

ENVIRONMENTAL IMPACT ASSESSMENT

FOR THE PROPOSED TOWNSHIP ESTABLISHMENT OF OMARI ESTATE ON PORTION 60 (A PORTION OF PORTION H) OF THE FARM BRAKWATER NO. 48, WINDHOEK CITY, KHOMAS REGION.



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See attached resumes

Client

Name	Position/ Role	Address
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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

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1. INTRODUCTION

1.1 Project Overview

Property Group Save Namibia proposed to establish Omari Estate on Portion 60 (a portion of Portion H) of the Farm Brakwater no. 48 situated in the jurisdiction of City of Windhoek located in the Khomas Region in Central Namibia. The estate will be state of the art, and will employ the latest technology in estate management. It will contain ±510 Erven of mostly residential nature and supporting land uses of businesses, institutional, public open spaces and civic use.

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 proposed Omari Estate. 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 proposed project for the establishment of Omari Estate as a township 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, Property

Group Save Namibia appointed Nghivelwa Planning Consultant to provide 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 are, 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 (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 Property Group Save Namibia (PGSN). As the project proponent, PGSN has been extremely positive in providing necessary information and documents and also in providing necessary guidance during the

undertaking of the study and preparation of the report. The Consultant (Nghivelwa Planning Consultant) gratefully acknowledges the help, advice and information provided by PGSN management as well as the 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 Ndakunda	B-tech Town and Regional Planning	Namibia Institute of Town and Regional Planners. Namibia Council of Town and Regional Planners
Elina SP Vakuwile	B-tech Environmental Management	Environmental Scientist (EAPAN Member)

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 of the proposed Township Establishment of Omari Estate; to investigate the potential impacts on the social and natural environment due to the construction and operation of the proposed development:

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 an 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 contacting relevant stakeholders and Interested and affected parties. Advertisements for the public participation 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 21st and 28th January 2022. The public and interested and affected parties were invited to provide comments to the EIA. A total of 17 Interested and Affected parties were registered and their comments incorporated within the scoping report and EMP. A public meeting was scheduled for the 3rd of February 2022. However, there were no participants at the meeting.

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 exploration project
Environmental Management Act EMA (No 7 of 2007)	Requires that projects with significant environmental impact are subject to an environmental assessment process	Ensure that the Township Establishment is carried out within the parameters of the Act.

	(Section 27). Details principles which are to guide all EAs.	
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).	
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 and Bill
The Nature Conservation Ordinance (No. 4 of 1975)	Prohibits disturbance or destruction of protected birds without a permit. Requires a	Protected plants will have to be identified during the planning phase of the project. In case there is an intention

	<p>permit for picking (the definition of “picking” includes damage or destroy) protected plants without a permit</p>	<p>to remove protected species, then permits will be required</p>
<p>Forestry Act 12 of 2001 Nature Conservation Ordinance 4 of 1975</p>	<p>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.</p>	<p>Even though the Directorate of Forestry has no jurisdiction within townlands, these provisions will be used as a guideline for conservation of vegetation.</p>
<p>Convention on Biological Diversity, 1992</p>	<p>Protection of biodiversity of Namibia</p>	<p>Conservation-worthy species not to be removed if not absolutely necessary.</p>
<p>Water Act 54 of 1956 Water Resources Management Act 24 of 2004</p>	<p>The Water Resources Management Act 24 is presently without regulations; therefore, the Water Act 54 is still in force</p> <p>The Act provides for the management and protection of surface and groundwater resources in terms of utilisation and pollution</p>	<p>Obligation not to pollute surface water bodies</p>
<p>National Heritage Act 27 of 2004</p>	<p>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</p>	<p>Any heritage resources (e.g. human remains etc.) discovered during construction requires a permit from the National Heritage Council for relocation</p>
<p>Labour Act 11 of 2007</p>	<p>Details requirements regarding minimum wage and working conditions (S39-47).</p>	<p>Employment and work relations</p>

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.”	The Oshikoto Regional Council should ensure that all contractors involved during the construction, operation and maintenance of the proposed project comply with the provisions of these legal instrument
Water Act 54 of 1956	The Water Resources Management Act 24 of 2004 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force: 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 Township Establishment (S3)	The proposed layout and land uses should be informed by environmental factors such as water supply, soil etc. as laid out in Section 3.

Table 1: Relevant Legislation

4. NEED AND DESIRABILITY OF THE PROPOSED PROJECT

Property Group Save Namibia is a dynamic organization that aims to provide affordable housing to the Namibian population. The Namibian Constitution guarantees the right to shelter as a

fundamental human right and it recognizes the need for government to provide affordable housing to the population of the country. Since independence in 1990, The Government of Republic of Namibia has made housing provision as a priority to redress the social and economic inequalities that existed due to apartheid laws.

The government has however met a couple of challenges in the provision of affordable housing in the country and the economic inequality has on gotten worse over the years. Property Group Save Namibia has resolved to help the government by developing affordable housing for the people of Namibia. Thus, the organization is in the process of acquiring Portion 60 (a portion of Portion H) of the Farm Brakwater No. 48 and develop it for this purpose.

The housing development will cater for the middle and low income sector of the population and houses will cost less than the median cost of a dwelling in the City of Windhoek. The development will consist of 2-4 bedroom houses, general residential, businesses and public open spaces. The development will generate 60% of their energy from renewable sources and the 40% will be sourced through traditional means. All the sewerage generated will be treated and recycled on site.

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 more 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 21st January 2022 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 Township Establishment project will involve;

- The preparation of the site, including excavations no blasting required.
- Transportation of materials supply with road transport trucks.
- Off-loading of materials

- The constructions of the buildings and other substructures
- The constructions of the streets (Roads).
- The constructions of bulk services infrastructures such as water, electricity power lines and sewage.
- The supply of bulk services such as water, electricity, waste disposal plan and waste management
- The Maintenance of the township by Property Group Save Namibia.
- Maintenance of all service infrastructure constructed will be done by the proponent.

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 establishment of a ±510 erven estate of different land uses to be used for the construction of medium and low cost housing on Portion 60 (a portion of Portion H) of the Farm Brakwater No. 48. The activity involves the constructions of bulk services such as sewer

water reticulation, electricity supply, streets, Water for human consumption and constructions of dwellings.

It also includes the maintenance of the site during the operational phase such as waste disposal from the site to the disposal site, noise pollution control as well as technical maintenance of the afore-mentioned services. The proposed site is situated near existing infrastructure as the water pipeline runs on the west of the property, there is an electricity substation on the east of the site and access to the main road is already provided for.

All new erven to be created will be connected to the bulk services and the water-borne sewage will be treated and recycled on site, the harmful residue that is created will be transported to the waste disposal site as provided by the Windhoek Municipality. The land is currently not developed and is zoned for residential purposes as per the provisions of the Windhoek Town Planning Scheme. Thus, rezoning to an appropriate land use consistent with township establishment is necessary.

6.1 Proposed location and land ownership

The proposed development is owned by Erf Sixty Brakwater CC with the area of 50, 002 hectares. It is situated on the property legally known as Portion 60 (a portion of Portion H) of the Farm Brakwater No. 48, Windhoek Municipality, Khomas Region as shown in Figure 1 below. The site is currently vacant. The proposed site is located along the Brakwater road. The GPS coordinates of the location of the proposed project site are (-22.402004"S) (17.055458"E).



Locality Map

6.2 Ownership

The proposed development is a property of Erf Sixty Brakwater CC but, will be managed by Namibia Property Save Group who are in the process of purchasing the property from the owner. PGSN will be managing the development during the construction and operational phase. The proposed erven would then be sold to medium to low-income residents of Windhoek.

6.3 Description of the site

- The slope of the site is relatively flat, with water streams running through the area and a high slope on the southern side of the property.
- No characteristics of ground slope instability were observed on site.
- There was ground surface water during the site investigation.
- There is erosion in some areas due to flood water.
- Medium excavations can be expected but no blasting operations are fore seen.

6.4 Photographic History

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

1. Typical vegetation condition of the proposed site;



2. The Brakwater Main Road adjacent the site



2. Typical topography of the site;



6.5 Description of the proposed project

Property Group Save Namibia proposed the establishment of a township to be known as Omari Estate situated on Portion 60 (a portion of Portion H) of the Farm Brakwater No. 48 which involves the constructions of bulk services such as sewer water reticulation, Electricity, Streets, water, dwellings, the maintenance of the site during operational phase, waste disposal from site and noise pollution control as well as technical maintenance of the afore-mentioned services. The proposed development will be of 2 to 4-bedroom medium to low cost houses, general residential dwellings, businesses and public open spaces. The development is however still in the designing phase and plans can change pending statutory approval. However, the layout of the site is shown in figure 2 below.

6.6 Proposed Project Activities

The proposed development entails township establishment and related infrastructure of ±510 erven on a 50, 002-hectare Portion 60 (a portion of Portion H) of the Farm Brakwater No. 48. The erven composition of the proposed township is shown in Table 2 below.

Omari Estate

LAND USE, AREA, PERCENTAGE AND NUMBER OF ERVEN TABLE: OMARI ESTATE					
Land Use	Total Area ±HA	% of Total Area	Number of Erven		
Residential	14,43	57	244		
General Residential	0,8	3,1	5		
Business	1,35	5,3	10		
Civic	0,42	1,7	3		
Institutional	0,21	0,8	1		
Public Open Space	1,44	5,8	6		
Remainder/Streets	6,65	26,3	1		
Total	25,3	100	270		

Table 2: Erven composition for Omari Proper

LAND USE, AREA, PERCENTAGE AND NUMBER OF ERVEN TABLE: OMARI EXTENSION 1					
Land Use	Total Area ±HA	% of Total Area	Number of Erven		
Residential	13,37	53	220		
General Residential	1,09	4,36	7		
Business	1,19	4,76	6		
Civic	0,15	0,6	1		
Institutional	0,1	0,4	1		
Public Open Space	3	12,48	5		
Remainder/Streets	6,1	24,4	1		
Total	25	100	241		

Table 3: Erven composition for Omari Extension 1

6.7 Engineering Services

The proponent is proposing the establishment of a “medium to low-income” estate, as detailed below. The proposed development of ±510 erven consisting of 464 Residential erven, General Residential, Business, Institutional, Civic, Public Open Spaces and public roads. The township establishment requires bulk engineering services in order to make it work and make it safe for the occupation of its inhabitants

6.7.1 Bulk Infrastructure

The proposed bulk services will be designed and constructed from scratch and will use the latest technology in terms of sustainable use of resources, recycling and sustainable energy generation.

a) Water

The existing infrastructure is not adequate to supply the proposed development thus, the proposed development will require the construction of a new water reservoir that will be provided with water from an existing water pipeline running on the west of the property. All water infrastructure will have to be designed and constructed from scratch to allow for the proposed development to take place. The proposed development will require about 40 cubic meters of water per day thus, construction of new water reservoir and additional water services should be undertaken to for the proposed development.

b) Sewerage

The existing bulk infrastructure is not adequate to carry the load of a further waterborne sewerage reticulation system, thus additional infrastructure as well as additional pump stations will be constructed in this regard so that the infrastructure can be adequate enough to pump the effluent produced by the proposed development.

The proponent will construct a water treatment plant on site that will be used to treat sewerage water and recycle it for reuse for drinking and gardening in the proposed development. All harmful effluent that is a by-product of the recycling process will be transported from the site and deposited in the designated site as prescribed by the Windhoek Municipality.

c) Electricity

Omari estate will get electricity from the existing electricity substation that is located about 500 meters on the south eastern side of the property. Should this substation not have sufficient capacity to power the proposed development, the developer is prepared to engage the power utility company and the Windhoek Municipality to increase this capacity.

d) Storm water

A storm water drainage system will be constructed in the property, using the existing storm water channels that have been accommodated within the layout design. A system of channels will be constructed along the streets of the proposed development to safely guide the storm water out of the site.

e) Waste Produced

The waste to be produced throughout the proposed development will be dumped (disposed of) at the nearest City of Windhoek dumping site. An estate management company will be created to manage the day to day affairs of the estate, including the waste disposal on site. A levy will be charged on the residents to make sure that the waste is disposed of in a safe manner.

f) Roads

All roads to be constructed in the proposed development will be tarred roads and the main access to the development will be obtained from the Brakwater main road that is situated on the eastern side of the property. A 20-meter main street will run through the property and can be used by adjacent farm owners to gain access to the property. The developers will also maintain the main

access road that is situated on the southern side of the property to provide ease of access to surrounding properties.

6.7.2 Blasting

There is no blasting expected throughout the proposed development. However, heavy machinery will be used to clear and level the site to make it ideal for developing a township that people can live in.

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

This will involve clearance of vegetation that is currently found at the proposed site. The site will then be isolated for public safety and for the security of construction material and equipment.

c) Excavation

This will involve excavation of the ground for the pipe working and constructions of bulk services and buildings and other substructures as per the engineering designs. This will use appropriate excavation equipment. This process will generate waste in form of spoil soil and rock particles.

d) Construction of superstructures

Based on the proposal of the proponent, this will entail the construction of superstructures of the township with components that include: -

- An establishment of a public square around one of the business areas
- Constructions of residential erven
- Public recreational areas (Open space)
- Sewage reticulation
- Electricity power lines
- Portable water supply
- Associated piping work

6.8.2 Activities during the operation and maintenance phase

During this phase, Property Group Save Namibia, the proponents of this project; will be responsible for the following:

- Maintenance of the site during operational phase such as waste disposal from site to the recognised waste disposal site;
- Controlling the noise pollution in the area;
- Technical maintenance of the bulk services.

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 potential to accommodate the proposed development. The proposed site is located on a fair site with no mineral resources which might lead to the decommissioning of the project. The proposed development will not affect the neighbours and locals in a negative way. Therefore, there will be no need for decommissioning the project in the near future.

7. BASELINE DATA

7.1 Climatic conditions

The Khomas Region is described as a semi-arid highland savannah with a rainfall average ranging from 300-350 mm per year. Its climate is classified as a subtropical stepper (low latitude dry) with a subtropical thorn woodland bio zone. The summer season of the region is described as hot with a maximum temperature between 30°C and 32°C during the hottest months and coldest winter temperatures are around 4°C to 6°C. In this Region, December is known as the hottest month of the year, while July is known as the coldest month of the year in the Region. The mean evaporation figure for the Region lies from 3000mm to 3200mm per annum.

Geology, Topography and drainage

The Region is located in the central highlands of the country and is bordered by the Erongo region to the west and the northwest and by the Otjozondjupa region to the north and Omaheke region to the east and Hardap region to the south. The landscape in the Khomas Region is classified as being in the Khomas Hochland, high Plateau, which is characterized by rolling hills and many valleys. The topography of the proposed site is predominantly flat with a perennial river running down the western edge of the property and hill on the southern side of the property. The geology of the region is dominated by the Damara Sequence.

Soils

The Khomas Hochland is a deeply dissected mountain land of intermediate elevation, where the geomorphology is closely related to the underlying geology (Christelis and Struckmeier, 2001). The soil cover in the study area is the lithic leptosols referring to shallow soil cover overhard rocks. The

main rock type is identified as biotite schist, but with minor strata of micaceous quartzite, feldspathic schist and amphibole schist (Labuschagne, 2004, and Mendelsohn, et al, 2002).

Fauna

During the site inspection, no large animals were observed on the proposed site. However, borrows of small animals were observed and it is believed that a large number of them reside in the area. Most of these small animals adapt well to urban environments and it is expected that their populations will not be affected by the proposed development. On the contrary, the increase in the foraging food will boost the populations of these small animals.

Flora

According to Lawrence (1971), the vegetation of the region is classified as highland savannah and comprises a number of Acacia species and numerous species of perennial thorn trees in the valleys and shrubs and grass on the steep slopes. Based on the physical observations on the proposed site, it was observed that there was a large number of vegetation in terms of grass and shrubs. The site however lacks a large number of trees and those that were found will be preserved through the development.

The clearing of land for to make way from the development will preserve the large trees that are found in the property. 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.

SOCIO-ECONOMIC ENVIRONMENT

According to Namibia Population and Housing Census of 2011, Windhoek is experiencing the highest rural-urban migration rate in Namibia. This exerts pressure on the local authority to provide adequate services to its inhabitants. The proposed development will relieve some of this pressure and will help provide for affordable housing within the Windhoek Local Authority Area.

Demographic	Figures
Total	342 141
Females	172 469
Males	169 672
Head of households	Figures
Females	39
Males	61
Languages	Figures
Oshiwambo	41
Afrikaans	19
Nama/Damara	12
Otjiherero	10
Employment	Figures
Employed (15 year and older)	70
Unemployed	30
The population outside the labour force comprised of students, homemakers and retired or old age persons.	
Main source of income/Livelihood	Figures
Wages & salaries	73
Cash remittance	5

Business, non-farming	14
Pension	4
Farming	1

Table 4: Demographic figures on Socio-Economic Environment of Windhoek

According to (EMIS, 2012) there are 52 Primary schools, 14 Combines school and 28 Secondary schools and 6 other schools in in the Khomas Region. The percentage literacy rates for persons older than 15 years in the Khomas Region is 96% compared with the rest of the countries average that is 81%.

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 the option of undertaking the proposed development in a different location other than the chosen site. This could also entail acquiring land elsewhere to carry out the development. However, the land in the Brakwater area is private land and there is little room to choose which one can be used for a township establishment. The developer has already committed and have an agreement in place to purchase the land from the current owners.

Due to land availability and other contractual agreements between the current and prospective land owners, Alternative 1, is the only site that has been identified for establishing a township. 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 land will be purchased by Property Group Save Namibia; the proponent of the project to establish the township and no red data recorded on the proposed land which might hinder the development on the proposed land.
- This low-cost housing development will, in terms of the City of Windhoek Implementation Plan, together with the affordable Namibia Mass Housing Development Programme (MHDP) redress the number of informal settlements and address the housing shortage within the Windhoek Municipal area.
- It will accommodate previously disadvantaged individuals who cannot afford houses;
- It will create job opportunities for the local community in both construction and operational phases which will improve their skills.
- There is adequate space for the proposed development on the proposed land which is 50 hectares.
- The proposed site will be located at a suitable location that will avoid problems associated with traffic system.

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 situation/ status quo. Therefore, the No-go Alternative would mean that the proposed township establishment on Portion 60 (a portion of Portion H) of the Farm Brakwater No. 48 for the development of a new township would not be constructed at the proposed site and the land would remain at this current status.

Should the proposed township establishment not take place, the shortage of housing will persist within the Windhoek Local Authority area 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:

- Vacant land may result in informal settlement development.

- There will be a backlog in housing, which may lead to social unrest as the community's needs are not addressed.
- No employment opportunities will be created for the locals who would work on the project.
- Poverty will not be eradicated in terms of job creations.
- The local skills would remain underutilized.
- Reduced technology advancement at the village and interaction both at local, national and international levels.
- Promotes vegetation clearing for firewood

This is therefore not a desirable alternative as the option.

10. PUBLIC PARTICIPATION PROCESS (PPP)

This section of the report provides details of Public Participation Process (PPP) undertaken in the compilation of the EIA final 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 neighbouring landowners, local authorities, environmental groups, village councils and communities, to comment on the potential environmental impacts associated with the proposed Township Establishment project are given an opportunity to comment on, or raise issues relevant to the proposed project and its benefits to the nation and to Namibia's economy. Besides these legal requirements, it was also endeavoured to consult the public and other relevant stakeholders to ensure that their voices are heard and taken into account during the decision-making process.

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, A site meeting was held on the 3rd of February 2022. The following were invited to Comment:

- Windhoek Municipality (as the approving authority for town planning projects and service provider for bulk services).

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. There were a total of 17 Interested and affected parties registered and the Background Information Document was shared with them. 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;

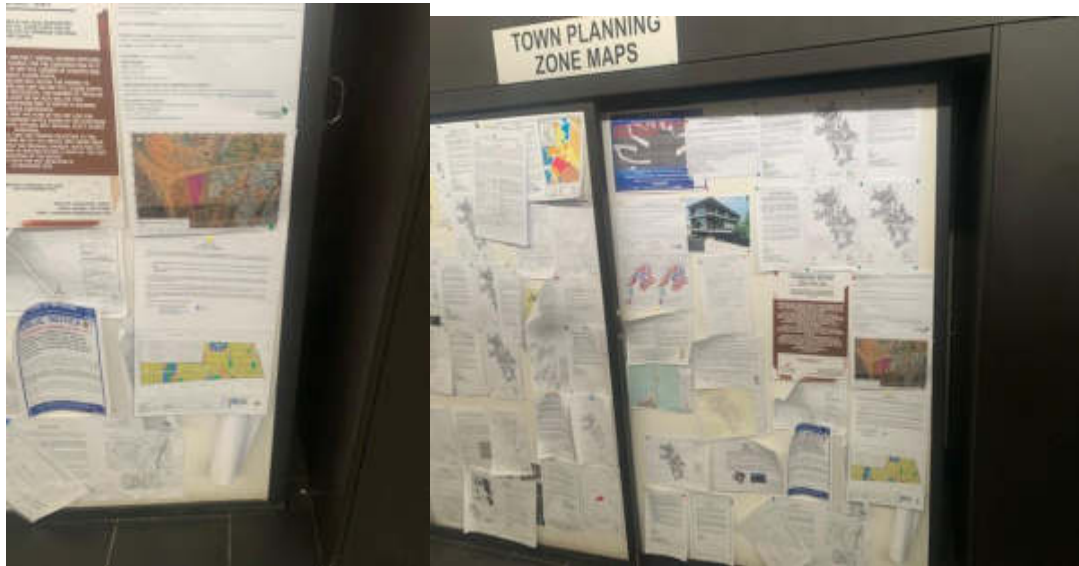
- Forwarding letters to government authorities and other identified relevant stakeholders;
- Fixing a notice board at a place conspicuous to the public in English;
- Placing advertisements twice in at least two local newspapers.

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 Local Authority Area of Windhoek, the New Era and Confidante Newspapers dated: 21st and 28th January 2022. 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 Windhoek Municipality notice board on the 26th January 2022.



A3 notice on notice board

An A3 size notice detailing information about the project and the EIA process was on site on the 26th January 2022.



A3 notice on site

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 3rd of February but no one showed up for the meeting.

10.8 Issues raised by interested and affected parties

Letters for comments were sent to the identified key stakeholders for comments and there were 17 respondents that registered as Interested and Affected Parties and their comments were incorporated in the scoping report. Please see attached the list of interested and affected parties.

NAME	POSITION / ERF NO	EMAIL ADDRESS
1. Bert Laaser	Chairperson (Brakwater) Advisory Committee	urdabert@afol.com.na
2. Peter Watson		pwatson@lac.org.na
3. Carel Kruger		gm@windhoekcoal.com
4. Estelle Myburgh		estmyburgh@gmail.com
5. Simon Brodie	Plot 177	brodies69@gmail.com
6. Volker Meyer	xxx	audislimline@gmail.com
7. Dr D St C Gibson	Plot 45	deb-col@iway.na
8. Arno & Bettina von Wielligh	Plot 79	vonwiellighbettina@gmail.com
9. Mit freundlichen Grüßen	Plot 49	moths@iway.na
10. Raik and Iris Richter	Plot 52	Iris-werk@live.nl
11. Michaela Clayton	Plot 57	michaela.clayton1@gmail.com
12. Ingeborg Baltes	Plot 366	ingeborgbaltes@gmail.com
13. Eric Rozental	Plot 136	ericwindhoek@yahoo.fr
14. Andrea Meyer	Plot 55	plot55@iway.na
15. Christo Dreyer	Plot 172	dreyerchristo7@gmail.com
16. Pieter Grobler	Plot 313 & 314	truckrepairs@iway.na
17. Laura Boffelli	Plot 45	debtors@nakara.na

The following were comments and concerns of the Interested and Affected parties:

<u>Comment</u>	<u>Response</u>
1. Possible Impact on the surrounding property values	The surrounding properties will actually increase in value, due to the fact that
2. Possible Impact on Brakwater Amenity (Visual)	The proposed development will be a gated community thus; this development will incorporate camouflaged infrastructure that blends in with the surrounding environment.
3. Possible Impact on services (Water, Sewer, Electricity)	The proposed development will be self-sufficient and will utilize 60% of its energy needs from sustainable sources (Solar). Only 40% will be drawn from the grid. Sewer will be treated on site and water recycled for reuse within the township. A water reservoir will be constructed and will only be filled during night hours.
4. Possible Impact on Safety and Security	The estate will be a gated community, with only the residents allowed to enter. A security team will always be on standby to identify and deal with security threats as they arise.
5. Insufficient information given in terms of the development	The development is still in the design phase thus; a broad explanation is used to determine some of the project information. A detailed engineering report will be done once the proposal is considered by the authorities and it will be shared with interested and affected parties.
6. No sufficient time given to give inputs	The proposed project was advertised as per the ruling legislation, however all comments received before and after the due dates were

	considered and will be given the outmost consideration.
7. Deforestation	There will be clearing of bushes and shrubs to allow for the construction of roads and buildings. Big trees will be accommodated and house owners will be encourage not to cut down trees.
8. Groundwater contamination	There will be no obnoxious activities to be carried out on the proposed development. No industrial activities will be permitted on the proposed development and sewerage water will be treated and recycled and all residue to be transported off site by the developers.
9. Noise pollution	The noise pollution will be kept at the minimum and construction will only take place between 08:00 and 17:00 Mondays to Fridays. All other abnormally loud equipment will only be operated with the notice to neighbouring erven.
10. Traffic congestion	The proposed development will have a maximum of 464 Single Residential erven of which, the main road in the area has sufficient width to accommodate the increase in traffic flow. The developer will also make provision at the turn-off to the property for an additional lane.
11. Rezoning to undetermined land use	The rezoning of Portion 60 (a portion of Portion H) of the farm Brakwater no. 48 is for township establishment purposes only as per the subdivision layout (the land will not be used for any other purposes).

12. BID contains little information	The background information document is a summary of proposed project and a detailed proposal of the project will only be available once the statutory approvals are obtained. However, this document also provides a detailed proposal of the project.
13. Impacts of proposed project on neighbours.	The neighbours will be affected but, not in a negative way. The estate will be a gated community will not interfere with the neighbouring properties.
14. Face to face meeting where all the neighbours can comment on the project.	Should this document not be sufficient, the developer will organize a face to face meeting with the neighbours to further air their comments and contribute to the project.

11. ENVIRONMENTAL ASSESSMENT METHODOLOGY

An appraisal of the type of effects the proposed township establishment 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 5: Assessment and Rating of 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 6: Assessment and Rating of 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 7: Assessment and Rating of 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 8: Determination of Consequence

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

Table 9: Assessment and Rating of Frequency

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

Table 10: 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 11: 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 12: Determination of Environmental Significance

11.1 Impacts Associated with Construction Phase

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

Air Quality Impacts- These are expected to be site specific, short-termed and will most probably pose a negligible nuisance and health threat to those residing nearby. The construction of the proposed township will have impact on the surrounding air quality as construction vehicle will be frequenting the site and surrounding areas. The clearing of vegetation in preparation for construction exposes the soil to dust which increases the Particulate Matter concentration in the atmosphere. PM is contributing to respiratory tract infections, especially in rural areas much like the proposed site.

	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 during the construction process is advised if dust 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. Loads of sand could be covered to avoid loss of material during transport, especially if material is transported off 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 associates with the installation of services infrastructure which will require labourers from the City of Windhoek.

	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 50 skilled and unskilled positions. Preference should be given to local residence and to Namibian Citizens.</p> <p>When recruiting, the responsible contractor should ensure gender equality is taken into consideration that both men and women are employed and treated equally.</p> <p>Equity, transparency, should be put 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 for decision makings.</p> <p>In terms of human resource development and capacity building, the contractor must enforce training programs that skilled workers should always train unskilled workers when necessary, in order for them to enhance their performances and to gain more knowledge that they might demonstrate at other levels in future.</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 cause noise include vehicle trafficking, electricity generator noise, pressure hammers and construction worker’s voices, including earthmoving equipment which will be utilized during the construction phase. However, all neighboring buildings are at least 150m from the proposed site. The project site is currently adjacent to residential and industrial area as Brakwater is known for its industrial and agricultural activities. The construction of the township will disturb residents at a limited extent as most of the properties where people work or reside are located more than 150m away. Therefore, these noise levels that are likely to occur during this phase are not assessed to be a nuisance to the residents and communities.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	4	5	2	3.66	5	5	5	Negative	8.66 (LM)
<p>Mitigation measures:</p> <p>Construction should be limited to normal working days and office hours from 08h00 to 17h00 and 7:30 – 13:00 on Saturdays.</p> <p>No construction activities may be undertaken on Sunday.</p> <p>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.</p> <p>Noise pollution should be addressed and mitigated at an early stage of construction phase.</p>									
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 clearing and removal of vegetation, the digging of structure 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: Removal of vegetation to take place only within demarcated construction site. 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 done 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. Training of contractors on environmental awareness and the importance of flora.									

Mitigated	1	1	1	1	1	2	1.5	Negative	2.5 (L)
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Health and Safety- Health and Safety Regulations pertaining to personal protective clothing, first aid kits being available on site, warning signs, etc. is very important and 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 and 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 is further advised to ensure that adequate emergency facilities are available on site.

The construction staff handling chemicals or hazardous materials must be trained in the use of the substances and the environmental, health and safety consequences of incidents.

All construction staff must have the appropriate PPE.

Mitigated	2	1	2	1.66	1	2	1.5	Negative	3.16 (L)
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Traffic - Potential impact due to increase in traffic because the site is situated along the Brakwater Main Road. 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 in the project.

	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>Flag men and traffic controllers should be appointed to regulate traffic flow of construction vehicles.</p> <p>The responsible contractor must ensure that all drivers employed have valid driver's licenses of vehicle types they employed for, and that they have experience in driving those vehicles.</p> <p>The contractor must ensure that there is always a supervisor on site to ensure that no driver operates company vehicles while under the influence of alcohol or narcotics. The construction vehicle's speed limit should be 40km/h and must be considerate to the neighbours.</p>									
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 clearing of vegetation, 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)
<p>Mitigation measures:</p> <p>Ensure that no excavated soil, refuse or building rubble generated on site are placed or dumped on surrounding properties or land. Contaminated wastes in the form of soil, litter, building rubble and other material must be disposed of at an appropriate disposal site.</p> <p>The contractor and developer should ensure that all the waste generated by the development is appropriately disposed of at the recommended waste disposal sites close to the area.</p> <p>Strictly, no burning of waste on the site or at the disposal site is allowed as it possess environmental and public health impacts;</p> <p>No construction waste should enter the surrounding environment no cleared vegetation to be burnt on-site.</p> <p>To avoid contaminating the soil and underground ecosystem, no wastewater should be disposed on soil.</p>									
Mitigated	1	1	1	1	4	2	3	Negative	4 (L)

Groundwater Contamination – Leakages from equipment and machinery might occur during the construction phase or mixing of cement and the use of toilets all 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 toilet facilities should be installed at the construction site and at the camping site or alternative arrangements made.</p> <p>The contractor shall ensure that there is no spillage when the toilets are cleaned or during normal operation and that the contents are properly removed from site.</p> <p>Cleaning of cement mixing equipment should be done on proper cleaning trays.</p> <p>Prevent spillage of contaminants or of water potentially contaminated by cement, chemicals, sewage</p> <p>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).</p>									
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 in Windhoek.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	5	5	5	5	5	5	5	Negative	10(M)
<p>Mitigation measures:</p> <p>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.</p> <p>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).</p> <p>Contractors should be encouraged to source labour from surrounding areas to prevent the spread of HIV/AIDS and Covid – 19 from external workers.</p> <p>Condoms as a contraceptive should be distributed to construction employees.</p> <p>All government protocols on Covid – 19 (i.e., wearing masks and social distancing) should be practiced on site.</p>									
Mitigated	2	1	4	2.33	2	3	2.5	Negative	4.8(L)

Heritage Impacts – There are no known heritage areas or artefacts that were identified on the project site during the site visit. However, there is a potential damage or destruction to undiscovered heritage sites 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)
<p>Mitigation measures:</p> <p>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 stopped and a qualified archaeologist be contacted for an assessment of the findings. Work may only commence once approval is given from the heritage agency.</p> <p>No specific mitigation measures are required at the moment.</p>									
Mitigated	1	1	1	1	1	2	1.5	Negative	2.5 (L)

Ecological Impacts

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	1	1	1	1	1	1	1	Negative	1 (L)
<p>Mitigation measures:</p> <p>No known conservation worthy vegetation are located on the proposed facility, except trees with stem diameter > 20mm.that are recommended to be conserved and be included in the development</p>									
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 background plans for storm water drainage and collection have been proposed 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 streets in the development and be channelled through the 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.</p> <p>The storm water drainage system should have the capacity to prevent flooding of the site and surrounding areas.</p>									
Mitigated	1	1	2	1.33	1	2	1.5	Negative	2.83 (L)

Commercialization of the area - The project will transform the area into a commercial hub that will see the increase in economic activities and it will bring much needed development and services closer to the people living in the area.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	1	1	1	2	5	5	5	Positive	7 (LM)
<p>Mitigation measures:</p> <p>This project will contribute to the improvement of the services and infrastructure for the surrounding communities, as it will provide more social services within the area.</p> <p>Will create job opportunities for the local community which will improve their skills.</p> <p>Jobs emanating from the construction and operation of the proposed development will be outsourced to small medium enterprises in the area.</p> <p>Residents to be provided with all the basic amenities and utilities required by the community for them to live in a quality life style.</p>									
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)
<p>Mitigation measures:</p> <p>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.</p> <p>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.</p> <p>This project will provide quality residential accommodation to the previously disadvantaged residents with middle to low income. It should provide convenient transport system, accessibility to utilities and social centres to enhance the social quality of life.</p> <p>Public open space and parks erven should be revegetated to look greener and to minimize soil exposure to erosion.</p> <p>Camouflaged infrastructure should be utilized to blend in with the natural environment.</p>									
Mitigated	1	5	4	3.33	3	5	4	Positive	7.33 (LM)

Increased employment opportunities-

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	2	3	5	3.33	3	3	3	Positive	6.33 (LM)
<p>Mitigation measures:</p> <p>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 maintenance of infrastructure and services will be created following the completion of the development. These jobs might be made available to existing labour there creating long term employment.</p> <p>Jobs for security personnel to patrol the estate and the surrounding areas will also be created.</p> <p>Equity, transparency, should be put 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 for decision makings.</p>									
Mitigated	1	4	4	3	2	5	4	Positive	6.5 (LM)

Traffic - Potential impact due to increase in traffic because the site is situated along the Brakwater main road and many vehicles use the road.

	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>An extra lane should be added to the main road to cater for people turning off into the estate.</p>									

Sidewalks for pedestrians should be provided along the property. Appropriate road signs and markings should be provided throughout the estate. Signs should be provided at intersections particularly at higher order intersections.									
Mitigated	2	1	1	1.33	1	2	1.5	Positive	2.83 (L)

Waste management-

	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 Property Group Save Namibia waste management team will service the proposed estate. Property Group Save Namibia to develop a 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 not result in a change in land use but, the density will change with some loss of grazing taking place. However, it will impact positively on the current housing shortage within the Windhoek Local Authority area because it will aim to provide housing to previously disadvantaged individuals who cannot afford houses in. It is expected that 450 new units will be built on the proposed site, providing as many families with housing.

	Severity	Duration	Extent	Consequence	Frequency	Probability	Likelihood	Status	Confidence/ Significance
Unmitigated	1	5	4	3.33	1	5	3	Positive	6.33 (LM)
<p>Mitigation measures:</p> <p>The land use will remain residential However, the density will change as this will be a township development. The development will be compatible with the surrounding land use on completion of the construction phase.</p> <p>Houses should will be sold to locals with middle to low incomes.</p> <p>No informal settlements should occupy the land</p>									
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, Property Group Save Namibia proposed to establish Omari Estate on Portion 60 (a portion of Portion H) of the Farm Brakwater no. 48 situated in the jurisdiction of City of Windhoek located in the Khomas Region in Central Namibia. The estate will be state of the art, and will employ the latest technology in estate management. It will contain ±510 Erven of mostly residential nature and supporting land uses of businesses, institutional, public open spaces and civic use.

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 proposed Omari Estate. 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 housing to the middle and low income portion of the population. The development will complement the efforts of the Government of the Republic of Namibia and help to shorten the housing backlog that is being experienced in the country.

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