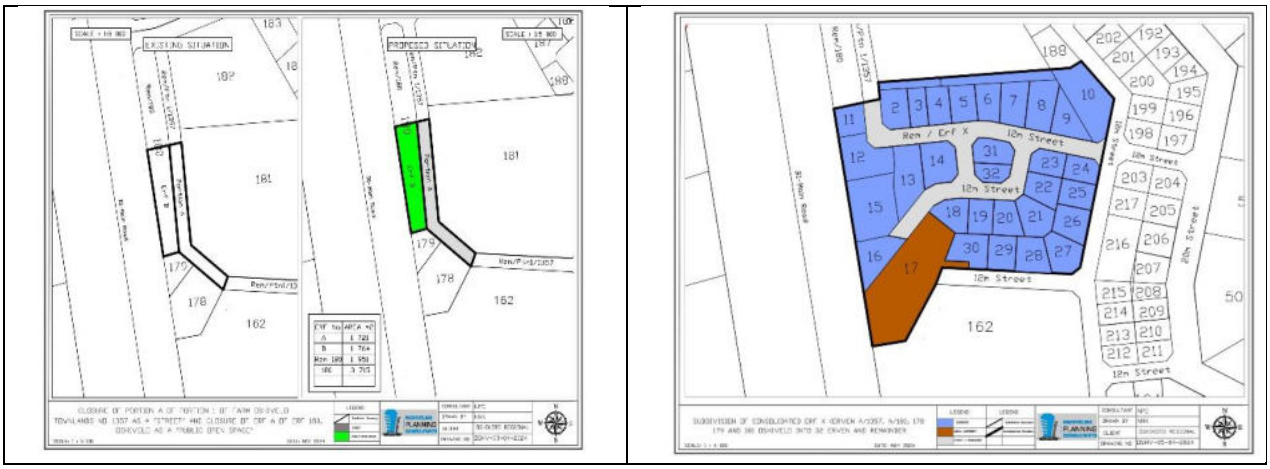
ENVIRONMENTAL IMPACT ASSESSMENT SCOPING REPORT

FOR THE PERMANENT CLOSURE OF PROPOSED PORTION A OF PORTION 1 OF THE FARM OSHIVELO TOWNLANDS NO. 1357 AS A "STREET", CLOSURE OF PROPOSED ERF B OF ERF 180, OSHIVELO AS A "PUBLIC OPEN SPACE", CONSOLIDATION WITH ERF 181, OSHIVELO AND SUBSEQUENT SUBDIVISION AND THE CREATION OF "STREETS".



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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
ORC	Oshikoto Regional Council

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1. INTRODUCTION

1.1 Project Overview

The Oshikoto Regional Council has resolved to develop a formalized business area in Oshivelo Settlement in order to stimulate economic growth and change the quality of living for the settlement's inhabitants. Thus, the Regional Council identified the already existing businesses that are located on Erven 180, 181 and Portion A of Portion 1 of Oshivelo Townlands No. 1357, Oshivelo to be the subject of this formalization. Oshivelo Settlement is located in Oshikoto Region, between Tsumeb and Omuthiya in the north central part of Namibia

The Remainder Portion 1 of the Farm Oshivelo Townlands No. 1357 is reserved for "Street" purposes, Erf 180, Oshivelo is reserved for "Public Open Space" purposes while Erf 181, Oshivelo is zoned for "Business" purposes. In order for the Oshikoto Regional Council to commence with the formalization of the business area, the statutory town planning and environmental management procedure for the permanent closure of proposed Portion A/1/1357 as a "Street", permanently closure of Erf B of Erf 180, Oshivelo as a "Public Open Space", subsequently consolidation of the proposed erven with Erf 181, Oshivelo and subdivision the consolidated erf have 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 Portion A of the Remainder of Portion 1 of the Farm Oshivelo Townlands No. 1357 as a "Street", permanent closure of Erf B of Erf 180, Oshivelo as a "Public Open Space", Consolidate Portion A/1/1357. Erf B/180 and Erf 181, Oshivelo and subsequently subdivide the consolidated erf into ±32 Erven and Remainder and the creation of streets. 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 public open spaces, streets and the creation of streets for new development are listed activities that cannot be undertaken without an Environmental Clearance Certificate. Therefore, as part of the commissioning process an Environmental Impact Assessment (EIA) is required. Thus, the Oshikoto Regional Council appointed 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 References (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 Scoping Report on behalf of Oshikoto Regional Council. As the project proponent, the Oshikoto Regional Council 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) a6cknowledges 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
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Ndati-Onawa Nangula Ndakunda	Master of Science in Integrated Environmental Management and Sustainable Development, BSc (Honors) Geohydrology	Geoscience Council of Namibia, Environmental Scientist (EAPAN Member)

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, permanent closure of a street and creation of a street; to investigate the potential impacts on the social and natural environment due to the closure and construction of the new street:

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 identified and predicted for a particular activity, appropriate mitigation measures should 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 19th and 26th April 2024. The public and interested and affected parties were invited to provide comments to the EIA and no interested or affected party registered any comments. A public meeting about the proposed development and its potential impacts to the environment was carried on site on the 2nd of May 2024.

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 Affords protection to biodiversity	Ensure these principles are enshrined in the documentation of the project
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 and creation of streets 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 permanent closure and creation of streets 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	Prohibits the removal of any vegetation within 100 m from a watercourse	Even though the Directorate of Forestry has no jurisdiction

Conservation Ordinance 4 of 1975	(Forestry Act S22 (1)). Prohibits the removal of and transport of various protected plant species.	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 during the construction phase of the project.
Health and Safety Regulations GN 156/1997 (GG 1617	Details various requirements regarding health and safety of labourers.	Protection of human health, avoid development at areas that can negatively 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, streets and subdivision applications (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 and streets in Local Authority Areas.	The public must be informed on the permanent closure of public open spaces and streets.

Table 2: Relevant legislation

4. NEED AND DESIRABILITY OF THE PROPOSED PROJECT

The Oshikoto Regional Council derives its mandate from the Regional Councils Act, 22 of 1992 as amended. Amongst its many duties towards the provision of municipal services to its residents who resides in its settlements is the provision of affordable business land to stimulate economic growth. Oshivelo Settlement has seen a significant increase in business activities over the years. This growth can be attributed to the increase in the settlement's population seeking employment and other economic benefits due to the declaration of Oshivelo as a settlement.

The influx of people to Oshivelo Settlement has created demand for goods and services that intern motivated business people from around Namibia to set up their businesses in the settlement to cater to the demand. These businesses are constructed on Erf 178, 179, 180, 181 and on the adjacent streets of Oshivelo Proper and are not constructed according to the approved plans of the township.

Thus, instead of evicting the illegal businesses, the Oshikoto Regional Council resolved to formalize these businesses to avoid an economic catastrophe for the settlement and to empower business owners and settlement dwellers alike. Therefore, the closure of the part of a public open space situated on Erf 180 and a part of the street between Erf 180 and 181 and the consolidation to form a consolidated erf that will subsequently be subdivided and create streets for the formalization of existing businesses in Oshivelo is necessary.

The business erven that are to be created will be allocated to the owners of the business buildings that currently exist on the subject properties.

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 1st of May 2024 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 the Oshikoto Regional 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 Closure of proposed Portion A of Portion 1 of the Farm Oshivelo Townlands No. 1357 as a “Street”, Closure of proposed Erf B of Erf 180, Oshivelo as a “Public Open Space” to be consolidated with Erven 178, 179 and 180, Oshivelo and subsequent subdivision of the Consolidated Erf X into ±31 Erven and Remainder and the creation of streets. The activity involves the formalization of already constructed businesses that are situated on the newly created, closed, consolidated and subdivided 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. Erven 180 and 181, Oshivelo are already connected to the municipal services of Oshivelo, however additional municipal services will have to be constructed in the new street to be created. The erven will obtain access from the adjacent street that is already constructed and from the new street that is to be constructed.

All new erven to be created will be connected to the existing bulk services that will be extended to accommodate the new erven and the water-borne sewage will be connected to the sewerage reticulation system of Oshivelo, the harmful residue that is created will be transported to the waste disposal site as to be provided by the Oshikoto Regional Council. The land is currently already 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

The Remainder of Portion 1 of Farm Oshivelo Townlands No. 1357, Erven 180 and 181, Oshivelo are currently owned by the Oshikoto Regional Council. The Consolidated Erf currently measure ±1 26 581m² in extent. The property is located along the B1 main road in Oshivelo Proper, Oshivelo Settlement, Oshivelo Constituency of Oshikoto Region as shown in Figure 1 below. The site is currently developed with existing business buildings. The GPS coordinates of the location of the proposed project site are: 18° 36.984'S, 17° 10.027'E.

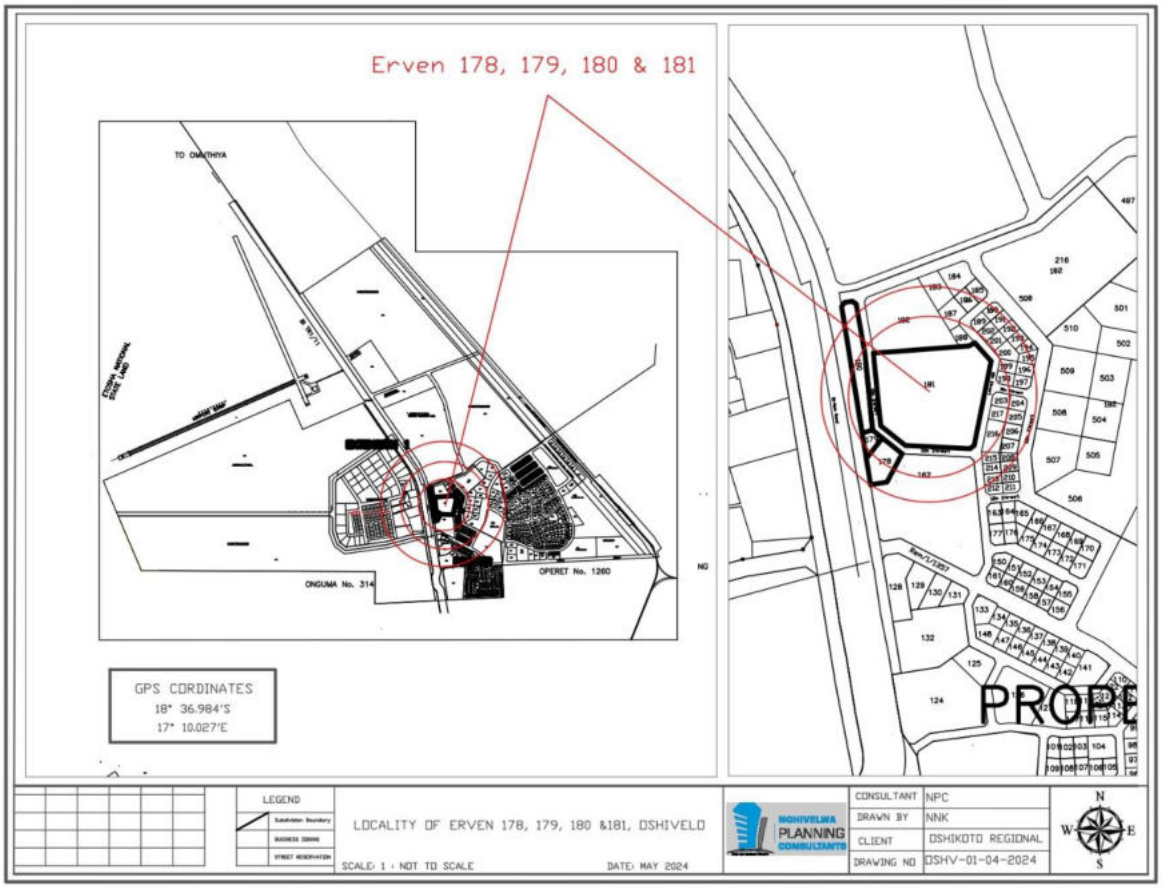

Figure 1: Locality plan for Consolidated Erf X

6.2 Ownership

The Remainder of Portion 1 of Farm Oshivelo Townlands No. 1357, Erven 180 and 181, Oshivelo are currently legally owned by the Oshikoto Regional Council. However, there are numerous businesses that are already constructed on the properties and it is the regional council's plan to allocate the new erven to be created to the owners of these properties. Thus, Oshikoto Regional Council will be managing the development during the construction phase and the operational phases. The proposed erven will then be allocated to private owners.

6.3 Description of the site

- The site lies on a flat surface that characterizes the topography of Oshivelo Settlement.
- Although no characteristics of ground slope instability were observed on site, there is a possibility of storm water flooding along the western edge of the property during abnormal heavy rain seasons due to its proximity to the main road.
- There was no ground surface water observed during the site investigation as this was done during the dry season.

- 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 Oshivelo

6.5 Description of the proposed project

The Oshikoto Regional Council has resolved to formalize the Oshivelo Business Area situated on Erven 178, 179, 180 and 181, Oshivelo and on a portion a street. The formalization requires these erven to be consolidated, closed as public open spaces and streets and subsequently be rezoned and subdivided into individual business erven in order to accommodate the business buildings that are already constructed on the properties. The goal of the development is to stimulate economic activity in Oshivelo Settlements and to offer security of land tenure to its inhabitants.

6.6 Proposed Project Activities

The proposed development entails the closure of proposed Portion A of the Remainder of Portion 1 of the Farm Oshivelo Townlands No. 1357 (Street) as a "Street", the closure of the proposed Erf B of Erf 180, Oshivelo as a "Public Open Space", the subsequent consolidation with Erven 178, 179 and 181, Oshivelo and subdivision of the Consolidated Erf and the creation of streets. The subdivision and closure plans are shown in figures 3 and 4, below.

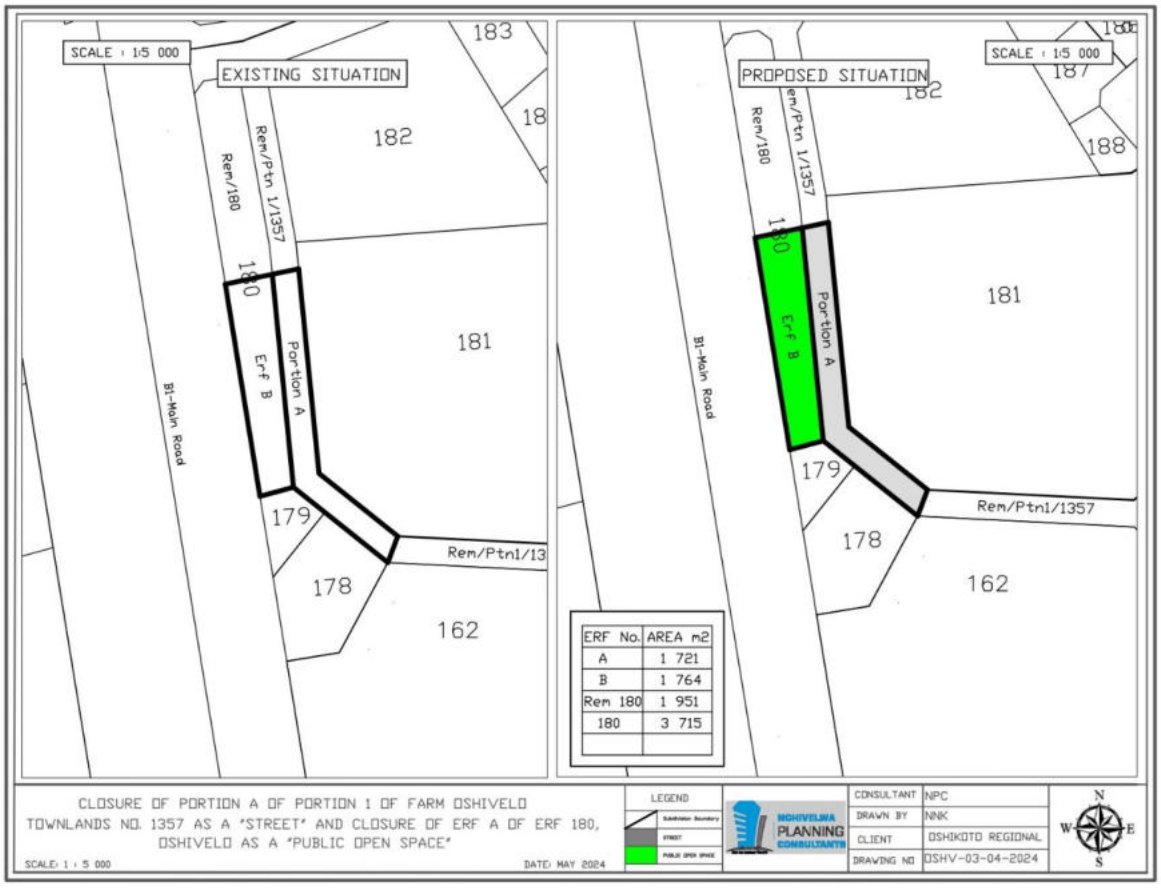

Figure 3: Closure Plan of Erven A/1/1357 & Erf B/180, Oshivelo

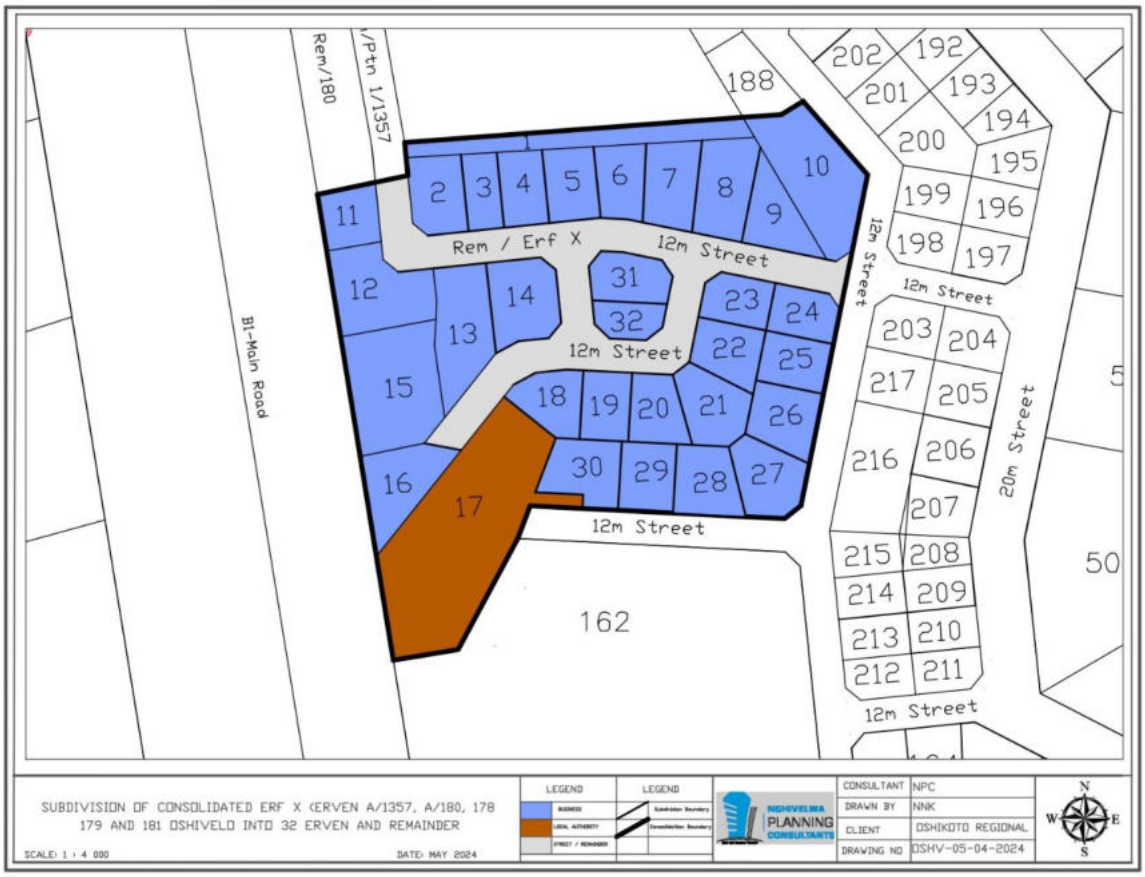

Figure 4: Subdivision plan for Consolidated Erf X

6.7 Engineering Services

The proponent is proposing to create 32 new erven upon the completion of the town planning and environmental management exercise for the formalization of business buildings constructed on each of the new erven created. The Oshikoto Regional Council will extend the existing engineering services to cater for the new erven to be created.

6.7.1 Bulk Infrastructure

Since the existing bulk infrastructure on the subject properties is not formalized, the proponent (Oshikoto Regional Council) will have to constructed additional bulk infrastructure in order to elevate it to the standard required for the provision of municipal bilk infrastructure level.

a) Water

The existing bulk water infrastructure should be extended and rerouted according to the new street layout in order for the Oshikoto Regional Council to be able to accommodate the proposed development.

b) Sewerage

The existing sewer reticulation system of Oshivelo Proper is not sufficient for the proposed development and additional construction of bulk sewer water reticulation is should take place in order to accommodate the proposed development.

c) Electricity

The proposed erven will get electricity from the already constructed electrical network of Oshivelo Proper as the existing buildings are already connected to the existing electrical network. However, the proponent (Oshikoto Regional Council) should construct additional electrical services to reroute them to align with the new street network.

d) Storm water

There is currently no storm water drainage system constructed on the property as storm water drainage is not a problem at the moment. In future the storm water will be channeled along the streets of Oshivelo Proper and additional water drainage should be constructed to channel water towards the back of the new erven if it is necessary.

e) Waste Produced

The Oshikoto Regional Council already has a waste disposal plan for Oshivelo Settlement and additional waste to be produced due to the construction of the additional services will be disposed of at an approved waste disposal site.

f) Roads

The proponent (Oshikoto Regional Council) should construct new streets to provide access to the new erven to be created. Some of the already constructed properties should be demolished in order to make way for the new development.

6.7.2 Blasting

No blasting is to be carried out during construction as the soil in the area is not rocky and does not require blasting during the construction of municipal services such as streets, storm water drainage, sewerage and electricity.

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 street, ditches for sewerage, storm water drainage and water pipes 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, the Oshikoto Regional 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;
- Maintenance 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 Climatic conditions

The climatic condition of Oshivelo Settlement is considered to be a local steppe climate. During the year, Oshivelo receives little rainfall. The Köpper-Geiger climate classified is BSh, the average annual temperature is 25.64ºC. The average rainfall in Oshivelo is 469mm. Oshikoto Region has a negative water balance due to the dry conditions and high evaporation rate. The climate of the region is described as a semi-arid with an average annual rainfall ranging between 400mm to 500mm per annum.

The summer season of the region is described as hot with a maximum temperature between 30ºC and 35ºC during the hottest months and coldest winter temperatures are around 2ºC to 6ºC. The mean evaporation figure for the region lies from 2600mm to 280mm per annum.

7.2 Geology, Topography and drainage

According to NDS, the topography of the Oshikoto region is predominantly flat, gradually descending from north south towards the Etosha pan. In this region, there are no perennial rivers, but at least 3 seasonal rivers of which some forms part of the Cuvelai Drainage system from Angola in the North to Etosha Pan in the South of the region.

7.3 Hydrology

The quality of the groundwater within the region is variable due to the fact that some boreholes provide a good yield at the depths of 10m and 50m. The water quality in the region is varying from drinkable to highly saline water. With Ephemeral River in the region, the water source in the ephemeral can be accessed even by hand-dug pit. The interconnected Ephemeral pans and shallow river courses known as Oshanas are the reminders of the proto-Kunene and Cuvelai systems which are emptied into the inland pan known as the Etosha pan.

The potable water in the region is supplied in piped system from the Calueque Dam in Angola, on the Kunene River, to the major urban settlements within the region. This dam does not only provide water to the Oshikoto Region, it also provides water to the Oshana, Omusati and Ohangwena

Regions. The dam also provides water to the citizens of Angola that are residing in the south western part of that country. The Oshivelo Settlement however, gets its portable water that originates from underground aquifers in the area.

7.4 Vegetation

Oshivelo is located 30km west of Etosha pan and thus, there is a variety of vegetation including indigenous trees that are situated in and around the settlement. However, due to human development that has already taken place, there is currently not vegetation that was observed on site.

7.5 Soils

Oshikoto Region is covered by the Kalahari Sandveld which is mainly made up of an Aeolian sand mantle about 50m thick, covering calcretes and sediments. The high evaporation rate in the region makes the soils in the oshanas to be very saline with sodium and Gypsum found in these soils making the soils not suitable for agricultural projects. However, there are clay soils found in Oshivelo that enables for agricultural activities in the area.

7.6 Fauna

The Kalahari woodland in the region is mainly dominated by species such as Rhodesian teak, kiaat, mangetti and silver leafed tennianalia. The Ekata and Cuvelai Systems are more ecologically sensitive and support a diverse but depressed fauna as well as fish which are introduced to the system during good rainy years. During rainy season, the bird life picks up in the western part of the Region. However, other places get high numbers of individual species such as Abdim's stork and Flamingo rather than a wide variety of species.

During the site inspection, community's cattle, avifauna and small burrowing species were observed in the area. The surrounding area is currently used for grazing and other agricultural purposes (livestock enclosures). However, most of the mahangu fields have been informally demarcated into smaller plots that locals sell to prospective house owners. The site visit has revealed that it is unnecessary to appoint a specialist to assess the ecology of the area.

7.7 Flora

The proposed site was visited on the 1st of May 2024 and examined for any possible traces of red data or endangered species. It was observed that the proposed site is free from vegetation due to human activities. Thus, no red data or endangered species were noted / recorded during the site visit, therefore it was decided that it is unnecessary to include an ecological specialist study in the report.

8. SOCIO-ECONOMIC ENVIRONMENT

8.1 Demographics

According to the Namibia 2023 Population and Housing Census the total population in Oshikoto Region was 257 302 (NPC, 2023). The population density is 6.653 persons per km^2 and the Human Poverty index (HPI) is 0.636 compared to National HPI of 20.35. Eighty-six (86 %) percent of the population lives in rural areas and fourteen (14%) percent live in urban areas. Life expectancy is 62 years for females and 52 years in males, resulting in most houses being head by females at 55% and the remainder by males at 45%. The population was divided into 20988, with an average size of 3.6 persons. Most (96%) of the households residing within the Oshikoto Region speaking Oshiwambo (NPC, 2011).

According to the Namibia 2011 Population and Housing Census, Oshivelo Settlement had a population of 1 930 residents and has a total area of 8.98km².

8.2 Economic activities

There has been immense commercial and administrative growth in Oshikoto Region. Oshikoto is commonly an agricultural region, with both crop and livestock farming, with the sector employing more than 50% of economic active population. The trade and service sectors in the urban areas provide employment outside the agricultural sector while manufacturing occurs only on a small scale. However, the main economic activities are centered on agriculture and retail trade, public services such as cuca shops, open air butcheries, and mechanical land panel beating workshops, shoemakers, woodcarving and leather works and mining in the south.

There are popular Open Markets to be found in most towns and villages, while many traders find this an excellent facility to meet their clientele. Modern super markets, restaurants, general shopping facilities, pharmacies, private medical facilities schools and other support services are also available in the Region. The proclamation of settlements, which is a priority with the Regional Council, encourages private entrepreneurs to invest in the region. Therefore, the Oshikoto Regional Council is formalizing the subject properties to facilitate development and to assist small farmers in obtaining access to markets to sell agriculture produce on the open market.

8.3 Education Profile

The Oshikoto Region is well placed with regards to academic rates in Namibia. According to (EMIS, 2012) there are 140 Primary schools, 105 Combines school and 28 Secondary schools in total. The percentage literacy rates for persons older than 15 years in the Oshikoto Region is 88% compared with that of Namibia which is 81%. There are 274 schools altogether, where 257 are state owned and 17 privately owned and other schools there 1 owned by the state. From the 86,430

learners 84,555 are enrolled in public schools while the remaining 1,875 attend private schools. Only 94 of all 3,632 teachers in the Oshikoto Region are without training. The Oshikoto Region is known to yield exceptional results when it comes to academic ratings in the country, most schools offer quality education to the young ones as from primary to high schools. The Region has several tertiary institutions (UNAM and NUST) which provides knowledge and skills in terms of agriculture.

8.4 Employment Opportunities

In the year 2011, 58% of the population older than 15 years were employed and 49% unemployed. The population outside the labor force comprised of students, homemakers and retired or old age persons. The population of Oshivelo shows that the median age is 20.6 years, this means that there are more young people of working in the settlement that are unemployed. A formal settlement will encourage investors to set up businesses in the settlement, it will encourage government and non-governmental organizations to set up bases in the settlement and that will overall increase economic activity and employment within the settlement.

8.5 Income

According to the 2011 censes, the subsistence farming and labour migration were considered the primary livelihood sources of many households. The majority of the employed population (59.7%) are employed in the formal sector making Wages and Salaries 25% the main source of income in the region. Pensions 31%, Non-farming business 10%, Cash Remittance 5% and farming 22% is the means of survival for the rest of the population.

8.6 Health Profile

Oshikoto region has 3 district hospitals, (Oniipa, Omuthiya and Tsumeb) six health centers and 40 clinics and 124 Outreach points. Namibia is one of the ten worst affected countries in terms of the HIV/AIDS epidemic. According to the 2013 Namibia Demographic and Health Survey (NDHS), in Namibia, it is estimated that 14% of adults aged 15-49 and 16.4 % of those ages 50-64 are infected with HIV. Furthermore, the 2014 National HIV Sentinel Survey (NHSS) estimated that amongst pregnant women attending Antenatal Clinics (ANC) in Namibia, the overall prevalence was 16.9% which shows a reduction from 18% in 2012 (NARPR. 2015).

The HIV Prevalence rate among men in Namibia age 15-49 was 10.9%. According to the 2013 (NDHS.2013), the HIV/AIDS prevalence rate among adult pregnant women in the Oshikoto region is 17.4%. The 2013-2014 HIV Prevalence rate survey report shows that the HIV Prevalence rate among women age 15-49 in Oshikoto Region was estimated to be 21.9% (NARPR. 2015).

Oshivelo settlement has one health center, the health center has since been expanded and the Directorate of Health and Social Services has plans to upgrade the health center into a fully-fledged hospital.

8.7 Immigration

The new business area will attract many immigrants from other settlements and especially from the surrounding villages. Employment and business opportunities will be the main reason thereof. This might cause discomfort to the local community currently residing in the area as food prices might increase, cuca-shops will have more customers leading to increased stress and conflict over time and leading to the lack of housing resulting in the increased informal settlements.

8.8 Acquisition

Jobs emanating from the construction and operation of the proposed development will be outsourced to small medium enterprises in the area and the companies that are awarded bids to construct the settlement infrastructure will be encouraged to use as much manual labour as possible in order to benefit the locals.

8.9 Tourism

The tourism industry is generally good in Oshivelo area due to its close proximity to the famous Etosha National Park. The establishment of accommodation establishments north of the park has turned Oshivelo into an important transit node for tourists. Being one of many animal disease control check points along the infamous red line that cuts off northern Namibia from Southern and Central Namibia, Oshivelo is an important transit points for travelers in transit from the more densely populated northern Namibia to the resource rich southern Namibia.

Oshikoto Region is well connected by roads whereby all tourists can drive through. It can be easily reached from points such Ondangwa, Tsumeb, Eenhana and Okongo. Major roads such as B1 Main Road that that is the main arterial road in the Country passes through the region.

8.10 Amenities

A number of amenities are offered to the residents of the Oshikoto Region. As mentioned in the health profile section, there are three district hospitals, (Onandjokwe, Omuthiya and Tsumeb) six health centers and 40 clinics and 124 Outreach points health care facilities in the region, plus schools, different denomination churches such as the ELCIN, Roman Catholic Church, Anglican Church and many more, modern banking and financial facilities such as; First National Bank, Standard Bank, Bank Windhoek and Nedbank and Nampost all available in Oniipa, Onyaanya, Omuthiya and Tsumeb as well ATM facilities also available in the region.

Apart from Nampost, and a mini ATM at one of the supermarkets, there are currently no banking facilities, guest houses, etc. in Oshivelo. The idea to establish a business area in the settlement is to motivate investors from these sectors to invest in Oshivelo and facilitate development in the settlement. The Oshikoto Regional Council is thus acting as an enabler in this regard. Other services like schools, clinics, churches etc. are available in the settlement but also needs to be expanded.

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 there are already business buildings constructed on the proposed development site and it will be costly to relocate these businesses to another location.

Due to the fact that the proposed portion of land is already earmarked for the development and it will be next to impossible to relocate the existing businesses, there are no other alternatives to this development, Alternative 1, is the only site that is identified for the formalization and development of Oshivelo Business Area. 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 Oshikoto Regional Council;
- The Oshikoto Regional 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 stimulate the business activities in Oshivelo.
- The development will promote orderly and sustainable development in the town.
- The Oshikoto Regional Council cannot afford to compensate or relocate the existing properties.

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 street, the public open space and subsequent rezoning, consolidation and subdivision with the creation of a street in order to formalize and develop Oshivelo business area to stimulate economic activity in the settlement will not go ahead.

Should the proposed project not take place, Oshikoto Regional Council will not be able to provide security of land tenure to its residents, it will not stimulate its economy and this can have long term negative effects on the social and economic 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 Oshivelo Settlement;
- The community will continue to be unemployed;
- Investment in the settlement 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 settlement 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 where invited to Comment:

- Oshikoto Regional Council (as the approving authority for town planning projects and service provider for bulk services).
- Oshivelo Settlement Office
- NORED
- 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 and streets.

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 where 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 Oshivelo, the New Era and Confidente Newspapers dated: 19th and 26th April 2024. 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 planning notice Board of Oshikoto Regional Council (Oshivelo Constituency Office) on the from the 19th April 2024 until the comments period lapsed on the 31st of May 2024.

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. Therefore, to incorporate the varying needs of stakeholders and I&APs, as well as to ensure the relevant interactions between stakeholders and the EIA specialist team; a public meeting took place on the 2nd of May 2024 and it was well attended by the community, political leaders, spiritual and traditional leaders (please see attached attendance register and minutes).

The pictures below shows photographic evidence of the public participation meeting.

Figure 5: Photographic evidence of public participation meeting

The following where the issues raised by the community at the public participation meeting:

Issue raised	Comments
The community is looking forward to the development as they have been waiting for a long time for municipal services.	➢ The Oshikoto Regional Council has recognized this fact and this is the reason why a resolution was taken to undertake this project.
Some community members were concerned as to where they will be relocated after the formalization is completed.	➢ The Oshikoto Regional Council has made provisions for residential owners to be relocated to a residential area on the other part of town, all the businesses will be accommodated within the development.

Table 3: Issues raised at Public Meeting

10.8 Issues raised by interested and affected parties

Letters for comments were sent to the identified key stakeholders for comments and none of the identified stakeholders shared their comments. This can be attributed to the fact that this is a positive development that will stimulate the economic development of Oshivelo Settlement and the leaders in the area are in support of the development.

11. ENVIRONMENTAL ASSESSMENT METHODOLOGY

An appraisal of the type of effects the proposed closure of a public open space and street, consolidation and subdivision of the consolidated erf and the creation of streets for the establishment of Oshivelo Settlement Business Area 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)	(Severity + Duration + Extent) / 3

Table 7: Determination of consequence

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

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) =	(Frequency + Probability) / 2

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 the construction phase are:

Dust pollution and air quality impacts- These are expected to be minimal during the construction of bulk services because it's a low scale extension of services and the sandy soils in the area are not expected to produce a lot of dust during construction. The construction of the street, sewer and water reticulation services will have an impact on the surrounding air quality because of the use of construction vehicles on 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 municipal services 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)
Mitigation measures: 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 15 skilled and unskilled jobs. Preference should be given to locals and Namibian Citizens. When recruiting, the responsible contractor should ensure gender equality is taken into account and that both men and women are employed equally. 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. 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.									
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 businesses and 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 municipal services 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 along the streets 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 sites 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)
Mitigation measures: A health and safety plan is to be developed and implemented as soon as land clearing commences. 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. Ensure the appointment of a Safety Officer to continuously monitor the safety conditions during construction. The contractor should further ensure that adequate emergency facilities are available on site. 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. All construction staff must have the appropriate PPE.									
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)
Mitigation measures: No diversion of traffic or closure of the road is expected. Traffic signs indicating that there is construction work in the area should be displayed in the adjacent street. Traffic signallers and controllers should be employed to regulate traffic of construction vehicles.									

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)

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)

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)
Mitigation measures: The construction vehicles are not allowed to be parked within 20-meters of the banks of the water ponds after working hours. The construction site camp should be constructed more than 20-meters from the banks of the water pond. No dumping of solid or liquid waste in standing water. The temporary waste disposal site should be constructed at least 20-meters away from standing water. No blockage of any kind that will prevent the storm water from draining naturally is allowed along the adjacent streets.									
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)
Mitigation measures: Chemicals used during construction e.g. paint and paint remover are a risk. Care must be taken to avoid contamination of soil and groundwater. Ensure no cement or cement containers should be left lying around. Mixing of cement should be done at specifically selected areas on mortar boards or similar structures to contain surface run-off. Proper ablution facilities should be installed at the construction site and at the camping site and arrangements to be made with the Regional Council. 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. Cleaning of cement mixing equipment should be done on proper cleaning trays.									

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)

Crime Impacts – The influx of workers and equipment to carry out the construction of municipal services might increase incidents of crime.

	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: Criminals might be attracted to the try their luck and steal the construction equipment, personal valuables of a construction workers, etc. The contractor must ensure that there is sufficient security personnel at the construction site camp. The contractor should be ensure that the site camp is in an enclosure and there is a controlled entrance. Emergency contact numbers including those of the Namibian Police should be displayed throughout the camp site. Inform the local police of the construction activities and for them to be on the lookout for criminals. Educate construction workers on the human and women rights.									
Mitigated	1	1	1	1	1	2	1.5	Negative	2.5 (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. The construction of streets also blocks storm water from following their natural courses and thus accumulate and cause damage to business properties nearby. Therefore, the engineering street 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)
Mitigation measures: 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. 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. All buildings to be constructed above the 50-year flood line to avoid flooding of properties. All engineering plans for streets to meet the minimum municipal services requirements.									
Mitigated	1	1	2	1.33	1	2	1.5	Negative	2.83 (L)

Contribution to housing - The project will contribute to the business and economic development efforts of settlements within the jurisdiction of the Oshikoto Regional 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 aims to stimulate business activities within Oshivelo Settlement by formalizing the informal businesses. The business owners will be empowered through security of land tenure. The business owners will benefit from the provision of municipal services such as water, sewerage and electricity. The Oshikoto Regional Council will collect additional lease fees to enable them to develop additional areas. The project will improve job creation opportunities for the locals during the construction and operational phases. Residents to be provided with all the basic amenities and utilities required by the community for them to live in a high 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 business opportunities to the previously disadvantaged youths from the middle to low income segments of the settlement.									
Mitigated	1	5	4	3.33	3	5	4	Positive	7.33 (LM)

Increased employment opportunities- the construction of services and formalization of existing businesses 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 increase in business activity after the formalization process is completed.

	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 businesses will require a more formalized form of waste management and Oshikoto Regional 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 Oshikoto Regional Council should be responsible for waste management. Oshikoto Regional 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 portions of the public open space and street are to be used for business 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 Oshivelo by converting unutilized, non-functional public open spaces and streets into business properties.									
Mitigated	1	2	1	1.33	5	3	4	Positive	5.32 (LM)

11.3 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, The Oshikoto Regional Council has resolved to develop a formalized business area in Oshivelo Settlement in order to stimulate economic growth and change the quality of living for the settlement's inhabitants. Thus, the Regional Council identified the already existing businesses that are located on Erven 180, 181 and Portion A of Portion 1 of Oshivelo Townlands No. 1357, Oshivelo to be the subject of this formalization. Oshivelo Settlement is located in Oshikoto Region, between Tsumeb and Omuthiya in the north central part of Namibia

The Remainder Portion 1 of the Farm Oshivelo Townlands No. 1357 is reserved for "Street" purposes, Erf 180, Oshivelo is reserved for "Public Open Space" purposes while Erf 181, Oshivelo is zoned for "Business" purposes. In order for the Oshikoto Regional Council to commence with the formalization of the business area, the statutory town planning and environmental management procedure for the permanent closure of proposed Portion A/1/1357 as a "Street", permanently closure of Erf B of Erf 180, Oshivelo as a "Public Open Space", subsequently consolidation of the proposed erven with Erf 181, Oshivelo and subdivision the consolidated erf have 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 Portion A of the Remainder of Portion 1 of the Farm Oshivelo Townlands No. 1357 as a "Street", permanent closure of Erf B of Erf 180, Oshivelo as a "Public Open Space", Consolidate Portion A/1/1357. Erf B/180 and Erf 181, Oshivelo and subsequently subdivide the consolidated erf into ±32 Erven and Remainder and the creation of streets. 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 businesses to the residents of Oshivelo and economic opportunities for SMEs within the settlement. The

development will complement the efforts of the Government of the Republic of Namibia and help with the economic development of the country.

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