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ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT (ESIA) REPORT

PROPOSED SUBDIVISION & LAYOUT APPROVAL ON PORTION A OF THE
REMAINDER OF PORTION 4 OF THE FARM USAKOS-OST NO.64
ERONGO REGION, NAMIBIA

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PROPOSED ESTABLISHMENT & LAYOUT APPROVAL ON PORTION A OF THE REMAINDER OF PORTION 4 OF THE FARM USAKOS-OST NO.64 ERONGO REGION, NAMIBIA

ABBREVIATIONS

- AR - Affirmative Repositioning
- EIA - Environmental Impact Assessment
- EMA – Environment Management Act of 2007
- EMP - Environmental Management Plan
- ESIA – Environmental & Social Impact Assessment
- FSR - Final Scoping Report
- HRAP - Human Rights Approach to Programming
- I&AP - Interested and Affected Party
- IAR - Impact Assessment Report
- IDP - Integrated Development Plan
- LM - Local Municipality
- NDC - Namibia Development Corporation
- S1 - Site Alternative 1
- S2 - Site Alternative 2
- SDF` - Spatial Development Framework
- STI – Sexually Transmitted Diseases
- TDS - Total dissolved solid
- WWTW - Waste Water Treatment Works

1. INTRODUCTION

In order to fulfil its statutory, mandatory and contractual obligations to ensure the provision of reliable and services land to people in line with the Usakos Town Planning Scheme 2008, Usakos Town Council sold the portion A of the remainder of the portion 4 of farm Usakos-Ost no 64. Usakos, Erongo, Region in Namibia.

Portion A of the remainder of the portion 4 of farm Usakos-Ost no 64 is situated approximately 3 km east of the town of Usakos alongside B2 leading to Walvis Bay.

Portion A of the remainder of the portion 4 of farm Usakos-Ost no 64 is currently administered as a townland extension of the Town of Usakos.

The proposed subdivision covers approximately 24 ha and thus its development will trigger negative impacts on the environment.

The Usakos Town Council has therefore appointed Extra Time Consultants to carry out an Environmental & Social Impact Assessment or Statement (ESIA / EIS) and undertake the necessary activities to enable an application for an Environmental Clearance with the Environmental Commissioner as prescribed by the Environmental Management Act (No. 7 of 2007) and Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012).

1.1 AIM OF THE STUDY

The aims of the ESIA for the proposed project are to;

- Evaluate the suitability of the proposed subdivision development or establishment against the biophysical and socio-economic sensitivities of the area;
- Minimize the negative environmental impacts of the proposed township project and the supporting infrastructure during construction and operational phases, as well as maintenance rounds;
- Consult all Interested and Affected Parties (I&APs), with specific emphasis on the communities in the affected area to ensure that their needs and concerns are taken into account; and
- Above all comply with Namibian Environmental legislation (EMA, 2007)

As part of the Environmental impact Assessment application for the proposed development, a scoping phase is to be undertaken. The scoping report therefore

identified the issues that the environmental impact assessment will examine and the scope of the assessment required to ensure that the ESIA will conform to the requirements of the Environmental Management Act (No. 7 of 2007) and Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012).

2. BACKGROUND INFORMATION

Extra Times Consulting CC were appointed by Digits Investment CC, the project Proponent, as independent environmental assessment practitioners to undertake the ESIA process for the proposed development of a subdivision of Portion A of the remainder of the portion 4 of farm Usakos-Ost no 64

Portion A of the remainder of the portion 4 of farm Usakos-Ost no 64 is situated approximately 1 east of the town of Usakos alongside the route leading to Walvis Bay Portion A of the remainder of the portion 4 of farm Usakos-Ost no 64 is currently administered as a townland extension of the Town of Usakos.

A small agriculture development forming part of the portion A and is located on the northern part Fam Usakos –Ost no.64, this development having the potential to be expanded and to be developed as a major employment provider for the local community living at Usakos

A multidisciplinary and sustainable approach was undertaken to achieve a development which is integrated and has minimal environmental impacts.

The environmental description of the proposed site is as follows:

- Topographically, the site gently slopes towards the north east.
- Generally, water will drain away from the site to the North East and South East.
- Portion A of the remainder of the portion 4 of farm Usakos-Ost no 64 area is mainly dominated by the flats land that mostly occur in the form of sand and other sedimentary materials. The typical soils material found on site is silty sand.
- No groundwater seepage or water table was encountered in any of the test pits at the time of the investigation.
- The proposed site is located in a summer rainfall region, much of which falls in the form of thunderstorms. The summers are hot and the winters can be very cold.
- There is an established residential development in the vicinity of the proposed site, reservoirs, informal dwellings, livestock enclosures and NamPower powerline near the site.

- The proposed site is characterized by grassland. No red data or endangered species were recorded during the walk over study.
- No animals were observed during the walk over study, but small mammals, reptiles and avi-fauna are expected to occur on site.

In line with the Human Rights Approach to Programming (HRAP), it is anticipated that the proposed development is meant to improve the standards of the living conditions of the communities by meeting basic needs – affordable housing, educational and recreational facilities, and shopping centres.

The layout of the proposed development is based on the Usakos Town Structure Plan 2011 which takes into cognisance the environmental parameters, economic restraints, availability of land and connection points of existing bulk services infrastructure, therefore based on that no alternatives were considered. A no-go alternative was considered not feasible because if the site remains undeveloped, it will attract criminals, illegal dumping will take place and informal settlements could be established because the housing backlog won't be addressed.

From the Public Participation Process undertaken by Extra Times CC, no objections were received from identified stakeholders. Copies of consultation with the Councillor, Government Departments – NamWater, NamPower, and other relevant service providers and stakeholders are attached and comments received.

The following socio-economic and environmental impacts were identified and evaluated during the assessment process, i.e.:

- Loss of topsoil;
- Potential habitat of the infrastructure on the socio-economic structure of the area.
- Job creation - looking at employment and empowerment of local community (Affirmative Repositioning (AR));
- Excessive noise generation during construction;
- Potential damage or destruction to undiscovered heritage sites of the area;
- Traffic congestion during construction;
- Potential impact of sensitive habitat destruction; and
- Potential impact of destruction on red data plants.

The identified impacts were assessed using the Significance Assessment Methodology (SAM), which have the severity rating, extent rating, frequency, probability and the duration. The extents of the above impacts after mitigation are mostly site specific and localised. Mitigation measures were outlined to reduce the impacts and a draft Environmental Management Plan compiled to ensure contractor

operates his construction activities in environmental sensitive and sustainable manner.

With the information provide, the ESIA is of the opinion that the proposed development should be authorised by the relevant Government Authorities – Ministry of Environment and Tourism.

3.LEGISLATIVE AND REGULATORY CONSIDERATIONS

The pursuit of sustainability, with respect to any development, is guided by a sound legislative and policy framework. This section provides a review of applicable and relevant Namibian legislation, policies and guidelines. This review serves to inform the developer of the requirements and expectations, as laid out in terms of these instruments, to be fulfilled before the proposed project may commence.

Table: Namibian Legislation relevant to the project

LEGISLATION/ GUIDELINE	RELEVANT PROVISIONS	IMPLICATIONS FOR THIS PROJECT
– Namibian Constitution First Amendment Act 34 of 1998	– “The State shall actively promote... maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future” (Article 95(I)).	– Ecological sustainability should inform and guide this EA and the proposed development.
– 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.	– The EMA and its regulations should inform and guide this EA process.

LEGISLATION/ GUIDELINE	RELEVANT PROVISIONS	IMPLICATIONS FOR THIS PROJECT
<ul style="list-style-type: none"> - Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 4878) 	<ul style="list-style-type: none"> - 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). 	
<ul style="list-style-type: none"> - Forestry Act 12 of 2001 - Nature Conservation Ordinance 4 of 1975 	<ul style="list-style-type: none"> - 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. 	<ul style="list-style-type: none"> - Even though the Directorate of Forestry has no jurisdiction within townlands, these provisions will be used as a guideline for conservation of vegetation.
<ul style="list-style-type: none"> - Labour Act 11 of 2007 	<ul style="list-style-type: none"> - Details requirements regarding minimum wage and working conditions (S39-47). 	<ul style="list-style-type: none"> - The Usakos Town Council and Contractor should ensure that all contractors involved during the construction, operation and maintenance of the proposed project comply with the provisions of these legal instruments.
<ul style="list-style-type: none"> - Health and Safety Regulations GN 156/1997 (GG 1617) 	<ul style="list-style-type: none"> - Details various requirements regarding health and safety of labourers. 	
<ul style="list-style-type: none"> - Public Health Act 36 of 1919 	<ul style="list-style-type: none"> - 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." 	

LEGISLATION/ GUIDELINE	RELEVANT PROVISIONS	IMPLICATIONS FOR THIS PROJECT
<ul style="list-style-type: none"> - National Heritage Act 27 of 2004 	<ul style="list-style-type: none"> - 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". 	<ul style="list-style-type: none"> - Any heritage resources (e.g. human remains etc.) discovered during construction requires a permit from the NHC for relocation.
<ul style="list-style-type: none"> - Burial Place Ordinance 27 of 1966 	<ul style="list-style-type: none"> - Prohibits the desecration or disturbance of graves and regulates how bodies may be unearthed or dug up. 	<ul style="list-style-type: none"> - Regulates the exhumation of graves.
<ul style="list-style-type: none"> - Water Act 54 of 1956 	<ul style="list-style-type: none"> - 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)). 	<ul style="list-style-type: none"> - 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.
<ul style="list-style-type: none"> - Town Planning Ordinance 18 of 1954 	<ul style="list-style-type: none"> - Subdivision of land situated in any area to which an approved Town Planning Scheme applies must be consistent with that scheme (S31). 	<ul style="list-style-type: none"> - The proposed use of the project site must be consistent with the Karibib Town Planning Scheme (2012).
<ul style="list-style-type: none"> - Townships and Division of Land Ordinance 11 of 1963 	<ul style="list-style-type: none"> - Details the functions of the Township Board including what they consider when receiving an application 	<ul style="list-style-type: none"> - The proposed layout and land uses should be informed by environmental factors such as water supply,

LEGISLATION/ GUIDELINE	RELEVANT PROVISIONS	IMPLICATIONS FOR THIS PROJECT
<p>– Road Ordinance 1972 (Ordinance 17 Of 1972)</p>	<p>for Township Establishment (S3).</p> <ul style="list-style-type: none"> – Width of proclaimed roads and road reserve boundaries (S3.1) – Control of traffic on urban trunk and main roads (S27.1) – Rails, tracks, bridges, wires, cables, subways or culverts across or under proclaimed roads (S36.1) – Infringements and obstructions on and interference with proclaimed roads. (S37.1) – Distance from proclaimed roads at which fences are erected (S38) 	<p>soil etc. as laid out in Section 3.</p> <ul style="list-style-type: none"> – The limitations applicable on RA proclaimed roads should inform the proposed layout and zonings where applicable.

4. PROJECT DESCRIPTION

The proposed project entails the construction of internal street, business premises, recreational and hospitality facilities with the following zoning establishment:

Establishment of Portion A of the reminder of the portion 4 of farm Usakos-Ost no 64 will be subdivided in 5 erven

Zoning	No of Erven	+ Total Area (m2)	% of Total Area
Residential	1		
General Business	2		
Recreational facility	1		
Parking Space	1		
TOTAL	5		100.00

In addition to the establishment of the erven, services such as bulk water supply, electricity, storm water drainage, sanitation and waste management services will also be provided.

4.1 BASELINE INFORMATION

Portion A of the reminder of the portion 4 of farm Usakos-Ost no 64 is situated approximately 2 east of the town of Usakos alongside the B2 route leading to Walvis Bay

The identified portions of land have been earmarked for future extension under the Usakos Town Planning Scheme of 2008, and this area can also be serviced from the adjacent networks. Furthermore, the portions of land are in the ownership of the Town Council, which has since approved the proposed layout at the town Council Meeting.

4.2 PROPOSED ACTIVITY

The proposed development entails 5 erven as part of Portion A of the reminder of the portion 4 of farm Usakos-Ost no 64 in Usakos Townlands, Erongo Region, Namibia. Township establishment is a complex process of converting land into residential, commercial or industrial properties (The Practice Group, 2015). The township establishment process is relevant to any type of township and must be done in compliance with the regulations and provisions of the town planning and township ordinances of the Government of Namibia.

4.3 PROJECT LOCATION

The proposed development is situated on the property described as Portion A of the remainder of the portion 4 of farm Usakos-Ost no 64, Usakos, Namibia.

The site is located within the town council area of Usakos townlands, as shown in *Figure 1* below.

4.4 SITE DESCRIPTION

4.4.1 Photographic History

Significant in the Photographs is the following:

1. Typical vegetation condition of the proposed site;
2. Potential habitat for fauna of the site;
3. Typical topography of the site;
4. Location of

The proposed development is situated on the property described as Portion A of the remainder of the portion 4 of farm Usakos-Ost no 64 and Usakos town in relation to the proposed site;

5. Evidence of illegal dumping of general waste and garden waste by surrounding land users (residents);
6. Tracks showing vehicular movements and pedestrians; and
7. Location of the overhead powerline.

5. THE NATURAL ENVIRONMENT - USAKOS

According to the Encyclopaedia of Earth, (2015), the natural environment is defined as the set of living and non-living things on Earth which occur in a state substantially not influenced by humans. The term is most often applied to an ecological complex, which includes all of the plants; animals; microorganisms; abiotic factors such as minerals; rocks and magma; water bodies; and atmosphere layers.

There are extremely complex interactions between the living organisms and abiotic elements as well as meteorological influences, all of which combine to form rich speciation and biodiversity in most natural systems.

In contrast to the natural environment is the built environment. In such areas where man has fundamentally transformed landscape such as urban settings and agricultural land conversion, the natural environment is greatly modified and diminished, with a much more simplified human environment largely replacing it. The current state of the natural environment around Usakos and in particular the proposed location is critical to this environment assessment process. This is important in order to predict any likely changes that may occur as a result of the proposed development. The considerations of the receiving environment with respect to the proposed development include the following: Local climate, habitat, ecosystem, flora, fauna, current land uses, geology, hydrogeology, socioeconomic, safety and other issues to be identified in the EIA process.

5.1 BIO-PHYSICAL ENVIRONMENT

5.1.1. Vegetation

The vegetation in the area is generally classified as Broadleaf Savanna. The vegetation is characterized by broad-leafed deciduous woodland, which varies in structure and species composition due to soil and topographic heterogeneity. The most important species are viewed as *Cyphostemma bainesii* (endemic, Forestry#, NC), *Cyphostemma currorii* (Forestry#, NC), *Cyphostemma juttae* (endemic, Forestry#, NC), *Erythrina decora* (endemic, Forestry#), *Heteromorpha papillosa* (endemic) and *Manuleopsis dinteri* (endemic). These species are often associated with rocky outcrops indicating the importance of such geological features in the areas.

This variation takes place at a localized spatial scale, which makes the classification of plant communities challenging. The vegetation in this region is therefore characterized as "mosaics" of smaller units as opposed to vegetative units (Obeid & Mendelsohn, 2001).

There are two major “mosaic” units prevalent in the Usakos Township area. The first vegetation grouping includes vegetation types associated with drainage systems. The prevalent vegetation type within this grouping is *Floodplain and Open Water* vegetation (as outlined by Obeid & Mendelsohn, 2001). This vegetation is found along the Khan River and all associated drainage lines.

Overgrazing by livestock has impacted much of the natural vegetation within the floodplain in the region.

The second major vegetation grouping is comprised of fairly tall woodland growing on deep rocky area. The prevalent vegetation type within the Usakos Township is Woodlands of the Northern Sand Plains. This is the dominant vegetation type in the Township, covering all natural areas with the exception of the flood plains and open water systems. The endemic grass – *Eragrostis omahekensis* – is viewed as the most important species potentially occurring in the general area

5.1.2 Wildlife

Of the at least 88 species of mammals known and/or expected to occur in the general Karibib/Usakos/Omaruru areas, 10 species (11.4%) as endemic while the Namibian legislation further classifies 5 species as vulnerable, 2 species as rare, 3 species as specially protected game, 9 species as protected game and 5 species as insufficiently known. The most important species from the general area are probably those classified as rare (e.g. *Cistugo seabrai* & *Atelerix frontalis angolae*) and vulnerable (e.g. *Galago moholi*, *Proteles cristatus*, *Hyaena brunnea*, *Acinonyx jubatus*, *Felis silvestris*, *Otocyon megalotis*, *Vulpes chama* & *Giraffa camelopardalis*) under the Namibian legislation and near threatened (e.g. *Eidolon helvum*, *Hipposideros commersoni*, *Hipposideros vittatus*, *Hyaena brunnea* & *Panthera pardus*) and vulnerable (e.g. *Acinonyx jubatus*, *Equus zebra hartmannae*) by the IUCN (IUCN 2016). The most important habitat is the rocky outcrops and Khan River and Swakop Rivers habitat.

5.1.3 Surface water

The major surface water feature in the Usakos Township is the Khan and Omaruru River. This river receives roughly all of its water from catchment areas from central part Namibia.

The amount of water within the Khan River varies a great deal due to seasonal and yearly changes in rainfall. The highest flow rate recorded is 462m³/s, which is roughly 90 times greater than the lowest recorded flow rate (11.1 m³/s).

Very little water is extracted from the river on the Namibian side due to the limited water reticulation infrastructure. The majority of the water extracted is utilized by

the Namibia Development Corporation (NDC) and government farms, mainly downstream of Usakos, and to supply the town of Usakos itself (Obeid & Mendelsohn, 2001). Limited water is extracted for use in the Usakos Township. The great majority of crops in the region are grown on dryland fields, inferring that they are not irrigated.

5.1.4 Underground Water

There are a number of aquifers in the Kalahari sediments in the region, which range in depth from about 20 m in the areas around the Kavango River, to 350 m in some places (Obeid & Mendelsohn, 2001). These aquifers recharge by groundwater flowing in a northerly direction from the more elevated areas to the south of the region (Obeid & Mendelsohn, 2001).

There are several hundred boreholes and many hand-dug wells are spread across the inland part of Kavango Region. The majority of the boreholes were provided by the Department of Water Affairs and a number are privately owned by farmers and parastatals (Obeid & Mendelsohn, 2001). Most of the groundwater in the Usakos Township lies at about 20 m, largely due to the close proximity to the Kavango River and the general northerly flow of groundwater. Boreholes in the region produce between 1 and 5 m³, which is generally adequate for the small settlements in the region (Obeid & Mendelsohn, 2001). This water is generally of good quality, with total dissolved solid (TDS) values of less than 1 000 mg/l (Obeid & Mendelsohn, 2001).

5.1.5 Rainfall

Based on the regional data, the average annual rainfall of the area is between 200 – 300 mm. This wide rainfall variability typifies the rainfall patterns in the west central parts of Namibia. Mean annual gross evaporation ranges between 3200 – 3400 mm.

5.1.6 Temperatures, evaporation and wind

The Erongo region generally receives mild rainfall less than the areas to the north, south and the west and can be regarded as sub-tropical. The temperatures are generally high, which results in high rates of solar radiation and evaporation and comparatively little cloud cover. Humidity levels are also low during these periods (Obeid & Mendelsohn, 2001).

The local project area has the following three temperature related seasons: A dry and relatively cool season from April to August with average daytime highs of 23°C and virtually no rainfall during this period; A hot and dry season from September to December with minimal and variable rainfall falling (<20mm per month) and average daytime highs of 30°C, which regularly exceed 40°C, and A hot and rainy season from January through to March with >50mm per month falling during this period (although this is extremely variable) and average high temperatures of 29°C.

6. SOCIO-ECONOMIC ENVIRONMENT

6.1 Socio-economic environment

The Business Dictionary (2015) defines socio-economic environment as the combination of external social and economic conditions that influence the operation and performance of an organization. The socio-economic environment is part of the overall business environment.

Assessing socio-economic impacts requires both qualitative and quantitative measurements of the impact of the proposed development. For example, a proposed township establishment like the one in question may increase employment and create demand for more affordable housing (Wisconsin University, 2015).

6.2 Erongo Region

Erongo is one of the 14 regions of Namibia. The capital is Swakopmund. It is named after Mount Erongo, a well-known landmark in Namibia and in this area. Erongo contains the municipalities of Walvis Bay, Swakopmund, Henties Bay and Omaruru, as well as the towns Arandis, Karibib and Usakos. All the main centres within this region are connected by paved roads. The Erongo Region had a population of 150,809 in 2011.

In the west, Erongo has a shoreline on the Atlantic Ocean. On land, it borders the following regions: Economy and infrastructure Various mining operations occur within this region at places such as Navachab and on a smaller scale at places surrounding Uis and the desert area. Karibib also has a marble industry. Walvis Bay, fully incorporated into the Erongo Region in 1994, is the principal home of Namibia's fishing industry. Walvis Bay also boasts the only deep sea port and is the second largest town in the country. Swakopmund and Langstrand are popular beach resorts; Arandis supports mining industry and Swakopmund boasts manufacturing.

This region, with its link to the coast of Namibia, is well developed. Facilities such as schools, hospitals and clinics, the supply of electricity and telecommunication services are, with a few exceptions, well established. Erongo has 66 schools with a total of 32,114 pupils. The most commonly spoken languages at home were Oshiwambo (37% of households), Afrikaans (22%), and Damara/Nama (21%) and German.[11] For those 15 years and older, the literacy rate was 92%. In terms of education, 89% of girls and 86% of boys between the ages of 6–15 were attending school, and of those older than 15, 79% had left school, 9% were currently at school, and 8% had never attended.[10]

In 2001 the employment rate for the labor force (71% of those 15+) was 66% employed and 34% unemployed. For those 15+ years old and not in the labor force (24%), 35% were students, 34% homemakers, and 31% retired, too old, etc.[10] According to the 2012 Namibia Labour Force Survey, unemployment in the Erongo Region stood at 25.5%. The two studies are methodologically not comparable

6.3 Profile of Usakos

Although there are two development nodes (Usakos and Karibib), the area can be characterized as generally undeveloped. There are few urban structures and there is limited service provision.

The livelihoods of many of the people in the region are based on the resources associated with the mining . The people are heavily reliant on mining activities and farming . About a quarter of households in the area report subsistence farming as their main source of "income" (Obeid & Mendelsohn, 2001).

There is a great deal of semi-scaled mining and formal mines operation

A reliance on livestock is also common in the region, with cattle and goats being most common. Cattle and goats are possibly the most destructive livestock in terms of overgrazing and land degradation. Overgrazing, and the associated issue of erosion, is evident throughout the area.

6.4.1 Cultural conflict

The development of the region has attracted a number of people from different cultures to the area. This often results in conflict between various cultural groups, particularly over the scarce resources and the available services.

6.4.2 HIV/AIDS prevalence

HIV/AIDS is becoming increasingly prevalent in the region. This is shortening the average lifespan in the region, placing strain on local medical services and creating social issues. The number of orphans in the region is growing due to an increase in HIV/AIDS related deaths of parents.

6.4.3 Crime

The growth of the population and increasing competition for resources has resulted in an increase in crime in the region

6.4.4 Conservation vs. resource utilization conflict

A universal environmental concern is that of the conflict between resource utilization and conservation. The survival of the local population is dependent upon local

resources for their livelihoods, particularly because a large proportion of the community survives by subsistence. This places a great deal of pressure upon the local resources. Creating a balance between resource utilization and use is therefore vital as sustainable resource use is dependent on resource conservation and the maintenance of ecological integrity.

6.4.5 Disaster Management

Disaster Risk Management attempts to predict environmental parameters, as opposed to managing them, and manage human activity.

In the case of the Usakos Township, people need to be “managed” with regard to a number of potential natural risks. The primary risks are:

- Resource depletion due to over-use;
- Flooding (drowning); and
- Drought

There is little management with regard to these risks at present.

7. MUNICIPAL SERVICES

Municipal services or city services refer to basic services that residents of a city or town expect the city or town government to provide in exchange for the taxes which citizens pay (Namibia Municipal Support Services, 2014). Municipalities must make sure that people in their areas have at least the basic services they need. There are quite a number of services, but the basic being – water supply (sanitation), sewage collection and disposal, electricity.

7.1 Utilities

As a result of the distance from Usakos, the municipal engineering services required at Portion A are provided from the nearest connection for the Usakos town Council

(a) Water and Sanitation:

The boreholes and installations provided by the Usakos Town Council and the elevated tanks (reservoirs) constructed by NamWater ensure a steady and regularly available supply of potable water. Various types of pipeline, related structures and equipment up to and including the bulk supply water meters, to ensure the provision of potable water for the residents of Usakos is currently in place.

(b) Electricity:

Portion 4 of farm Usakos-Ost no 64. Usakos is serviced with electricity which is supplied and managed by ERONGORED, who is currently the service provider for the northern part of Namibia. Electricity is provided from the Usakos substation along the B2 road by means of an 11kVa overhead line. Portion 4 of farm Usakos-Ost no 64. Usakos is serviced with a single overhead line branching off from the main line supplying electricity to Usakos.

(c) Postal services and Telecommunications

There are currently 1 postal services available in Usakos; therefore the residents need to travel to Usakos to make use of the services provided by NamPost and NamCourier.

Telecom services such a telephone lines and internet connections are available in Usakos . The Combined School, Tribal Office, a few residential properties, the church and the various Ministries are all connected to the telecom network.

8. LAND USES & GROWTH PATTERNS OF KAHENGE

8.1 Land Uses

Usakos is predominantly used for government and public administrative purposes with a number of Government institutions situated here for example; Ministry of Labours, Ministry of Higher Education, Training and Employment Creation, the Nampost Office, Telecommunication of Namibia, Namibian Police and the Usakos Secondary School, Ditricht Hospital . Although there are approximately 30 erven reserved for Mix land use purposes, there are currently only businesses operating along B2 road in Usakos, which results in the residents travelling to Karibib and even Swakopmund for their day to day shopping needs.

8.2 Immediate development initiatives identified by Council

The Council has identified the possibility of developing Usakos into a formal tourism and agriculture node. The following development initiatives, which will contribute largely towards forming an identity of the Usakos urban node, have been identified:

(a) Agriculture

The Council has identified an area to the south of Usakos where an existing agriculture project is located for the development of additional agricultural activities. Here it should be noted that the agricultural has earmarked the Usakos area for the development of large scale intensive and commercial agriculture production in line with the Government policy directive to obtain a high level of food security for Namibia. As far as could be established, an area of approximately 600ha is needed for this agriculture scheme. While the scheme, once fully developed, can generate permanent employment of approximately 100 to 150 workers plus a large number of casual workers needed during harvesting times, the indirect benefit of such project lies in the supporting industries which can provide an additional 500 to 650 employment opportunities. This would be an opportunity for Usakos Town Council to develop an agricultural industry.

(b) Tourism and accommodation

It is anticipated that once the natural vegetation along the river embankment has been permitted to become re-established and wildlife such as gillaffe, Gazelle possibly others animal species and birdlife returns, tourism in the form of lodges and campsites will establish themselves along the river embankments.

(c) Nature area

The natural grassland areas in the area, where one can find a great quantity of acciacia trees and woodland need to be protected as part of the Usakos/Karibib heritage. The opportunity exists that these areas can be utilized as a community garden with the possibility of operating a small processing plant from Usakos where the fruits can be processed.

9. PUBLIC PARTICIPATION

9.1 STAKEHOLDER PARTICIPATION IN THE ESIA PROCESS

Environmental issues and problems are being experienced in almost all countries of the world today, the extent or intensity of the issues and problems however differ from one setting to another, depending on the size and rate of growth of her population, the quality of and the technologies available to her people, the nature of the environmental units and their characteristics, and the level of her socio-economic development which recently have awakened global fears and responses or reactions.

To address the problems created by human urge to subdue his environment call for collective efforts by all concerned.

The level of involvement may vary, but it is important that all affected by resource exploitation, project, and any activity on environment be given opportunity to think the way forward.

The local people stand better position to notice change in their environment than any other person no matter how highly place the person might be.

The neglect of stakeholder of stakeholders in ESIA has led to waste of resources and manpower. To avoid crisis, the stakeholder's use must be recognised and amenities provided for areas in and around the project sites. As such, in line with the Human Rights Approach to Programming or development, stakeholder involvement is expected to start at an earlier phase – project planning through to implementation phases - in accordance with the prevailing Regulations. This forms part of the ESIA Reporting Process (United Nations Environmental Programme (UNEP), 2014).

Stakeholders' involvement `process involves scheduling public hearings and public information sessions, setting up public advisory and/or liaison groups, and periodically distributing information / notices or announcements in both local and national newspapers or noticeboards concerning the status of project planning.

In this regard registered letters were sent to relevant identified stakeholders, including the local traditional authority. Invitation to public meeting was done through newspaper advertisement as well as in the national radio. In this effect a public meeting was held on the **23 June 2023** in Usakos, attached the **minutes of the meeting**.

Furthermore more consultation was also done during the layout approval on **8th July 2023**, as per attached **appendices 3**, attendance List.

9.2 REGISTERED ORGANS OF STATE, COMPANIES AND PRIVATE INDIVIDUALS

Table 1: List of Interested of Interested and Affected Parties

NAME OF DEPARTMENT / COMPANY / INDIVIDUAL	MEANS OF CONTACT	REPOSE YES / NO
NamWater	Telephone	YES
NamPower	Telephone	YES
Usakos Town Council	Email &Telephone	YES
Erongo Regional Council	Telephone	YES

9.3 SUMMARY OF COMMENTS / ISSUES RECEIVED

During the public participation process comments were received from the NamWater, NamPower / ERONGORED, NamCourier, they are summarized below:

NamWater comments:

Should any of the proposed activity be located within regulated areas, water use authorization must be obtained. The Water Resources Management Act (WRMA) makes it a criminal offence to:

"Pollute fresh water or the sea in a way that makes the water less fit for any purpose for which it is or could be used by people, including use for the propagation of fish or other aquatic life, or use for recreational or other legitimate purpose."

This Act requires that water used for industrial purposes be purified before it is returned to a public stream or the sea, so as to conform with requirements established by the Minister of Agriculture, Water and Rural Development, but can be exempted from doing so, subject to certain conditions.

The Minister, in this instance, may issue a permit to allow the discharge of waste water, effluent or waste in an un-purified or semi-purified state into a public stream subject to such conditions that it does not cause pollution of "public or other water, including sea water" or provided that the discharge point is sufficiently close to the sea that no person will be prejudicially, and no aquatic or marine life detrimentally, affected by such discharge.

Other concerns to be considered include:

- Storm water must be managed on site both during construction and after construction.
- All constructions activities must remain within construction boundaries of the proposed site.
- Pollution of ground water and surface water must be prevented.
- Any pollution incident occurred should be reported to the department within 24 hours.
- Storm water contaminated on site must be contained separate from clean water.
- Applicant should ensure that this activity complies with all applicable legislations.
- The applicant should adhere which stipulates that "no person may establish a township unless the layout plan shows, in a form acceptable to the local authority concerned, lines indicating the maximum level likely to be reached by floodwater on average once in every 100 years".
- The applicant should also ensure that the proposed township development complies with all applicable municipal by-laws and policies for the jurisdiction of Usakos Town Council pertaining to Health, Waste Management, and stormwater, water and sanitation services.

NamPower Comments (Conditions) are as follows:

NamPower has no objection provided following conditions are adhered to:

- The rights for 11 KV lines are registered against the property, ensuring a safe environment.
- NamPower services and equipment must be acknowledged at all times and may not be tempered with or interfered with all the time
- No construction work may take place closer than ten meters from any NamPower distribution structure supporting mechanism
- Natural ground level must be executed closer than ten meters from any distribution structure
- NamPower shall not be liable for any death or injury of any person, or for loss or damage to any property, whether as a result of the encroachment or use of the area where NamPower has its services by his/her agent, contractors, employees, successors in title and assignees
- Applicant indemnifies NamPower against loss, claims or damages, including claims pertaining to interference with NamPower distribution services
- Should the applicant damage any NamPower services during the excursion of any work whatsoever, the incident must be reported to NamPower within 24 hours.
-

10. NEED FOR THE PROPOSED DEVELOPMENT

a. HOUSING SITUATION IN NAMIBIA

According to Housing Finance Africa (2015), Namibia is a middle income country in Southern Africa with the GDP of USD5 719 in 2015. Namibia is one of Sub-Saharan Africa's most stable countries, as well as one of its most attractive investment destinations.

Namibia continues to experience an acute shortage of affordable housing, a situation that has reached a socio-economic crisis proportion and hence warrants an extraordinary public policy response. To date the national housing backlog is estimated at 100 000 housing units, which number is growing at an annual rate of about 3700 units (Summary of Blueprint on Mass Housing Development Initiative in Namibia, 2013)

The phenomenon of informal settlements that subject thousands of our people to deplorable living conditions is present in all urban centres in the country. For the past 23 years informal settlements mushroomed throughout the country. It is the conviction of the government of the Republic of Namibia therefore that unless and until this ugly trend is arrested through deliberate and focused efforts in partnership with other key stakeholders, it will continue to negatively impact on the social, economic and political fabric of the Namibian society with far-reaching and long-term effect. In particular, this situation affects the emotional and psychological being of the young and future generations who come from the informal settlement background. This may in turn reduce the ability of such generations to succeed economically in their future life (ibid.).

According to 2011 Housing Study carried out by the Bank of Namibia , more than 73% of Namibians do not have access to credit facilities offered by the financial service sector and consequently cannot afford to buy urban land and decent housing.

Meanwhile the prices of houses continue to skyrocket due to increase in input costs and the mismatch between the rapidly rising demands for houses versus low housing outputs delivered by housing developers in the housing market annually.

The provision of affordable housing is also hampered by poor access and non-affordability of land by the majority of the residents, especially in the urban areas. Furthermore, inflexibility in the current land tenure system exacerbates lack of right to land ownership and development of it by holders.

The current legislative, policy and regulatory framework is another matter that needs to be reviewed to enable government to smoothly and speedily deliver housing without much bureaucratic and other impediments.

The largest backlog of housing is in the lowest income sectors, with monthly incomes of N\$ 0 to N\$ 1,500 (estimated at 45,000), and incomes between N\$ 1,501 and N\$ 4,600 (estimated at 30,000). While the Build Together programme focuses on people with incomes under N\$ 3,000 per month, the National Housing Enterprise only provides products to people whose incomes are over N\$ 5,000 a month. This constitutes less than 13 percent of the population (Bank of Namibia, 2011).

Furthermore, the housing crisis situation in Namibia is further worsened by very limited affordability capacity due to low households income levels and high unemployment rate which consequently exclude many citizens from the economic realms necessary to access urban land and housing (ibid.)

Lack of institutional capacity, especially within the public sector, to provide housing to citizens is an escalating constrain, thus it is of utmost importance that such capacity is developed.

The various cumbersome procedures applicable in the process of acquiring a property in Namibia do have a bearing on escalating property prices. There is also a perception that stakeholders, such as property valuers, developers and real estate agents, unnecessarily inflate house prices to rake in maximum profits based on the knowledge that there exists excess demand in the market and they are guaranteed to secure a purchaser for every property with an on-sale tag.

As already previously indicated, the Usakos Town Council has already commenced with the planning and formalization of commercial and industrial areas at Usakos while also having allocated certain portions of land to private developers interested in developing residential areas (inclusive of housing) at Usakos.

b. USAKOS

The immediate development intervention planned by the Usakos Town Council for business and recreational facility. The Town planning Scheme however reserves large areas for commercial, industrial and residential expansions in Kahenge.

c. OVERALL SPATIAL DEVELOPMENT POSSIBILITIES AND DEVELOPMENT GUIDELINES

The Usakos Town Planning Scheme makes provision for future commercial, industrial and residential expansion. The expansion of the commercial and industrial areas will be based on the rate of development of a sustainable local economy and the ability of Council to attract developers and investors.

However, the expansion of residential areas can take place independently of the development of a local economy. This will mainly be dependent on Government development initiatives such as the new regional hospital development initiative at Usakos or the increasing urbanization experienced at most major urban centres throughout the country. Informed by the areas identified for residential development, and as depicted on the town planning scheme, estimation is made of

the development potential of Usakos by calculating the gross land area available for the development of residential neighbourhoods and calculating the potential number of residential erven that can be provided within the respective residential areas. In addition, an area of 3% of the gross developable land is to be reserved for commercial land uses, 20% of the total area reserved for the development of roads and infrastructure while another 10% of the total area is to be reserved for the provision of public open spaces within these areas as they form an integral part of any residential development.

The development guidelines are to be used by the Usakos Town Council when determining the development potential and land uses to be provided within the residential areas to be developed, especially if land is made available for development to private investors who often neglect to provide land for institutional and social services within their developments in an attempt to maximize profits for own gain.

It is a given fact that one of the development priorities of today lies in the provision of housing. Housing is defined as a basic need. A tremendous backlog in the provision of housing exists and has to be addressed as a matter of priority.

The Namibian government identified housing as a priority area in 1990 at independence and considers housing as both an enabler of economic growth and a tool for reducing poverty by creating sustainable communities. A National Housing Policy has been in place since 1991 and this was reviewed and updated in 2009. Despite the many components provided in the policy and the awareness of the issues within government, few elements of the policy have been taken forward and little has been achieved in the last twenty years to clear the backlog in housing. (Government of the Republic of Namibia, 2015).

Development pressure in housing provision has placed enormous pressure on the development of vacant land within the urban edge, and existing transport routes. The proposed development will contribute to the improvement of the services and infrastructure for the surrounding communities, as it will provide more social services within the area.

The proposed development promotes a safe and sustainable urban environment in the town of Usakos in line with the Usakos town planning scheme of 2008 and policy of Mass National Housing and Vision 2030.

From a strategic planning point of view it is deemed both necessary and desirable to develop parcels of land within the municipal area and urban edge of the Usakos Municipality, especially those that is highly accessible to necessary urban facilities and amenities.

The proposed township establishment will also create job opportunities for the local community which will improve their technical skills. The project will otherwise be a social and financial upliftment for the community and Namibia at large.

11. ALTERNATIVES

In the planning process of the proposed project, Extra times CC had several consultation meetings with the Local Authority in order to determine the best site for the proposed development.

11.1 No-Go ALTERNATIVE (DO NOTHING ALTERNATIVE)

Should the proposed development not take place, serious consequences can be expected, as there will be a backlog in housing, which may lead to service protests as the community's needs are not addressed or met.

Due to the location of the proposed site to the existing residential development, it could attract undesirable land use, e.g. become a hub for criminals' activities, social ills like prostitution thereby exacerbating or aggravating STI rate, drug and alcohol abuse and there could be veld fires due to illegal burning of general waste, establishment of informal settlements.

11.2 SITE ALTERNATIVE

Due to land availability and service connections, the proposed site, Alternative 1, is the only site that has been identified for establishing a township during the consultation process with the Local Municipality and in line with the Usakos Structure Plan 2008. Therefore, no alternative site has been identified or considered during this study, assessment and further consultation.

11.3 TECHNOLOGY ALTERNATIVE 1:

Due to the type of project, no alternative technology can be considered.

11.4 SELECTION PROCESS

The Terms of Reference for the proposed project is based on the requirements set out by the Environmental Management Act (2007) and its Regulations (February 2012). The process covered the following steps, which are reported as follows:

- Provide a detailed description of the proposed activity ;
- Identify all legislation and guidelines that have reference to the proposed project
- Identify existing environmental (both bio-physical and socio-economic) conditions of the area in order to determine their environmental sensitivity;

- Inform Interested and Affected Parties (I&APs) and relevant authorities of the details of the proposed development and provide them with a reasonable opportunity to participate during the process;
- Consider the potential environmental and social impacts of the development, and assess the significance of the identified impacts
- Outline management and mitigation measures in an Environmental Management Plan (EMP) to minimize and/or mitigate potentially negative impacts.

The scope of work for this assessment or selection process includes the following:

- An assessment of the proposed layouts (i.e. the proposed Usakos Townland and the land uses). The actual activities for each erf are not to be considered, rather the collective land use implications are to be considered collectively; and
- The construction and operation of the internal infrastructure to the new erven. The construction and operation of bulk infrastructure to serve the new properties particularly the sewage treatment works will be considered in a separate assessment.

Consultation meetings have been held with the Local Authority and relevant stakeholders to determine the most suitable area available for the establishment of a township.

12. SIGNIFICANT OR IMPACT ASSESSMENT METHODOLOGY

a. IMPACT ASSESSMENT METHODOLOGY

The impact of the proposed development on the physical, biological and socio-economic environment has been assessed using the methodology described in the following section. It was decided that a more contemporary approach to the impact assessment process would be used than was originally defined in the SCP ESIA (2002).

To maximise the transparency of the ESIA, criteria for assessing the significance of impacts are defined for each issue and type of impact. These criteria take into account whether the project is expected to:

- Cause project standards to be exceeded, e.g. air, water or soil quality, noise levels, or make a substantial contribution to the likelihood of exceedance
- Adversely affect protected areas or features, or valuable resources: nature conservation areas, rare or protected species, protected landscapes, historic features, livelihoods, important sources of water supply and other key ecosystem services (i.e. the benefits people gain from ecosystems)
- Conflict with established policies/practices.

i. Identification of Impacts

The impact assessment process initially involves identification of the Project's activities and potential environmental and social impacts resulting from each activity during the Project phases. A Project activity could include site preparation, construction, reinstatement, operation and decommissioning. It would also encompass planned routine activities; planned, but non-routine activities; and unplanned or accidental events.

Within this ESIA, an impact is defined as 'Any change to the physical, biological or social environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services'. An impact may result from any or all Project activities.

Project activities give rise to issues, which in turn could then cause an impact to an environmental or social receptor. Table below illustrates the links between activity, issue and potential sources of impact. All activities and associated issues have been identified. Generic Project issues and potential impacts, and route or site-specific issues and potential impacts are tabulated below.

The impacts were evaluated by applying the methodology as described below. The impact is defined and the significance is rated from Low to High as indicated in the table below with an explanation of the impact magnitude and a guide that reflects the extent of the proposed mitigation measures deemed necessary. Significance Rating is explained in *Table 2* below.

Significance	Low	Low -Medium	Medium	Medium - High	High
Impact Magnitude	Impact is of very low order and therefore likely to have very little real effect. Acceptable.	Impact is of low order and therefore likely to have little real effect. Acceptable.	Impact is real, and potentially substantial in relation to other impacts. Can pose a risk to company	Impact is real and substantial in relation to other impacts. Pose a risk to the company. Unacceptable	Impact is of the highest order possible. Unacceptable. Fatal flaw.
Action Required	Maintain current management measures. Where possible improve.	Maintain current management measures. Implement monitoring and evaluate to determine Potential increase in risk. Where possible improve	Implement monitoring. Investigate mitigation measures and improve management measures to Reduce risk, where possible	Improve management measures to reduce risk.	Implement significant mitigation measures or implement alternatives

Following is a short description of the assessment criteria as mentioned above:

- The **Nature of impact** is a broad indication of what is being affected and how.
- **Severity** relates to the nature of the event, aspect or impact to the environment and describes how severe the aspects impact on the biophysical and socio-economic environment.

Table 3 below explains the **Severity Rating** used.

Type of Criteria	1	2	3	4	5
Quantitative	0-20%	21-40%	41-60%	61-80%	81-100%
Qualitative	Insignificant / Non-harmful	Small /potentially harmful	Significant/Harmful	Great/ Very harmful	Disastrous Extremely harmful
Social/ Community response	Acceptable / I&AP satisfied	Slightly tolerable /Possible objections	Intolerable/ Sporadic complaints	Unacceptable / Widespread complaints	Totally unacceptable / Possible legal action
Irreversibility	Very low cost to mitigate / High potential to mitigate impacts to level of	Low cost to mitigate	Substantial cost to mitigate/Potential to mitigate impacts/ Potential to reverse impact	High cost to mitigate	Prohibitive cost to mitigate/ Little or no mechanism to mitigate impact Irreversible

	insignificance / Easily reversible				
Biophysical (Air quality, water quantity and quality, waste production, fauna and flora)	Insignificant change / deterioration or disturbance	Moderate change / deterioration or disturbance	Significant change / deterioration or disturbance	Very significant change / deterioration or disturbance	Disastrous change / deterioration or disturbance

Extent refer to the spatial influence of an impact be local (extending only as far as the activity, or will be limited to the site and its immediate surroundings), regional (will have an impact on the region), national (will have an impact on a national scale) or international (impact across international borders). The Extent Rating is shown in *Table 4* below.

Rating	Description
1: Low	Immediate, fully contained area
2: Low-Medium	Surrounding area
3: Medium	Within Local Municipal area of responsibility
4: Medium-High	Within Provincial area of responsibility
5: High	Regional, National, International

Frequency refers to how often the specific activity, related to the event, aspect or impact, is undertaken. The Frequency Rating is shown in *Table 5* below.

Table 5: Frequency Rating

Rating	Description
1: Low	Once a year or once/more during operation
2: Low-Medium	Once/more in 6 Months
3: Medium	Once/more a Month
4: Medium-High	Once/more a Week
5: High	Daily

Probability considers the likelihood of an impact/incident occurring over time; it is shown in *Table 6* below.

Rating	Description
1: Low	Almost never / almost impossible
2: Low-Medium	Very seldom / highly unlikely
3: Medium	Infrequent / unlikely / seldom
4: Medium-High	Often / regularly / likely / possible

5: High	Daily / highly likely / definitely
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Duration: Duration refers to the amount of time that the environment will be affected by the event, risk or impact, if no intervention e.g. remedial action takes place. Duration Rating is explained in *Table 7* below.

Table 7: Duration

Rating	Description
1: Low	Almost never / almost impossible
2: Low-Medium	Very seldom / highly unlikely
3: Medium	Infrequent / unlikely / seldom
4: Medium-High	Often / regularly / likely / possible
5: High	Daily / highly likely / definitely

13. SUMMARY OF THE FINDINGS AND RECOMMENDATIONS OF SPECIALISTS

The following specialist studies and specialist were undertaken during the ESIA phase:

The findings and recommendations of specialists are tabulated in *Table 8* below

SPECIALIST STUDIES	FINDINGS	RECOMMENDATIONS
<p>Palaeontological and archaeological impact assessment</p>	<ul style="list-style-type: none"> - There is no evidence of intact or capped Stone Age archaeological material or Quaternary fossil remains within the confines of the affected area. - There is no indication of prehistoric structures or rock engravings within the footprint areas. - There is no evidence of (informal) graves, graveyards or historical structures within the affected areas. - It is also unlikely that the proposed development will significantly impact on the potentially fossil-bearing bedrock. - The terrain is not considered paleontologically or archaeologically vulnerable; therefore there are no major archaeological or Palaeontological grounds to suspend the proposed development. 	<ul style="list-style-type: none"> - The site can be accessed for development. - No recommendations outlined in the report.
<p>Traffic Impact Survey</p>	<ul style="list-style-type: none"> - Existing road and traffic conditions on the major road network in the vicinity of the site are moderate. - No informal roads are used to access the proposed site. - Some potholes do occur that needs to be rectified. - Traffic generated from the proposed site will be comfortably accommodated by the existing road system. - all analysed intersections are expected to operate at acceptable level of service - Intersections identified in the study area are in fair conditions, with stop signs not visible and not available. 	<ul style="list-style-type: none"> - Suitable access to the proposed development is possible. This access will require to be constructed to an appropriate standard in order to ensure traffic safety and be operationally efficient. - This access should be designed and constructed to the suit and accommodate light vehicle, the design to be carried out by a registered professional and submitted to the Otjiwarongo local municipality for approval
<p>Geotechnical Report</p>	<ul style="list-style-type: none"> - The slope of the site is relatively flat. - No characteristics of ground slope instability were observed on site. - No ground or surface water was encountered during the investigation. 	<ul style="list-style-type: none"> - Drainage provided on site should be sufficient in terms of general requirements and design

	<ul style="list-style-type: none"> - No erosion was evident during the investigation. - Medium excavations can be expected but no blasting operations are fore seen. - Copious amount of ants was found in various test pits. 	<ul style="list-style-type: none"> life. - A contour map be utilised to determine the best possible design in terms of drainage. - The transported material found in the first 500mm should be saturated with water and compacted with an impact roller or rammer to ensure a collapse prior to the construction of any structures. - Heaving clays must be considered during the design phase.
Bulk Service Report	<ul style="list-style-type: none"> - No servitudes registered on the property. - The bulk water supply to the development will be provided by Otjiwarongo Municipality as a water service provider ` - The water supply will be supplied from a bulk water reservoir - The development will be provided with water born sewerage with preferably midblock sewers. 	<ul style="list-style-type: none"> - Capacity of the sewer works could be increase by reducing the amount of infiltration into the outfall sewer and hence the works. - A need for Outfall sewers upgrading is required to accommodate the additional flows due to existing capacity in main outfall sewers. - Non-ferrous materials should be used for services piping due to soil conditions. - Outlined drainage measures must be implemented. - The development should be served by a conventional stormwater drainage system consisting of inlet structures and underground pipes in conjunction with roadways as well as open channels. - The runoff shall be attenuated by means of stormwater detention facilities.
Electrical Services Report	<ul style="list-style-type: none"> - The proposed township establishment falls within the electricity supply area of NamPower. - The 88kV ring feed has no voltage constrains NamPower can connect any additional customers 	<ul style="list-style-type: none"> - The internal network distribution will be done as a Developers Project, meaning that the developer will erect and built the complete network according to NamPower General

	<ul style="list-style-type: none">- The approved 88kV network strengthening is still going to continue and includes the rebuilding of the feeder line- The developer will pay NamPower a Distribution Standard Connection Fee which will include the supply of the pre-paid meters. This only becomes applicable when capacity is available.	Standards and after completion thereof be handed over to NamPower for operation and maintenance.
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14. ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

The term “environment” is used to describe the total integrated environment, which includes aspects of the natural, economic and social environment. Environmental issues identified for this project are listed in *Table 9* below. The nature and significance of these identified impacts will be addressed in the EMP and specialist’s input will be incorporated where necessary.

TABLE 9: IDENTIFIED ENVIRONMENTAL ISSUES

ENVIRONMENTAL ISSUE	POSSIBLE IMPACT	EXTENT AFTER MITIGATION
Geology and Soils	Loss of topsoil during the operational phase due to erosion.	Site Specific
	Loss of topsoil during the construction period.	Site Specific
Socio-economic structure of the area	Potential impact of the infrastructure on the socio-economic structure of the area (Positive Impact).	Local
	Employment of local communities (AR).	Regional
	Noise created by the construction.	Site Specific and Surroundings
Cultural, Historical and Archaeological aspects	Potential damage or destruction to undiscovered heritage sites in the area.	n/a (No artefacts found)
Traffic	Potential impact due to the increase in Traffic	Local
Fauna	Potential impact of sensitive habitat destruction	Local
Flora	Potential impact of destruction of red data plants	Local

15. ASSUMPTIONS, UNCERTAINTIES OR GAPS IN KNOWLEDGE

ASSUMPTIONS:

- The scope is limited to assessing the potential impacts associated with the proposed development; therefore the effect on the surrounding environment is based on the current land use.
- All information provided by Extra Times Consulting CC and Specialists involved is deemed valid and correct at the time it was provided.
- Since during the public participation process, no indigenous local knowledge came forth, it is assumed that there are no sensitive cultural, e.g. heritage sites on the proposed site.
- Based on the layout, the existing wetland won't be affected by construction activities.

ASSUMPTIONS FROM SPECIALISTS:

- The Outline Scheme Report is based on the bulk services information received from Usakos Town Council

LIMITATIONS/GAPS IN KNOWLEDGE: None

16. ESIA RECOMMENDATIONS

The ESIA is of the opinion that the development should be authorized and developed because the anticipated environmental and social negative impacts can be mitigated to a satisfactory level. However, the following recommendations should be considered:

1. Relocation of probable livestock enclosures to a suitable position, according to the municipal councillors that has been arranged.
2. Loss of topsoil during construction phase should be avoided to a greater extent.
3. The municipality should consider planting of grasses and trees, especially at the public open spaces (erven) to promote sustainable developing / greening and to minimize soil exposure, which could result in accelerated soil erosion process.
4. Proper and timeous maintenance of roads and streets.
5. Proper management procedures and mitigation measures must be implemented as outlined in the EMP.
6. Environmental Officer should be appointed for monthly environmental compliance monitoring during the construction phase.
7. Recommendations from specialists should be considered and adhered to

17. ENVIRONMENTAL MANAGEMENT PLAN OR STATEMENT

An EMP is a site-specific plan developed to ensure that all necessary measures are identified and implemented in order to protect the environment and comply with environmental legislation (Landcom, 2014). It should be recognized that no development could be completed without impacting in some way on the environment; therefore, it is imperative that negative impacts are minimized to a greater extent.

A site-specific EMP must be prepared for the establishment of a township - portion A of the remainder of the portion 4 of farm Usakos-Ost no 64. Usakos. It provides the answers to the following important questions:

- What are the likely environmental issues for your site?
- What likely harm these issues can cause to the surrounding environment?
- How will you manage these issues to minimize harm to the environment?

During the scoping phase of the ESIA process, the environmental issues that were identified were for both the construction and operation phase.

The identified impacts are summarized below:

1. Loss of topsoil;
2. Potential habitat of the infrastructure on the socio-economic structure of the area.
3. Job creation looking at employment of local community;
4. Excessive noise generation during construction;
5. Potential damage or destruction to undiscovered heritage sites of the area;
6. Traffic congestion during construction;
7. Potential impact of sensitive habitat destruction; and
8. Potential impact of destruction on red data plants.

From the evaluation identified impacts using the assessment methodology, the significance ratings of negative impacts were reduced to low with outlined mitigation measures and the positive impacts were accentuated. The extent with mitigation ranged between site specific and local. Adherence to the draft EMP will also ensure that impacts occurring due to the development will be reduced to a greater extent.

To determine the ability of the municipality to provide basic services to the proposed development, a Motivation Report and Bulk Services Report are attached hereto and recommendations were made so as to promote sustainable development. In terms

of the findings, the Usakos Town Council has the ability to accommodate the proposed site as it is already factored in the Town planning Scheme, with adequate 'municipal "services.

Specialists' studies that were undertaken as part of the ESIA process included a geotechnical investigation to determine whether the land is suitable for human settlement and to give foundation recommendations, and a heritage impact assessment to inspect the site for any possible archaeological and historical material and Paleontological Investigation to determine the likelihood of fossil preservation in the area. Accordingly, there are no major palaeontological and archaeological grounds to suspend the proposed development, therefore no mitigation measures are required but mitigation is provided in the EMP in case there is unearthing of fossils, grave sites, etc. during earthmoving activities.

The proposed site is suitable for a residential development because it is compatible with the surrounding area, easily accessible and availability of connection points to services, e.g. water, electricity. The development will enable the Usakos Town Council to decrease their housing development backlog and minimize the formation of illegal settlements on areas not considered for residential planning and to provide basic amenities, e.g. church, sport ground, and parks. The future residents will have proper shelter and access to basic services and in turn their livelihood and wellbeing will be improved.

During the public participation, no objections were received.

A no-go option for this project is not feasible because the site has been earmarked for residential development and it is an extension of existing residential areas therefore connections to basic amenities like water and sewerage are economically feasible.

The Environmental Management Plan (EMP) identifies possible impacts of the project on the environment and the mitigation thereof. It gives guidelines to the responsible person(s) to follow appropriate contingency plans in the case of various possible impacts, thus the copy of the EMP should be given to the contractor to ensure adherence. The Draft EMP is attached hereto as **Appendix 1** and should it be approved, it will serve as the final EMP.

18. REFERENCES

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MAP 1: USAKOS: PROPOSED ZONING MAP

MAP 2:

TOWNSHIP ESTABLISHMENT - PORTION A OF THE REMAINDER OF THE FARM USAKOS TOWNLANDS NO 1346 COMPRISING OF 358 ERVEN & REMAINDER TO BE KNOWN AS USAKOSEXTENSION 2