are 96 559 females and 80 115 males. The population density is 20.4 persons per km² and the Human Poverty index (HPI) is 21% compared to National HPI of 24.7. Life expectancy is 61 years for females and 50 years in males. Most eighty-six (86%) of the households residing within the Oshana Region, speak Oshiwambo.

8.2 Economic activities

There has been immense commercial and industrial growth in Oshana Region. Various shopping malls, schools and other businesses have opened in the area and have improved both the economic and social stance of the Region. However, much of the economy of the Oshana region is still based on farming.

8.3 Education Profile

The Oshana Region is well placed with regards to academic rates in the whole of Namibia. According to (EMIS, 2012) there are 137 schools. The literacy rates for persons older than 15 years of the Region is 96% compared with that of Namibia which is 91, 53%.

8.4 Employment Opportunities

By the year 2011, sixty-one percent (61%) of the population older than 15 years, were employed and thirty-nine percent (39%) unemployed. The population outside the labour force comprised of students, homemakers and retired or old age persons.

8.5 Incomes

Subsistence farming (33%) and labour migration are considered the primary livelihood sources of many households. The majority of the employed population are employed in the formal sector making Wages and Salaries 30% the second main source of income in the region. Pensions 19%, Non-farming business 10%, Cash Remittance 5% is the means of survival for the rest of the population.

8.6 Health Profile

In Namibia, the HIV prevalence rate in pregnant women age group 15 to 49 is estimated at 21.3% (UNDP, 2005). While the HIV prevalence rate in the Oshana Region stands at 15.9%. Ninety-four percent of the population in the region have access to safe drinking water, while 15 % have poor or no access to toilet facilities.

9. ANALYSIS OF ALTERNATIVES

In terms of environmental impact assessment best practice, assessment of potential impacts from a proposed activity must include the assessment of alternatives. Assessment of alternatives is undertaken to identify the option that will minimise harm to the environment and may include site, technology and other alternatives, but must always include the option of not implementing the activity, known as the “no-go” alternative.

9.1 Alternative Site

The proponent has no other option of undertaking the proposed development in a different location other than the chosen site. This is because the Ondangwa Town Council has allocated this specific portion to the proponent and it will not make sense to allocate another portion.

Due to the fact that the proposed portion of land is already earmarked for the development and thus there are no other alternatives to this development, Alternative 1, is the only site that is identified for the construction of houses. Therefore, no alternative site has been identified or considered during this study.

The following reasons justify the use of the proposed site for the development:

- The proposed site is under the jurisdiction of Ondangwa Town Council;
- The Ondangwa Town Council is developing this portion as part of its mandate;
- The portion is already earmarked for the development;
- The development will offer security of tenure to the inhabitants;
- The development will create employment and opportunities for local people;
- The development will increase the economy of Ondangwa.

- The development will promote orderly and sustainable development in the town.

9.2 The “No Project” Alternative

The No-Go Option is the option not to proceed with the activity, implying a continuation of the current status quo. Therefore, the No-go Alternative would mean that the proposed permanent closure of the public open space and subsequent rezoning to single residential will not go ahead.

Should the proposed permanent closure and rezoning not take place, Ondangwa town will not be able to provide housing to its residents, it will not stimulate its economy and this can have long term negative effects on the social stability of the area. From the environmental-socio-economic point of view, the no project option is the least preferred option due to the following factors:

- There will be no socio economic development in Ondangwa Town;
- The community will continue to be homeless;
- Investment in the town will be limited;
- Inhabitants will be deprived of basic and governmental services;
- No employment opportunities will be created for the locals;
- Poverty will not be eradicated in terms of job creations;
- The local skills would remain underutilized;
- Reduced technology advancement at the town and interaction both at local, national and international levels;

This is therefore not a desirable alternative.

10. PUBLIC PARTICIPATION PROCESS (PPP)

This section of the report provides details of Public Participation Process (PPP) undertaken in the compilation of the EIA scoping report. In terms of Section 26(1)(h) of the Namibian Environmental Assessment Regulations (2012), it is a requirement to provide details of the public participation process conducted in accordance with Section 32 of the Environmental Assessment Regulations.

Furthermore, the Public Participation forms an important component of this EIA. It has been defined by the Ministry of Environment and Tourism that an Environmental Assessment Regulations (2012) of the Environmental Management Act (2007), as a process in which potential interested and affected parties such as service providers, traditional leaders, local authorities, environmental groups, village councils and communities, to comment on the potential environmental impacts associated with the proposed project are given an opportunity to comment on, or raise issues relevant to the proposed project and its benefits to the nation and its economy.

Apart from these legal requirements, Consultations with the general public and other relevant stakeholders to ensure that their inputs are taken into account during the decision-making process was carried out as per the EIA regulations.

10.1 Aim for Public Participation Process (PPP)

The aims for the Public Participation Process are but not limited to:

- Informing Interested and Affected Parties (I&APs) of the proposed project;
- Identifying issues, comments and concerns as raised by I&APs;
- Promoting transparency and an understanding of the project and its consequences;
- Serving as a structure for liaison and communication with I&APs; and
- Providing local knowledge and input in identifying potential environmental (biophysical and social) impacts and “hotspots” associated with the proposed development.

10.2 Compilation of stakeholder database

The first step in the Public Participation Process (PPP) is to identify key stakeholders. A stakeholder database was compiled and the target groups for this project were invited to comment on the proposed development, the following were invited to Comment:

- Ondangwa Town Council (as the approving authority for town planning projects and service provider for bulk services).
- General public

Please note that some of the interested and Affected Parties are also consulted during the town planning process of the subdivision, closure and rezoning of the public open space.

10.3 Background Information Document

This document provides a short summary of the project and the EIA process. Therefore, a background information document (BID) was prepared and was ready to be distributed to Interested & Affected Parties. After all stakeholder and I&Aps were informed none of them requested for the Background Information Document (BID). See a copy of the BID attached.

10.4 Notification of I&Aps

The requirements for the notification of potentially interested and affected parties of this application are set out in detail in section 32(2)(b) of the EA regulation. These requirements have been addressed and include;

- Forwarding letters to government authorities and other identified relevant stakeholders;
- Fixing a notice at a place conspicuous to the public in English;

- Placing advertisements twice in at least two local newspapers.

10.5 Advertisement

The advertisement of the public participation and submission of comments for the proposed project were placed in two national newspapers circulating in the Ondangwa, the New Era and Confidante Newspapers dated: 10th and 17th November 2023. Proof of advertisements are attached.

10.6 Notice Board

An A3 size notice detailing information about the project and the EIA process was at the town planning notice Board of Ondangwa Town Council on the from the 10th of November until the comments period lapsed on the 1st of December 2023.

10.7 Public Meeting

In compliance with the EIA Regulations (2012), public (I&AP) and all stakeholders were notified as a requirement for EIA process. However, due to a lack of interest from the public, the small scale nature of the project and the minimal impacts the project is expected to have on the public, a public meeting was not held for this development.

10.8 Issues raised by interested and affected parties

The identified key stakeholder in this project is the Ondangwa Town Council. They are also the initiator and one of the competent authorities in the town planning process of this project. Thus, consultations with the town council goes beyond the EIA process and are in favour of the project.

11. ENVIRONMENTAL ASSESSMENT METHODOLOGY

An appraisal of the type of effects the proposed subdivision of Erf 3571, Ondangwa Extension 16, permanent closure of proposed Erven A-D/3571 and subsequent rezoning to “Single Residential” would have on the affected environment; rate as either positive (beneficial on the environment), neutral (no impact on the environment), or negative (adverse impact on at a cost to the environment).

Rating	Description
1	Negligible / non-harmful / minimal deterioration (0 – 20%)
2	Minor / potentially harmful / measurable deterioration (20 – 40%)
3	Moderate / harmful / moderate deterioration (40 – 60%)
4	Significant / very harmful / substantial deterioration (60 – 80%)
5	Irreversible / permanent / death (80 – 100%)

Table 4: Assessment and rating severity

Rating	Description
1	Less than 1 month / quickly reversible
2	Less than 1 year / quickly reversible
3	More than 1 year / reversible over time
4	More than 10 years/ reversible over time/ life of project or facility
5	Beyond life of project or facility/ permanent

Table 5: Assessment and rating duration

Rating	Description
1	Within immediate area of the activity
2	Surrounding area within project boundary
3	Beyond project boundary
4	Regional/ Provincial
5	National/ International

Table 6: Assessment and rating extent

Consequence is calculated as the average of the sum of the ratings of severity, duration and extent of the environmental impact.

Determination of Consequence (C)	$(\text{Severity} + \text{Duration} + \text{Extent}) / 3$
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Table 7: Determination of consequence

Rating	Description
1	Less than once a year
2	Once in a year
3	Quarterly
4	Weekly

5	Daily
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Table 8: Assessment and rating of frequency

Rating	Description
1	Almost impossible
2	Unlikely
3	Probable
4	Highly likely
5	Definite

Table 9: Assessment and rating of probability

Likelihood

Likelihood considers the frequency of the activity together with the probability of the environmental impact associated with that activity occurring.

Determination of Likelihood (L) =	$(\text{Frequency} + \text{Probability}) / 2$
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Table 10: Determination of likelihood

Environmental Significance

Environmental significance is the product of the consequence and likelihood values.

Rating	Description
L (1 - 4.9)	Low environmental significance
LM (5 - 9.9)	Low to medium environmental significance
M (10 - 14.99)	Medium environmental significance
MH (15 - 19.9)	Medium to high environmental significance
H (20 - 25)	High environmental significance. Likely to be a fatal flaw

Table 11: Determination of environmental significance

11.1 Impacts Associated with Construction Phase

Potential effects on the environment and their mitigation measures during construction are:

Dust pollution and air quality impacts- These are expected to be minimal as no construction of bulk services is expected to take place. The construction of the houses will have an impact on the surrounding air quality as construction vehicle will be frequenting the site and surrounding areas, however, it is expected to be at a small scale. There is no vegetation on site thus, it will not be necessary to clear the land before construction commences.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	5	5	3	4.33	5	5	5	Negative	9.33(LM)
Mitigation measures: Dust may be generated during the construction/decommissioning phase and might be aggravated when strong winds occur therefore; dust suppression measures should be employed during the construction process if it becomes an issue. Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 40 km/hr should be set for all vehicles travelling over exposed areas. Sand carried in trucks should be covered to avoid loss of materials during transport, especially if material is transported to and from the site.									
Mitigated	2	2	1	1.66	1	2	1.5	Negative	3.16 (L)

Employment Creation (Positive Impact) job creation and economic benefit to the local community since the construction activities associated with the construction of houses will provide employment to the local people.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	1	2	2	1.66	2	5	3.5	Positive	5.16 (LM)
<p>Mitigation measures:</p> <p>Various employment opportunities will be created during all phases of the development, ranging from highly skilled to unskilled. The development is expected to create more than 20 skilled and unskilled jobs. Preference should be given to locals and Namibian Citizens.</p> <p>When recruiting, the responsible contractor should ensure gender equality is taken into account and that both men and women are employed equally.</p> <p>Equity and transparency should be taken into account when hiring and recruiting and that Public Participation I.e. community leaders or community committees should also take part in the recruiting process.</p> <p>In terms of human resource development and capacity building, the contractor must enforce training programs that allows skilled workers to train unskilled workers when necessary, in order for them to enhance their performances and to gain experience necessary for future employment opportunities.</p>									
Mitigated	1	2	5	2.66	3	5	4	Positive	6.66 (LM)

Noise caused by construction activities- Noise levels are expected to rise during the construction phase of the development. Construction activities that can cause noise include construction vehicles, electricity generators, pressure hammers, noise from construction workers and earthmoving equipment which will be utilized during the construction phase. There are houses that are currently constructed in the surrounding area, the disturbance to them will be kept at the minimum as construction will only be allowed during the day when most people are at work. The construction of the houses will disturb residents at a limited extent as the construction activities will be isolated from the existing properties. Therefore, the noise levels that are likely to occur during this phase are not assessed to be only a nuisance to the residents.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	4	5	2	3.66	5	5	5	Negative	8.66 (LM)
Mitigation measures: Construction should be limited to normal working days and office hours from 08h00 to 17h00 and 7:30 – 13:00 on Saturdays. No construction activities may be undertaken on Sunday. Provide ear plugs and ear muffs to staff undertaking the noisy activity or working within close proximity thereof or alternatively, all construction workers should be equipped with ear protection equipment. Noise pollution should be addressed and mitigated at an early stage of construction phase.									
Mitigated	1	1	1	1	1	1	1	Negative	2 (L)

Soil Loss and Erosion- Loss of topsoil during the construction period caused by the excavation of foundations, and earthworks may expose soils to wind and rain and could result in localized erosion.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	4	3	3	3.33	5	5	5	Negative	8.33 (LM)
Mitigation measures: No work is to be conducted within 30 metres of all drainage lines; Topsoil should only be exposed for minimal periods of time and adequately stockpiled to prevent the topsoil loss and run-off. Planting more indigenous trees on public open spaces should be carried out. Reuse topsoil to rehabilitate disturbed areas.									
Mitigated	1	1	1	1	2	2	2	Negative	3 (L)

Removal and use of local flora for firewood- collection of local flora for firewood may lead to the removal of the protected flora due to the lack of knowledge of the types of protected flora.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	2	3	3	2.66	4	5	4.5	Negative	7.16 (LM)
Mitigation measures: No cutting down of trees for firewood. Utilise commercially sold wood or other sources of energy. Use electricity and gas in the construction camps for cooking Training of contractors on environmental awareness and the importance of flora.									
Mitigated	1	1	1	1	1	2	1.5	Negative	2.5 (L)

Health and Safety- Health and Safety Regulations pertaining to personal protective clothing, first aid kits being available on site, warning signs, etc. should be adhered to. During construction phase, there is a possibility of injuries to occur if no measures are taken into consideration.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	5	5	4	4.66	5	5	5	Negative	9.66 (LM)
<p>Mitigation measures:</p> <p>A health and safety plan is to be developed and implemented as soon as land clearing commences.</p> <p>During construction, earthmoving equipment will be used on site, this increases the possibility of injuries. Thus, the responsible contractor must ensure that all staff members are briefed about the potential risks of injuries on site.</p> <p>Ensure the appointment of a Safety Officer to continuously monitor the safety conditions during construction.</p> <p>The contractor should further ensure that adequate emergency facilities are available on site.</p> <p>The construction staff handling chemicals or hazardous materials must be trained in the use of these materials and the environmental, health and safety consequences if not properly handled.</p> <p>All construction staff must have the appropriate PPE.</p>									
Mitigated	2	1	2	1.66	1	2	1.5	Negative	3.16 (L)

Traffic - Potential impact due to increase in traffic caused by the construction activities on site. Construction related activities are expected to have a minimal impact on the movement of traffic along the road. Accidents might occur if unqualified drivers are employed on the proposed development or appropriate signs are not displayed.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	5	5	3	4.33	5	3	4	Positive	8.33 (LM)
<p>Mitigation measures:</p> <p>No diversion of traffic or closure of the road is expected.</p> <p>Traffic signs indicating that there is construction work in the area should be displayed in the adjacent street.</p> <p>Traffic signallers and controllers should be employed to regulate traffic of construction vehicles.</p>									

The responsible contractor must ensure that all drivers employed on site are licenced for the type of vehicle they operate and that they have experience in driving those types of vehicles.

The contractor must ensure that there is always a supervisor on site to ensure that no driver operates construction vehicle while under the influence of alcohol or narcotics.

The construction vehicle's speed limit should be 40km/h and must consider other road users.

Mitigated	2	1	1	1.33	1	2	1.5	Positive	2.83 (L)
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Waste Impacts- The construction phase of the development is likely to generate waste from the builder's rubble, general construction refuse and minor hazardous waste including paint tins, cleaning acids, asphalt's and oils. The development could therefore impact on the environment by generating solid waste pollution.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	5	5	3	4.33	5	5	5	Negative	8 (M)

Mitigation measures:

Ensure that no excavated soil, refuse or building rubble generated on site are placed or disposed of in the surrounding environment. Contaminated waste in the form of soil, litter, building rubble and other material must be disposed of at an appropriate disposal site. The contractor and developer should ensure that all the waste generated by the development is appropriately disposed of at the recommended waste disposal sites.

The proponent and contractor should identify an appropriate area that is suitable to be used as a temporary disposal site. Strictly, no burning of waste on site or at the disposal site is allowed as it possess environmental and public health impacts; No construction waste should enter the surrounding environment.

To avoid contaminating the soil and underground ecosystem, wastewater should not be disposed on open soil onsite.

Mitigated	1	1	1	1	4	2	3	Negative	4 (L)
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Surface water contamination (Nearby water ponds) – Leakages from equipment, accidents from fuel tankers may occur during the construction phase and the waste can end up the nearby water ponds during the rainy season.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/Significance
Unmitigated	5	5	5	5	5	4	5	Negative	9.5 (LM)
<p>Mitigation measures:</p> <p>The construction vehicles are not allowed to be parked within 20-meters of the banks of the water ponds after working hours.</p> <p>The construction site camp should be constructed more than 20-meters from the banks of the water pond.</p> <p>No dumping of solid or liquid waste in standing water.</p> <p>The temporary waste disposal site should be constructed at least 20-meters away from standing water.</p> <p>No blockage of any kind that will prevent the storm water from draining naturally is allowed along the adjacent streets.</p>									
Mitigated	3	1	1	1.66	5	3	4	Negative	5.66 (LM)

Groundwater Contamination – Leakages from equipment and machinery might occur during the construction phase or mixing of cement and the use of ablution facilities will lead to the contamination of the groundwater.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/Significance
Unmitigated	5	5	5	5	5	4	5	Negative	9.5 (LM)
<p>Mitigation measures:</p> <p>Chemicals used during construction e.g. paint and paint remover are a risk. Care must be taken to avoid contamination of soil and groundwater.</p> <p>Ensure no cement or cement containers should be left lying around.</p> <p>Mixing of cement should be done at specifically selected areas on mortar boards or similar structures to contain surface run-off.</p> <p>Proper ablution facilities should be installed at the construction site and at the camping site and arrangements to be made with the Town Council.</p> <p>The contractor shall ensure that there is no spillage when the ablution facilities are cleaned or during normal operation and that the contents are properly disposed of.</p> <p>Cleaning of cement mixing equipment should be done on proper cleaning trays.</p>									

Prevent spillage of contaminants or of water potentially contaminated by cement, chemicals, sewage Fuel (diesel and petrol) and oil containers shall be in good condition and placed in a bunded area or on plastic sheeting covered with sand (temporary bunding).									
Mitigated	3	1	1	1.66	5	3	4	Negative	5.66 (LM)

Increased spread of communicable diseases- migrant workers with HIV/AIDS or Covid -19 may infect local people leading to a high rate of HIV/AIDS, covid-19 and other communicable diseases.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	5	5	5	5	5	5	5	Negative	10(M)
Mitigation measures: The spending power of locals and expatriates working for the developer and/or its contractors are likely to increase, and this might be a perfect opportunity for sex workers to explore. Migrant labourers from other regions and expatriates are normally vulnerable and may use the services rendered by the sex workers. A key initiative should be to educate workers. See section 9 (Socio-economic Environment) for details on region statistics. External construction workers should be housed in secure camp and are to abide by rules of the EMP to prevent public disruption (i.e. Spread of HIV/AIDS, crime, public disturbance). Contractors should be encouraged to source labour from surrounding areas to prevent the spread of HIV/AIDS and Covid – 19 from external workers. Condoms as a contraceptive should be distributed to construction employees. All government protocols on Covid – 19 (i.e., wearing masks and social distancing) should be practiced on site.									
Mitigated	2	1	4	2.33	2	3	2.5	Negative	4.8(L)

Heritage Impacts – There are no known heritage sites or artefacts that were identified on the site. However, there is a potential damage or destruction to undiscovered artefacts in the area

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	5	5	5	5	2	1	1.5	Negative	6.5 (LM)
Mitigation measures: There were no sites or objects of archaeological finds, Graves, historical and cultural significance identified, however, if during construction any possible finds are made, the operations must be halted and a qualified archaeologist be contacted for an assessment of the findings. Work may only commence once approval is given from the heritage agency. No specific mitigation measures are required at the moment.									
Mitigated	1	1	1	1	1	2	1.5	Negative	2.5 (L)

Ecological Impacts: No known conservation worthy vegetation are located on the site.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	1	1	1	1	1	1	1	Negative	1 (L)
Mitigation measures: There is no vegetation on site and no known conservation worthy vegetation are located on the site.									
Mitigated	1	1	1	1	1	1	1	Negative	1 (L)

11.2 Impacts Associated with Operational Phase

Storm water usually runs off the area and flow into the water bodies without any kind of treatment. This can pollute the water bodies like creeks, lakes and rivers and have adverse effects on their chemical as well as biological nature. From this, the house plans must include storm water drainage to accommodate the storm water during the rainy season.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	4	5	3	4	2	5	3.5	Negative	7.5 (LM)
<p>Mitigation measures:</p> <p>Storm water drains to be constructed along the Erf boundaries and be channelled through the street storm water networks, natural water courses, excess storm water to be collected for consumption and recreational use.</p> <p>Storm water will be collected through network of storm drains from gardens, parking areas, paved and unpaved areas, and roadways. The storm water drainage system should have the capacity to prevent flooding of the site and surrounding areas.</p> <p>All buildings to be constructed above the 50-year flood line to avoid flooding of properties.</p>									
Mitigated	1	1	2	1.33	1	2	1.5	Negative	2.83 (L)

Contribution to housing - The project will contribute to the housing provision efforts of the Ondangwa Town Council.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	1	1	1	2	5	5	5	Positive	7 (LM)
Mitigation measures: This project will contribute to the housing provision efforts of Ondangwa Town Council by providing houses to the masses. The project will improve job creation opportunities for the locals as the developer is from the town. Residents to be provided with all the basic amenities and utilities required by the community for them to live in a quality life style.									
Mitigated	1	2	1	1.33	5	3	4	Positive	5.33 (LM)

Improved aesthetic look of the area- The development is essential to improve the aesthetics of the area while turning it into an environmentally friendly settlement with improved infrastructure services. This potential impact of the infrastructure on the economic structure is of a positive nature. The construction should be completed without delays to avoid the site becoming an eyesore;

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	2	2	2	2	1	1	1	Positive	3 (L)
Mitigation measures: No mitigation required because it's a positive impact. However, the developer should create awareness among the residents about energy conservation and other resources as well as to implement measures to prevent or minimize any adverse effects on the environment. This project should provide a quality of life that can be expected in an urban area in relation to the utilities, convenience, amenities and security. This project will provide quality residential accommodation to the previously disadvantaged youths from the middle to low income segments of the town.									
Mitigated	1	5	4	3.33	3	5	4	Positive	7.33 (LM)

Increased employment opportunities- the construction of houses can increase the opportunities of employment for locals.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	2	3	5	3.33	3	3	3	Positive	6.33 (LM)
Mitigation measures: The principles of gender equality, maximising local employment should be implemented in the provision of jobs on site. Priority should be given to local people when recruiting, therefore unskilled labourers from the local community should be employed. Jobs for security personnel to patrol the construction site and the surrounding areas will also be created. Equity, transparency, should be taken into account when hiring and recruiting and that the public be included in the recruitment process.									
Mitigated	1	4	4	3	2	5	4	Positive	6.5 (LM)

Traffic - Potential impact due to increase in traffic because the new inhabitants that will settle in the new houses.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	5	5	3	4.33	5	3	4	Positive	8.33 (LM)
Mitigation measures: Sidewalks for pedestrians should be provided along the new properties. Appropriate road signs and markings should be provided in the adjacent streets. Signs should be provided at intersections particularly at higher order intersections. Speed bumps should be installed to control the speed of traffic. Traffic circles to be utilized at high intensity intersections.									
Mitigated	2	1	1	1.33	1	2	1.5	Positive	2.83 (L)

Waste management- the houses will require a more formalized form of waste management and Ondangwa Town Council should be responsible for this.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	5	3	3	3.66	5	5	5	Negative	8.66 (LM)
Mitigation measures: During the operations phase, the Ondangwa Town Council be responsible for waste management. Ondangwa Town Council to incorporate the new development into their formal waste collection strategy and that the waste is to be collected regularly and to be disposed of at an authorized dumping or disposal site. Illegal dumping of waste in any form is prohibited.									
Mitigated	1	1	1	1	1	2	1.5	Negative	2.5 (L)

Land use -The proposed development will result in a slight change in land use as a portion of the public open space is to be used for residential purposes.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	1	5	4	3.33	1	5	3	Positive	6.33 (LM)
Mitigation measures: The change in land use will contribute to the efficient use of land in Ondangwa by converting unutilized, non-functional public open spaces into residential properties.									
Mitigated	1	2	1	1.33	5	3	4	Positive	5.32 (LM)

11.5 Impacts Associated with Decommissioning Phase

At this point, it is difficult to visualise and assess the decommissioning phase, although the procedures for decommissioning phase should be the same as for the construction phase. However, there will be possible pollution during the decommissioning phase of the project. Furthermore, during the decommissioning phase, an Environmental Impact Assessment (EIA) will be required and the disposal of decommissioned equipment and hazardous contaminated materials should be disposed following the disposal of hazardous material legislation.

12. CONCLUSIONS

In conclusion, Lebeus Construction and Plumbing CC has been allocated proposed Erven A-D of Erf 3571, Ondangwa Extension 16 by Ondangwa Town Council in order to develop and construct 4 single residential properties. The proposed Erven are located in Extension 16, Ondangwa Town in Oshana Region in north central Namibia. The Ondangwa Town Council resolved to allocate the land in order to help with the provision of housing in the northern town and to reduce the housing backlog of the town.

Proposed Erven A-D/3571 are currently zoned as a “Public Open Space” and in order for the construction of houses to commence, the statutory town planning and environmental management procedure for the permanent closure of proposed Erven A-D of Erf 3571, Ondangwa Extension 16 as a “Public Open Space” has to be carried out.

Nghivelwa Planning Consultants, a Town and Regional Planning and Environmental Management Consultancy firm has been appointed to conduct an Environmental Impact Assessment and Environmental Management Plan (EMP) for the permanent closure of proposed Erven A-D of Erf 3571 as a “Public Open Space” and subsequent rezoning to “Single Residential”. The Environmental Impact Assessment has been conducted to meet the requirements of the Namibia’s Environmental Management Act (No. 7 of 2007).

We further conclude that the proposed development has more positive than negative impacts to the natural environment and will provide much needed development in the form of housing to the residents of Ondangwa and economic opportunities for SMEs like Lebeus Construction and Plumbing CC. The development will complement the efforts of the Government of the Republic of Namibia and help with the housing backlog that is being experienced in the country.

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