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Scoping Assessment Study for the Rezoning of Erf 688 from Public Open Space to Business

Report

Version - Final

18 May 2016

Planet Rose Properties

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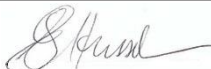
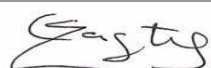
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EXECUTIVE SUMMARY

Planet Rose Properties (The Proponent hereafter) proposes to rezone a portion of Erf 688, located in Millennium Park, Ndama Extension 1 in Rundu (Kavango East Region) from Public Open Space to Business. The Erf will be subdivided as follows:

- Portion A - approximately 4 800 m² will be developed as a business area; and
- The remainder - approximately 900 m² will remain Public Open Space (see proposed site layout in **Figure 2-2** and **Figure 2-4**).

The proposed project site is located in the centre of a residential block near the intersection of Independence Avenue and Safari Street (**Figure 2-3**). The coordinates for the site are 17°55'11.8''S 19°47'11.2''E.

The Rundu Town Council has approved the rezoning of Erf 688 under the following conditions:

- The Developer is to cater for some of the amenities proposed by the concerned residents within the shopping complex;
- The Developer is to plan, develop and maintain a children's playground on the Remainder of Erf 688, Ndama Ext.1;
- The Developer is to appoint sufficient security guards at the shopping complex to ensure no alcohol and drug abuse takes place on the premises;
- The selling of liquor/alcohol is to be prohibited at the shopping complex;
- Traffic calming methods are to be introduced on the streets surrounding the shopping complex to ensure the safety of the residents;
- Pedestrian walkways and crossings are to be provided to ensure a safer environment;
- Sufficient parking is to be provided for taxi's and other vehicles;
- Off-loading facilities are to be well located so as to prevent trucks from interfering with traffic flow and to prevent noise from idling while off-loading; and
- A public meeting is to be held by the Council with the concerned residents to explain the above mitigation measures and should the measures be found to be sufficient, the concerned residents are to provide a letter in which their objections are withdrawn.

Public meetings were held between the Rundu Town Council (RTC) and some of the property owners adjacent to the proposed site during 2013 and 2015 through various meetings and delivery of information in the form of letters. These meetings served as a platform for the neighbouring property owners to find out more about the proposed development and an opportunity to raise any issues or concerns.

The issues and concerns by the public in the meetings are addressed in this scoping report, which will be submitted to the Environmental Commissioner in an application of an Environmental Clearance Certificate (ECC).

The main issues that arose during RTC and property owners meetings were:

- Health risks due to the dumping of waste materials and other sewage wastes;
- Noise pollution during the construction and operation phase;
- Safety risks associated with the influx of people in the residence during operation phase of the business area (resulting in the potential increase in crime rate); and
- Increased traffic during construction and operation phases.

The scoping report has been compiled and it was made available to the public (I&APs) for review online and for those without internet access, the report was made available in hard copies at the Rundu Town Council and one of the neighbouring property owners in the Millennium Park residence, Rundu. The notice of the availability of the scoping report was put up on the RTC notice board (see 2nd (second) photo in **Appendix I**). The registered I&APs were informed of the report's availability. The scoping report review period stretched from the 29th of April 2016 until the 16th of May 2016. There were no comments received from the public during this period.

The following were regarded as main impacts of concern related to the proposed development:

- **Impact on Safety (construction phase):** Potential Injuries (heavy construction vehicles and machines) to children that may play in the streets or at their usual play site (proposed site), that is to be developed.
- **Impact on Groundwater:** Potential contaminants such as hydrocarbons and waste water / effluent that will be produced on site during construction (if not handled properly) may seep into groundwater systems.
- **Impact on Vehicular Traffic:** Impact on traffic safety and heavy vehicles roaming around the area. Heavy construction vehicles will exert pressure on local roads.

- **Impact on Health and Safety (during operational phase):** Noise pollution associated with the business area daily activities (people and vehicles) could be a nuisance to surrounding neighbours. There is a potential risk of increased crimes, due to the influx of people in the area, which is likely for any type of business development.
- **Impact on Health and Safety (construction and operational phase):** There is an inconvenient impact of noise (nuisance impact) associated with the construction and operational phase at the business area daily activities. Potential Injuries (by heavy construction vehicles and machines) to children that may be playing in the streets or hang around proposed site during construction. There is also potential increase in crime rate, due to the influx of people in the residence, which is likely for any type of business development. And lastly, potential risk of house breaking and vandalism of residential properties by the general public hanging around the business area when it is fully operational.
- **Impact on Existing Services infrastructure (operational phase):** The influx of people into the area for business purposes and other reasons in the business area will impact the existing services infrastructure. The increased population will potentially exert pressure on the town's services provision like water demand, electricity, sewage network and roads to maintain the growing population. Waste will be generated by occupants of the business area. This will result in an increase in sewage waste and place strain on existing residential wastewater networks.

GCS is of the opinion that the above-mentioned impacts can adequately be addressed by implementing the mitigation measures provided in Chapter 7 of this report and detailed in the Environmental Management Plan (EMP) (**Appendix B**). As such, GCS recommends that the proposed development, as described in Chapter 2 and the following associated activities receive an Environmental Clearance Certificate, provided that the EMP is implemented and that the amenities proposed by the concerned and affected residents and conditions set by the Town Council are complied with.

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ABBREVIATIONS

AHT	AHT Group AG Management and Engineering Consulting firm
DEA	Department of Environmental Affairs
EA	Environmental Assessment
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
Ext 1	Extension 1
GG	Government Gazette
GN	Government Notice
HDI	Human Development Index
I&APs	Interested and Affected Parties
MTC	Mobile Telecommunications Limited
NORED	Northern Regional Electricity Distributor
Reg	Regulation
RTC	Rundu Town Council
S	Section
SADC	Southern Africa Development Community
SAIEA	Southern African Institute for Environmental Assessment

1 INTRODUCTION

1.1 Background

Planet Rose Properties (The Proponent hereafter) proposes to rezone a portion of Erf 688, located in Millennium Park, Ndama Extension 1 in Rundu (Kavango East Region, Namibia) from Public Open Space to Business. The Erf will be subdivided as follows:

- Portion A - approximately 4 800 m² - will be developed as a business area; and
- The remainder - approximately 900 m² - will remain Public Open Space (see **Figure 2-2** and **Figure 2-4**).

The proposed site is located within a residential area of Millennium Park (Ndama Extension 1) near the intersection of Independence Avenue and Safari Street (**Figure 2-3**). The coordinates for the site are 17° 55' 11.8''S 19° 47' 11.2''E.

Under the Regulations (2012) of the Environmental Management Act (7 of 2007), section 5.1, the proposed development is a listed activity that may not be undertaken without an Environmental Clearance Certificate (ECC):

“The rezoning of land from - Use for nature conservation or zoned open space to any other land use”.

GCS Water Environmental Engineering Namibia (Pty) Ltd (GCS hereafter), has been appointed by Planet Rose Properties as independent environmental consultants to conduct the required Environmental Assessment (EA) (which includes public consultation). The reports produced as part of the EA process will be submitted along with an application for an ECC to the Environmental Commissioner at the Department of Environmental Affairs (DEA) of the Ministry of Environment and Tourism.

Fredrika Shagama, a qualified Hydrogeologist, conducted this EA process under the supervision of Sheldon Husselmann, a qualified and recognised Environmental Assessment Practitioner (EAP) (see **Appendix A** for CV).

1.1 Need and desirability of the project

The distance from the neighbouring residential areas (i.e. Millennium Park, Safari, Kehemu, Tuhingireni, Ndama and Kaisosi) to the nearest shopping centre (business area) of comparable size, is about 10 km. The rezoning of Erf 688 to business erven will enable nearby residents to travel short distances for business purposes, access essential services such as bank ATMs, electricity vending machines and attend to personal needs. The shorter distances will also reduce travelling costs to shopping centres.

Furthermore, it is anticipated that the proposed business area would also create some job opportunities which will generate some income for local residents. Direct temporary employment opportunities will be created during the construction phase as well as temporary and permanent direct employment during the operation phase. This will contribute to the economic growth and diversification of the town's economic activities.

1.2 Scope of Work

This scoping study was carried out in accordance with the Environmental Management Act (EMA) (7 of 2007) and its EIA Regulations (GG No. 4878 GN No. 30).

After submitting an application for ECC to the DEA, the first stage in the EA process is to submit a scoping report. This report provides a description of the following:

- The need and desirability of the project (as described in subchapter 1.1);
- Project description (proposed activity and the need for this activity / development (chapter 2);
- The relevant laws and guidelines that relate to the proposed activities (chapter 4);
- The public consultation process followed (chapter 7) (as described in Regulation 7 of the Act) whereby interested and affected parties (I&APs) and relevant authorities are identified, informed of the proposed activities and provided with a reasonable opportunity to give their concerns and opinions on the activities;
- Any potentially significant environmental impacts associated with the project and an assessment of these impacts (chapter 7.2); and

Mitigation measures and recommendations to avoid or minimize the potential impacts (chapter 7.2). These mitigation measures are further outlined in the EMP (**Appendix B**).

The next chapter will be focusing on the description of the proposed development and its activities.



Figure 2-2: Location of Erf 688 in Ndama Extension 1 with Portion A and The remainder of the erf.

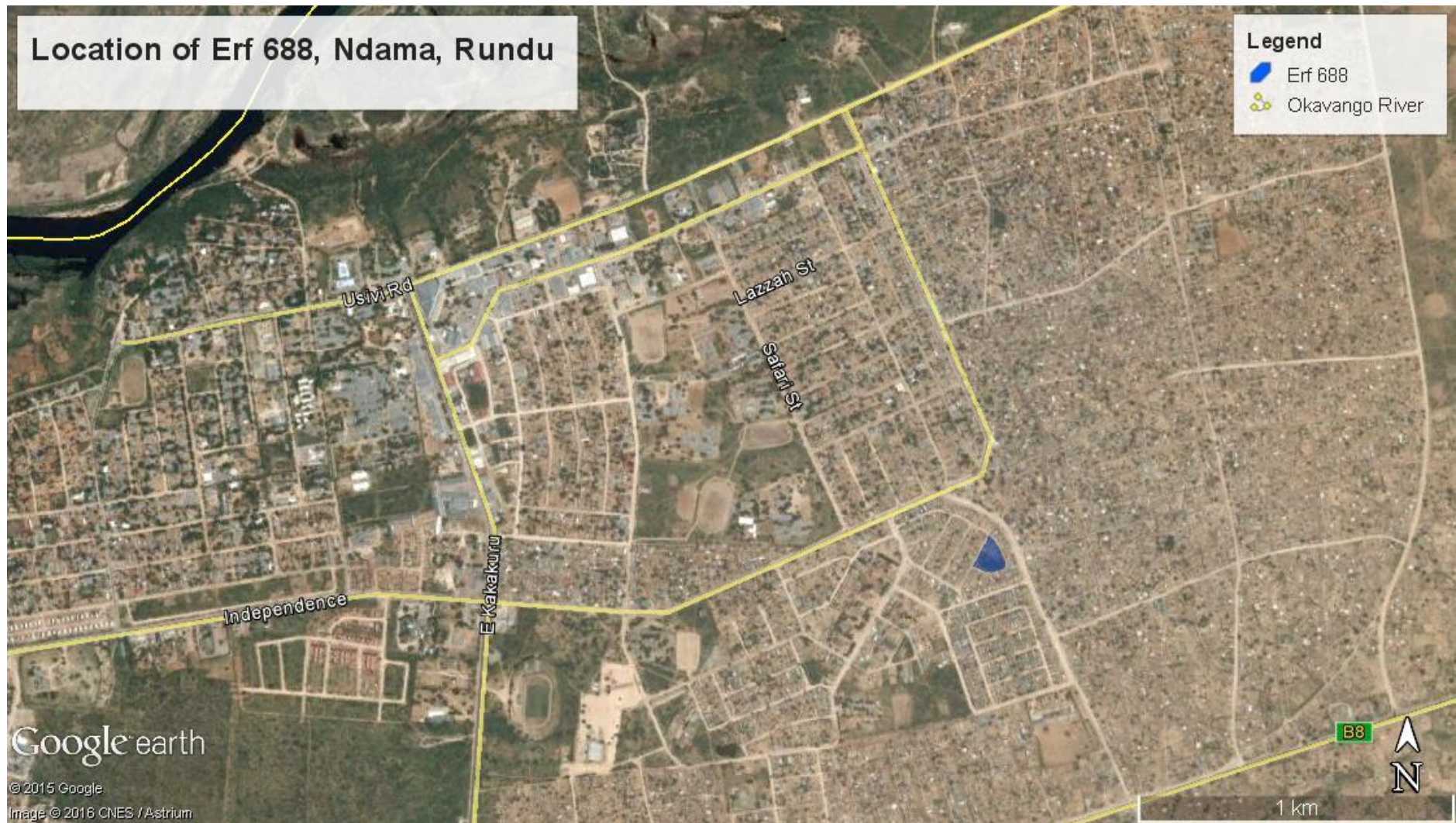


Figure 2-3: Location of Erf 688 (blue), Millennium Park, Ndama in Rundu

2.1 Construction Phase

During construction phase, earth works will be carried out in certain areas of the project site in order to install the necessary services infrastructure. This will require the clearing and removal of existing vegetation, soil excavation and the movement of heavy construction equipment. Temporary employment opportunities will be created - approximately 50 to 100 people will be employed during this phase.

The construction workers are expected to be housed in the town district and not on the site.

The following activities will take place, in terms of infrastructure and service provision:

- Installation of potable water pipelines;
- Installation of wastewater disposal pipelines; and
- Installation of electrical cables for power supply. The cables will be underground to connect to the electric kiosk, nearby.

The appointed contractor will construct a temporary boundary wall (most probably using corrugated iron sheets) to minimise air and noise pollution as well visual impacts. The wall will also provide access control to the construction site. Construction waste will be kept on-site during construction and removed on a regular basis to Rundu Town Council solid waste management facility.

Water for construction purposes will be sourced from the existing municipal network (the Proponent will buy water for construction from the municipality). A water meter will be connected to an off-take connected to the nearest existing bulk potable water pipeline. There is a bulk water supply dam located less than 1 km from the proposed site. Water-pressure in the areas adjacent to the proposed site will decrease owing to the increase in demand attributable to the future business activities on the proposed site. Electricity will be supplied by the northern regional electricity distributor (Nored).

The proposed site is surrounded by a gravel road and has two existing access points.

The road surrounding Erf 688 will either be tarred or interlocked. A parking area, accommodated within Portion A, will be constructed and accessed by private internal road. In addition, speed humps will be constructed 30 m from each access point in order to facilitate traffic calming.

2.2 Operation Phase

Once Erf 688 has been subdivided and rezoned it will consist of Portion A, zoned Business (indicated by the blue area - south) and the remainder of Public Open Space (indicated by the green area - north) are shown in the proposed site layout in **Figure 2-4**. Erf 688 is located in a municipal zone and therefore services like refuse removal and water will be provided for by the municipality once all infrastructure has been connected to the bulk municipal services.

According to the Rundu Town Planning Scheme (RTPS), the definitions of “Business premises”, “Bottle Store” and “Public Open Space” are as follow:

- **Business Premises** means a site or building or structure on or in which business is done and includes shops, offices, financial institutions or restaurants or site, buildings or structures for similar uses, but does not include places of assembly or entertainment, institutions, service stations, public garages, industries, noxious trades or bottle-stores.
- **Bottle Store** means a shop in which mainly alcoholic beverages are sold in the retail trade and includes an off-sales facility that is under the same management as a licensed hotel.
- **Public Open Space** means land which is under or will be under the ownership of a local authority, which is not leased nor will be leased on a long-term basis, and which is utilised or will be utilised as an open space or a park, garden, picnic area, playground or square and includes a public place.

A few direct long-term employment opportunities will be created once the land has been rezoned business and the intended shopping centre is constructed.

The implications of the rezoning include:

- The privatisation of public space; and
- The provision of land with the potential to be utilised for various commercial activities.



Figure 2-4: Proposed site layout - Portion A (south/blue) and remainder of Public Open Space (north/green). Source: Rundu Town Council

The next chapter (Alternative and No-Go option) will outline the alternative land uses and the No-Go / No-Action option to the rezoning of Erf 688 from Public Open Space to Business area.

3 ALTERNATIVES AND THE NO-GO OPTION

According to the Planet Rose Properties, there has not been any request from any individual or organisation concerning the land usage of Erf 688, except that it was demarcated by the Rundu Town Council as a Public Open Space.

Erf 688 has been a Public Open Space for several years. The RTC has not been able to develop it into a functional recreational space because to date there have been more pressing development issues competing for the funds available in the RTC budget. The Rundu Town Council confirmed that they did not consider other alternative land uses for Erf 688, and it remained Public Open Space until they were approached by Planet Rose Properties with the proposal of rezoning it into a business area.

The “No-Go” alternative is the option of not proceeding with the activity, which implies a continuation of the status quo. Should the proposed development not go ahead, none of the potential impacts (positive and negative) identified would occur. However, it was observed that due to high rainfall, the grass and trees have overgrown to a dense proportion and this reduces visibility and therefore the site is becoming a security threat. Should the site be left as Public Open Space, it could potentially be used by criminals in the area as a hiding place. This would be unsafe for the residents and the children that play in this area. Information has been provided that, the place is already being used as a hiding place for criminals that break into houses and also for drug use and other illegal activities.

For the reasons outlined above, the rezoning of Erf 688 is the preferred option.

These above-mentioned alternatives to the proposed development have legal implications, and these are discussed in the next chapter.

4 LEGISLATION, POLICIES AND GUIDELINES

This chapter provides a review of applicable and relevant Namibian legislation, policies and guidelines. This review serves to inform the proponent of the requirements and expectations, as laid out in terms of these instruments, to be fulfilled before the proposed project may commence. The following legislation and standards should be adhered to before the commencement of the proposed development.

As mentioned earlier, this scoping assessment was carried out in accordance with the Environmental Management Act (EMA) (7 of 2007) and its EIA Regulations (GG No. 4878 GN No. 30).

The EMA has stipulated requirements and timeframes to complete the required documentation in order to obtain an Environmental Clearance Certificate (ECC) for permission to undertake certain listed activities.

4.1 Rundu Town Planning Scheme guideline

The Town Planning Scheme guideline was consulted and with regards to the “Transfer of Closed Streets and Public Open Space”. The Town Planning Scheme is a statutory document, regulating and prescribing specific land-uses that are permissible on each land unit located within the Town Council’s area of jurisdiction. In clause 6.17 of the Town Planning Ordinance (18 of 1954), it states that:

“Where any piece of land which was previously a street or a Public Open Space vested in or owned by the Council is closed and transferred to an abutting owner, such piece of land shall be deemed to fall into the same use zone and sub-zone as those into which the abutting land owner by such owner falls.”

In clause 6.14.3 it states that: *“Land reserved as streets and Public Open Space, under the “Civic Reserve” zoning, may continue to be used for the purpose for which it was used on the date when the Minister gave notice of his approval of this. Scheme by proclamation, until such time as the Council in terms of the Ordinance or any other law requires the owner to use or set aside such land for the purpose for which it is reserved or until the land has been transferred to the Council or to the authority for whose purpose it has been reserved.”*

The provisions of most important, in terms of guiding this EA process are contained in **Table 4-1**.

Table 4-1: Applicable and relevant Namibian legislations, policies and guidelines guiding the EA process

Legislation/Policy/Guideline	Relevant Provisions	Implications for this project
Environmental Management Act EMA (No 7 of 2007)	Requires that projects with significant environmental impacts 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.
Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 4878)	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 12 of 2001	The Act provides for the management and use of forests and related products / resources. It offers protection to any living tree, bush or shrub growing within 100 metres of a river, stream or watercourse on land that is not a surveyed erven of a local authority area. In such instances, a licence would be required to cut and remove any such vegetation. These provisions are only guidelines.	This could only be applicable if the site was located outside the jurisdiction of the local authorities and trees that might be impacted on are in close proximity to watercourses. However, there are several trees and grass covering the area. The proponent should notify the Town Council of the number and/or type of trees to be removed to allow construction and apply for permit to remove protected species.
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: <ul style="list-style-type: none"> Prohibits the pollution of underground and surface water bodies (S23 (1)). 	The protection of ground and surface water resources should be a priority. The main threats will most likely be possible spills from construction equipment, during operation and maintenance.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	<ul style="list-style-type: none"> Liability of clean-up costs after closure/abandonment of an activity (S23 (2)). 	
Health and Safety Regulations GN 156/1997 (GG 1617)	Details various requirements regarding health and safety of labourers.	Planet Rose Properties should ensure that all contractors involved during the construction and operation (and maintenance) of the proposed project comply with the provisions of these legal instruments.
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.”	
Atmospheric Pollution Prevention Ordinance (11 of 1976)	This ordinance provides for the prevention of air pollution.	Measures should be instituted to ensure that dust emanating from construction, operation and maintenance activities is kept at acceptable levels and operations.
Soil Conservation Act (No 76 of 1969)	The Act makes provision for the prevention and control of soil erosion and the protection, improvement and conservation of soil, vegetation and water supply sources and resources, through directives declared by the Minister.	Duty of care must be applied to soil conservation and management measures must be included in the EMP.
The Regional Councils Act (No. 22 of 1992)	This Act sets out the conditions under which Regional Councils must be elected and administer each delineated region. From a land use and project planning point of view, their duties include, as described in section 28 “to undertake the planning of the development of the region for which it has been established with a view to physical, social and economic characteristics, urbanisation patterns, natural resources, economic development potential,	The relevant Regional Councils are considered to be IAPs and must be consulted during the Environmental Assessment (EA) process.
Local Authorities Act (No. 23 of 1992)		

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
	<p>infrastructure, land utilisation pattern and sensitivity of the natural environment.”</p> <p>The main objective of this Act is to initiate, supervise, manage and evaluate development.</p>	
Labour Act (No. 6 of 1992)	Ministry of Labour (MOL) is aimed at ensuring harmonious labour relations through promoting social justice, occupational health and safety and enhanced labour market services for the benefit of all Namibians. This ministry insures effective implementation of the Labour Act no. 6 of 1992.	The Proponent should ensure that the contractors / workers' safety and social welfare (during construction and operation phases) are not compromised.

The next chapter will briefly discuss the general baseline (biophysical and social) information of the region in which the project site is situated and the specific biophysical and social features that will be potentially affected by the rezoning of Erf 688.

5 BASELINE ENVIRONMENT

The information given in this chapter has been sourced from secondary literary sources - websites and existing reports/studies conducted within the broader study area.

5.1 Biophysical Environment

5.1.1 Rainfall

Situated in north-eastern Namibia, the Kavango East Region enjoys generally more rainfall than the rest of the country to the south and west. Annual average rainfall varies between about 450 and 600 mm, with a clear increasing trend from south to north. Rains fall almost entirely in summer, with the months from May to September usually being dry, and the first early rains coming to the region in October and November. Highest rainfalls usually occur in January and February. (Stubenrauch Planning Consultants, Geocarta Namibia, SAIEA, AHT Group AG, 2015).

5.1.2 Temperature, Evaporation and Wind

The Kavango East is usually warm to hot. Average maximum temperatures are above 30 °C for nine months of the year, and average minimums are below 10 °C during the coolest months June, July and August. Temperatures below freezing are occasionally recorded but are rare and are usually only experienced in low-lying valleys such as found along the Kavango River and Omurambas (Stubenrauch Planning Consultants, Geocarta Namibia, SAIEA, AHT Group AG, 2015).

The warm dry conditions mean that evaporation is high. Rundu, for example, can expect to get 590 mm of rain (the annual average), with a potential evaporation of about 2000 mm. Wind speeds are generally very low, and in most months, it is completely calm for over half the time. The potential for wind power, and wind-driven water pumps, is small.

5.1.3 Air Quality

The major current atmospheric dust emissions in the area are primarily generated by the vehicles travelling on gravel roads.

5.1.4 Surface and Groundwater

Surface water in Namibia is generally very limited and regarded as precious resources where they are available all year round.

According to (Christelis, 2001), groundwater within the wider area of the proposed project site, is hosted in two distinct aquifer systems, Kalahari aquifers and fractured bedrock aquifers. These two aquifers are treated separately here as they have different characteristics. Kalahari aquifers hold water in intergranular pore spaces, whereas water in fractured aquifers is held in cracks and fractures in otherwise impermeable strata. Kalahari aquifers are common in the Kavango Regions.

Drilling success rates, defined as the percentage of borehole yields more than 1 m³/h, are commonly 100% in areas of Kalahari aquifers, whilst lowest success rates than 25% are common for fractured aquifers beneath thick unsaturated Kalahari layers.

Groundwater in the Kalahari is relatively easy to locate throughout most of the north-western and central Tsumkwe and the Kavango Region.

5.1.5 Fauna and Flora

The area is covered by trees, a few Camel Thorn Trees (*Acacia erioloba*), which is a protected species, and grass that may provide a habitat for common mammal, reptile and bird species. From a biodiversity point of view, the site is degraded. The density of people in the region, existing infrastructure such as roads and homesteads in the area has resulted that there has been a migration of conservation worthy species from the area. Rundu has a low endemism but high diversity of birds, amphibians, plants and large mammals. The town of Rundu is situated on the wall of the Okavango River in the Okavango valley. The area is known to be of Namibia's most densely vegetated areas composed of floodplain grasslands and lush woodlands. The specific area earmarked for the development, however represents a small fraction of the overall ecosystem in the surrounding environment.

5.2 Social Environment

5.2.1 Introduction

Rundu is the capital and largest town of the Kavango Regions (Kavango East and West) located in the northeast of Namibia along the Kavango River. Not only is it the capital of the Kavango Region but is also the second largest town in Namibia, in terms of population size.

It lies in an important strategic position as the gateway linking a number of important Southern Africa Development Community (SADC) countries with Namibia's port of Walvis Bay.

All road traffic from Namibia's neighbouring countries of Angola, Zambia, Zimbabwe and Botswana must route through Rundu to reach the port of Walvis Bay (Rundu Town Council, 2006).

5.2.2 Land Use

The proposed site falls within Rundu Townlands. Erf 688 is under the ownership of the Rundu Town Council.

The site is tightly surrounded by a vast number of brick houses. The area is covered by several trees and grass. Litter is a common feature on-site. Locals also use the site as a dumping ground (e.g. building rubble and garden refuse). There are several spots where fires have been made to burn garbage and tyres.

One portion of the site has been completely cleared of vegetation and is covered with fine soft sand soil. This portion is used as a small soccer field for children living in the adjacent houses.

5.2.3 Population Density and Distribution

The population of Rundu was estimated at 81 400, amounting to the total population of the two Kavango regions of 222 500 during the 2011 (National Planning Commission , 2012). The population density of Kavango regions was 4.6 persons/km² in 2011.

5.2.4 Economy

The Kavango region is the poorest region in Namibia with a Human Development Index (HDI). The HDI concentrates in the three essential factors of human life; longevity, knowledge, and a decent standard of living. The HDI of the region is 0.4, but the town is geographically located at a strategic crossroad and has, since peace and stability returned to Angola, potential to develop to a significant border town.

5.2.5 Infrastructure and Services

5.2.5.1 Rundu Town

The water network system is well equipped to cater for the needs of the residents and businesses.

The national water utility, NamWater supplies bulk water to the Rundu Town Council, which provides the water to its customers (i.e. Rundu residents). The electricity system is run by the Northern Regional Electricity Distributor (NORED).

There is a variety of business activities within the town. For security, traffic and police officers are presents 24 hours in the town and main of the shops are having their own security guards.

Concerning the communication, Telecom Namibia and NamPost are having a shop and the cellular network is well working all over Rundu thanks to MTC (mobile network).

5.3 Identification of Potential Impacts

Potential impacts of the public open space rezoning for the construction and operational phases were identified and are presented in **Table 5-1**. The assessment of negative impacts for the two phases are presented in subchapter **7.2** and **7.3**.

Table 5-1: Summary of identified potential impacts

Feature	Description of Project Activity	Potential Impact
CONSTRUCTION PHASE - POSITIVE		
Employment	The development (construction) of the business area	Temporary creation of job opportunities for local residents.
Land use	Developing the Public Open Space into a business area	The land will be developed into something useful and beneficial to the local community and the town, if not region at large.
Safety and Security		The land is covered by thick bushes and trees (reduced visibility), which is becoming a security threat. Developing the Open Space will minimise the risk of it being used by criminals for illegal and destructive activities.
CONSTRUCTION PHASE - NEGATIVE		
Soil and groundwater	Potential contaminants such as hydrocarbons spills and waste water / effluent on site during construction	Soil and groundwater contamination.
Air quality	Potential dust and gas emissions from construction vehicles, like heavy trucks and equipment.	Potential short-term decrease in air quality.
Vehicular traffic	During this phase, there will be an increase in traffic due to construction activities.	Impact on traffic safety.
Safety	Construction equipment and vehicles around the residential areas.	Potential Injuries to children that use the site as a playground.
Biodiversity	Removal of trees within the proposed project area.	Loss of biodiversity.
OPERATIONAL PHASE - POSITIVE		
Employment	Operation of the business development	Creation of job opportunities for local residents.
Socio-economic development		<ul style="list-style-type: none"> Exchanging of services for income and employment opportunities. Provision of access to business properties and addition of value to surrounding properties. The rezoning of the erf, and the eventual construction of conveniently located business activities, will reduce money spent on taxis.
Shopping safety		<ul style="list-style-type: none"> It will be safer for the residents to walk or travel by taxi in the night to and from the business area within their residence.

Feature	Description of Project Activity	Potential Impact
Local and Regional economy		<ul style="list-style-type: none"> Positive contribution to the economy of the Rundu Local Authority through business exchange services.
OPERATIONAL PHASE -NEGATIVE		
Health and safety	Waste will be generated on site by the general public that will be using the business area	<ul style="list-style-type: none"> Potential dumping of waste materials and sewage waste. An inconvenient impact of noise pollution. Potential increase in crime rate, due to the influx of people to the area. Increased traffic may lead to injuries or worse death to children that play in the streets.
	Daily traffic from and to the business area through adjacent residential areas.	<ul style="list-style-type: none"> Increased traffic compromises safety of the children that play in the streets of their homes.
Existing service infrastructure	Influx of the people into the area for business purposes and other needs.	<ul style="list-style-type: none"> Increase in the population dynamics of Rundu will potentially exert pressure on the town's service provision like water demand, electricity, sewage networks and roads.
Land use opportunity cost	If this development did not occur, Erf 688 has the potential to be developed by the RTC into a functional and aesthetically pleasing publicly accessible space	<ul style="list-style-type: none"> Loss of publically accessible land.

The next chapter will provide a description of how the public was consulted with regards to the proposed development.

6 PUBLIC CONSULTATION

Public consultation is an important component of any Environmental Assessment (EA) process. During the public consultation process, potential Interested and Affected Parties (I&APs) are provided with an opportunity to comment on and raise any issues relevant to the proposed project for consideration as part of the assessment process. Public consultation has been done in accordance with both the EMA and its EIA Regulations.

The public consultation process assists the Environmental Assessment Practitioner (EAP) in identifying all potential impacts and to what extent further investigations are needed. Public consultation can also aid in the process of identifying possible mitigations measures.

A previous EA process was undertaken for the proposed development in May 2013. During this period some form of public consultation took place (i.e. newspaper notices) but an Environmental Clearance Certificate (ECC) was not obtained. Subsequent to this EA process, objections to the proposed rezoning of Erf 688 were lodged with the Rundu Town Council (RTC) by some of the neighbouring property owners. The RTC engaged these property owners during 2014 and 2015 through various meetings (see 2013 Meeting Attendance List in **Appendix C**) and the delivery of information in the form of letters. The meetings were held on 17 September 2013, then 29 May 2014 (which was later re-scheduled to 8 June 2014) and on 16 May 2015. The objections and reasons given by the property owners were as follow (also see **Appendix D - Objections**):

- Should the Town Council develop the Space into a shopping complex, it will affect the residents with health hazards such as noise pollution from heavy traffic, dumping of waste materials to the nearest residence and other sewage wastes, which is dangerous to human health;
- The place can be developed into a recreation centre, community library or computer centre;
- The place should be developed into a children playground;
- The area should be developed for a school or for churches, since they would like to maintain that area as quiet as it is at the moment and that will benefit to the local children behaviour wise unlike if they are adjacent to a business place;
- The place will not be conducive for living, due to lack of privacy;
- increase in crime / house breaking and vandalism;
- The community pride and sense of belonging is at stake;
- Intolerant behaviours and abusing of drugs from the general public who will want to use the facilities. This will have a negative impact on children;

- The site is not conducive for commercial purposes because it is a residential area and the space will not be enough to accommodate the daily business demand of people; and
- The road facility / street to the site is too small to accommodate heavy traffic, thus will cause traffic congestion and unnecessary road accidents.

The Rundu Town Council has addressed the concerned residents' objections against the proposed development (see RTC objection addressing / project approval conditions - **Appendix E**). Proof of delivery for the addressing of the objections is presented in **Appendix F**. The following were the responses / conditions set for the development of the erf:

- The Developer (Planet Rose Properties) to:
 - Cater some of the amenities proposed by the concerned residents within the shopping complex;
 - Plan, develop and maintain a children's playground on the Remainder of Erf 688 Ndama Ext 1;
 - Appoint sufficient security guards at the shopping complex to ensure no alcohol abuse and drugs takes place on the premises;
 - Ensure no liquor / alcohol is to be permitted on the shopping complex;
 - Introduce traffic calming methods on the streets surrounding the shopping complex to ensure safety of the residents;
 - Provide pedestrian walkways and crossings to ensure safer environment;
 - Provide sufficient parking for taxis and other vehicles;
 - Well locate off-loading facilities so as to prevent trucks from interfering with traffic flow and to prevent noise from idling trucks while off-loading; and
 - A public meeting is held by the Council and the concerned residents to explain the above mitigation measures / conditions and should be measures be found to be sufficient, the concerned residents to provide a letter in which their objections are withdrawn.

The purpose of this public consultation process is to further the consultation with the neighbouring property owners and to ensure that all their concerns are heard and addressed in a scoping assessment report, which will be submitted to the Environmental Commissioner as an application for an ECC.

6.1 Interested and Affected Parties (I&APs)

GCS identified specific I&APs, whom were considered interested in and/or affected by the proposed project. The I&APs identified include; property owners adjacent to the proposed site and applicable organs of state (national, regional and local). These I&APs were contacted directly and registered as I&APs. In addition, notices regarding the project were placed in widely circulated national newspapers for two consecutive weeks inviting members of the public to register as I&APs. A summary of the I&APs identified are presented in **Table 6-1**. The complete list of I&APs is provided in **Appendix G**.

Table 6-1: Summary of identified I&APs

List of I&APs	Description
	Ministry of Environment and Tourism
	Kavango Regional Council
	Rundu Town Council
	Neighbouring property owners (to proposed project site)

6.2 Communication with I&APs

Regulation 21 of the EIA Regulations details steps to be taken during a given public consultation process and these have been used in guiding this process. Communication with I&APs about this proposed development was facilitated through the following means:

- Notices were placed in the newspapers (*The Namibian* and *New Era*) dated 11th February and 18th February 2016 (**Appendix H**), briefly explaining the activity and its locality, inviting members of the public to register as I&APs;
- A notice board was fixed at a conspicuous location along the boundary of the proposed site (see **Appendix I**);
- The Local Authority (the Rundu Town Council) has been engaging with the property owners adjacent to the proposed site during 2014 and 2015 through various meetings and delivery of information in the form of letters;
- A Background Information Document (BID) containing descriptive information about the proposed project was compiled (**Appendix J**), hand delivered to most of the neighbouring property owners and sent out via registered mail to all those property owners who did not receive a hand delivered copy). Proof of BID delivery in **Appendix K**;

- The main issues arising from the comments received during previous consultations (2013 - 2015) have been summarised in **Table 6-2**. There were no comments received during the public consultation process in 2016.

Table 6-2: Summary of issues raised during Public Meetings from 2013 to 2015

Aspect	Issue
Waste	<ul style="list-style-type: none"> • Dumping of waste materials • Noise pollution
Safety	<ul style="list-style-type: none"> • Potential increase in crime rate • Increased traffic • Negative social behaviour of the public towards the residents (during operation phase)

Following the first phase of public consultation (public meetings given above), the scoping report has been compiled and it was made available to the public (I&APs) for review online and for those without internet access, the report was made available in hard copies at the Rundu Town Council and one of the neighbouring property owners in the Millennium Park residence, Rundu. The notice of the availability of the scoping report was put up on the RTC notice board (see 2nd (second) photo in **Appendix I**). The registered I&APs were informed of the report's availability. The scoping report review period stretched from the 29th of April 2016 until the 16th of May 2016. There were no comments received from the public during this period.

The following chapter (chapter 7) presents the impact assessment process; methodology used to assess the impacts and assessment of potential impacts associated with this project and their recommended mitigation measures.

7 IMPACT ASSESSMENT

7.1 Impact Assessment Methodology

The proposed development of the business area (shopping centre) will have an impact on various biophysical and social features. Each impact identified was assessed in terms of probability (likelihood of occurring), scale/extent (spatial scale), magnitude (severity) and duration (temporal scale) as presented in **Table 7-1**, **Table 7-2**, **Table 7-3** and **Table 7-4**. To enable a scientific approach to the determination of the environmental significance, a numerical value is linked to each rating scale. This methodology ensures uniformity and that potential impacts can be addressed in a standard manner so that a wide range of impacts are comparable.

It is assumed that an assessment of the significance of a potential impact is a good indicator of the risk associated with such an impact. The following process will be applied to each potential impact:

- Provision of a brief explanation of the impact;
- Assessment of the pre-mitigation significance of the impact; and
- Description of recommended mitigation measures.

The recommended mitigation measures prescribed for each of the potential impacts contribute towards the attainment of environmentally sustainable operational conditions of the proposed project for various features of the biophysical and social environment.

The following criteria apply in this impact assessment:

Extent (spatial scale)

Extent is an indication of the physical and spatial scale of the impact. **Table 7-1** shows rating of impact in terms of extent of spatial scale.

Table 7-1: Extent or spatial impact rating

Low (1)	Low/Medium (2)	Medium (3)	Medium/High (4)	High (5)
Impact is localised within the site boundary: Site only	Impact is beyond the site boundary: Local	Impacts felt within adjacent biophysical and social environments: Regional	Impact widespread far beyond site boundary: Regional	Impact extend National or over international boundaries

Duration

Duration refers to the timeframe over which the impact is expected to occur, measured in relation to the lifetime of the proposed project. **Table 7-2** shows the rating of impact in terms of duration.

Table 7-2: Duration impact rating

Low (1)	Low/Medium (2)	Medium (3)	Medium/High (4)	High (5)
Immediate mitigating measures, immediate progress	Impact is quickly reversible, short term impacts (0-5 years)	Reversible over time; medium term (5-15 years)	Impact is long-term	Long term; beyond closure; permanent; irreplaceable or irretrievable commitment of resources

Intensity, Magnitude / severity

Intensity refers to the degree or magnitude to which the impact alters the functioning of an element of the environment. The magnitude of alteration can either be positive or negative. These were also taken into consideration during the assessment of severity. **Table 7-3** shows the rating of impact in terms of intensity, magnitude or severity.

Table 7-3: Intensity, magnitude or severity impact rating

Type of criteria	Negative				
	H-(10)	M/H-(8)	M-(6)	M/L-(4)	L-(2)
Qualitative	Very high deterioration, high quantity of deaths, injury of illness / total loss of habitat, total alteration of ecological processes, extinction of rare species	Substantial deterioration, death, illness or injury, loss of habitat / diversity or resource, severe alteration or disturbance of important processes	Moderate deterioration, discomfort, partial loss of habitat / biodiversity or resource, moderate alteration	Low deterioration, slight noticeable alteration in habitat and biodiversity. Little loss in species numbers	Minor deterioration, nuisance or irritation, minor change in species / habitat / diversity or resource, no or very little quality deterioration.

Probability of occurrence

Probability describes the likelihood of the impacts actually occurring. This determination is based on previous experience with similar projects and/or based on professional judgment. See **Table 7-4** for impact rating in terms of probability of occurrence.

Table 7-4: Probability of occurrence impact rating

Low (1)	Medium/Low (2)	Medium (3)	Medium/High (4)	High (5)
Improbable; low likelihood; seldom. No known risk or vulnerability to natural or induced hazards.	Likely to occur from time to time. Low risk or vulnerability to natural or induced hazards	Possible, distinct possibility, frequent. Low to medium risk or vulnerability to natural or induced hazards.	Probable if mitigating measures are not implemented. Medium risk of vulnerability to natural or induced hazards.	Definite (regardless of preventative measures), highly likely, continuous. High risk or vulnerability to natural or induced hazards.

Significance

Impact significance is determined through a synthesis of the above impact characteristics. The significance of the impact “without mitigation” is the main determinant of the nature and degree of mitigation required. As stated in the introduction to this chapter, for this assessment, the significance of the impact without prescribed mitigation actions was measured.

Once the above factors (Table 7-1, Table 7-2, Table 7-3 and Table 7-4) have been ranked for each potential impact, the impact significance of each is assessed using the following formula:

$$SP = (\text{magnitude} + \text{duration} + \text{scale}) \times \text{probability}$$

The maximum value per potential impact is 100 significance points (SP). Potential impacts were rated as high, moderate or low significance, based on the following significance rating scale (Table 7-5).

Table 7-5: Significance rating scale

<i>SIGNIFICANCE</i>	<i>ENVIRONMENTAL SIGNIFICANCE POINTS</i>	<i>COLOUR CODE</i>
High (positive)	>60	H
Medium (positive)	30 to 60	M
Low (positive)	<30	L
Neutral	0	N
Low (negative)	>-30	L
Medium (negative)	-30 to -60	M
High (negative)	>-60	H

For an impact with a significance rating of high, mitigation measures are recommended to reduce the impact to a low or medium significance rating, provided that the impact with a medium significance rating can be sufficiently controlled with the recommended mitigation measures. To maintain a low or medium significance rating, monitoring is recommended for a period of time to enable the confirmation of the significance of the impact as low or medium and under control.

7.2 Assessment of Construction Phase Impacts

During construction phase, certain areas of the project site will be levelled in order to set up the site infrastructure. This will require the clearing and removal of existing vegetation (loss of biodiversity), soil excavation and potential pollution (soil, air and water) from heavy construction equipment. These are regarded as negative effects of the proposed development and are described and assessed as follows:

7.2.1 Impact on Biodiversity

There are trees and grass in the area that provide homes to small fauna in the area, and their removal will result in the loss of biodiversity. This however is a small scale destruction and impact are minimal. The envisaged impact at the project site, is thus not of such magnitude and/ or significance that it will have irreversible impacts on the biodiversity and endemism of the area and Namibia at large.

The assessment of this impact is presented in **Table 7-6**.

Table 7-6: Impact assessment of the proposed development on Biodiversity

Extent	Duration	Intensity	Probability	Significance
L- 1	L- 2	L- 2	H - 5	L - 25

7.2.1.1 Mitigation recommendations

- The proponent should only remove trees within the actual footprint of the structures to be erected. Trees that are not within the footprint should be left to preserve at least a small amount of biodiversity in the area.
- Large indigenous trees on site need to be identified, marked and surveyed.
- Trees with a trunk size of 150 mm and bigger should be surveyed, marked with paint (readily visible) and protected.
- Trees with a trunk size of 150 mm and bigger, which are impossible to conserve, need to be identified and their location recorded on a map. A list of all trees to be removed should be compiled. These trees are to be replaced in the ratio 1:2 with indigenous species such as Camel thorn (*Acacia erioloba*), African wattle (*Peltophorum Africanum*) and Bird Plum (*Berchemia discolor*) trees. The seedlings of these trees can be obtained from the Forestry office in Rundu. The Forestry office can also direct the Proponent to nearby nurseries where additional trees may be bought.

7.2.2 Impact on Soils

Potential contaminants such as hydrocarbons and waste water / effluent that will be produced on site during construction may contaminate the surrounding soils. The assessment of this impact is presented in **Table 7-7**.

Table 7-7: Impact assessment of the proposed development on Soils

Extent	Duration	Intensity	Probability	Significance
L- 1	L/M - 2	L/M - 4	L/M - 3	L - 21

7.2.2.1 Mitigation recommendations

- Spill control preventative measures should be put in place to manage soil contamination.
- Potential contaminants such as hydrocarbons and waste water should be contained on site and disposed of in accordance to municipal wastewater discharge standards so that they do not contaminate surrounding soils.
- All waste generated during construction should either be kept for recycling or disposed at the local landfill site.
- The proponent should appoint an Environmental officer to monitor soil contamination on site.

7.2.3 Impact on Groundwater

Potential contaminants such as hydrocarbons and waste water / effluent that will be produced on site during construction (if not handled properly) may seep into groundwater systems. The assessment of this impact is presented in **Table 7-8**.

Table 7-8: Impact assessment of the proposed development on Surface water and Groundwater

Extent	Duration	Intensity	Probability	Significance
L/M - 2	M - 3	M - 6	L/M - 2	L - 22

7.2.3.1 Mitigation recommendations

- All run off materials such as hydrocarbons, waste water and other potential contaminants should be contained on site and disposed of in accordance to municipal waste water discharge standards, so that they do not reach to groundwater systems.

7.2.4 Impact on Air Quality

Dust emissions from construction vehicles and equipment and construction activity dust will lead to a short-term decrease in air quality. The assessment of this impact is presented in **Table 7-9**.

Table 7-9: Impact assessment of the proposed development on Air Quality

Extent	Duration	Intensity	Probability	Significance
L/M - 2	L/M - 2	L/M - 2	L/M - 3	L - 18

7.2.4.1 Mitigation recommendations

- Suppression of dust generated during construction by using a reasonable amount of water, while respecting water scarcity if water rationing is initiated.

7.2.5 Impact on Safety

Potential Injuries (heavy construction vehicles and machines) to children that may play in the streets or hang around proposed site, which is to be developed. The assessment of this impact is presented in **Table 7-10**.

Table 7-10: Impact assessment of the proposed development on Safety

Extent	Duration	Intensity	Probability	Significance
L/M - 2	M/H - 4	M /H- 10	L/M - 2	M - 32

7.2.5.1 Mitigation recommendations

- The contractor(s) should ensure that all personnel are provided with personal protective equipment (PPE), such as coveralls, gloves, safety boots, safety glasses and hard hats at all times.
- Potable water should be provided to workers.
- No person should be allowed to smoke close to the portable toilets (if toilets are chemical toilets - the chemicals are flammable).
- No workers should be allowed to drink alcohol during working hours.
- No workers should be allowed on site if under the influence of alcohol.
- No refuelling should be allowed onsite.
- An appropriate location should be indicated on the site for the parking of construction vehicles.
- Construction vehicles should not park in the residential streets
- The proponent should put up a boundary wall around the construction site to limit children access to the site during construction.

7.2.6 Impact on Vehicular Traffic

Impact on traffic safety and heavy vehicles roaming around the area. Heavy construction vehicles will exert pressure local roads. The assessment for this impact is given in **Table 7-11**.

Table 7-11: Impact assessment of the proposed development on Traffic

Extent	Duration	Intensity	Probability	Significance
L/M - 2	L/M - 2	M/H - 8	M - 3	M - 36

7.2.6.1 Mitigation recommendations

- Construction vehicles should have a scheduled time for loading and offloading materials at the site so that they do not interfere with daily traffic in the area.
- Construction vehicles should not park outside the site boundary wall.
- All heavy construction vehicle drivers must have the required driver's license

7.3 Assessment of Operation Phase Impacts

Once the land has been rezoned and services infrastructure installed, the following negative impacts can be expected. These negative effects are described and assessed as follows:

7.3.1 Impact on Health and Safety

There is an inconvenient impact of noise pollution associated with the business area daily activities (people and vehicles).

There is a potential increase in crime rate, due to the influx of people in the residence, which is likely for any type of business development and potentially aggressive behaviours from the general public (that will be using the business area) towards the residents. There is also a potential risk of house breaking and vandalism of residential properties by the general public hanging around the business area.

Increased daily traffic to and from the business area through adjacent residential areas compromises the safety of the residents, especially children that play in the streets of their homes. The impact is assessed in Table 7-12.

Table 7-12: Impact of the proposed development on Health and Safety

Extent	Duration	Intensity	Probability	Significance
L - 1	M/H - 4	M - 6	M - 3	M - 33

7.3.1.1 Mitigation recommendations

- Security services should be a requirement for any business development on Erf 688 to make sure that the residents within the vicinity are safe.

7.3.2 Impact on Existing Services Infrastructure

The influx of people into the area for business purposes and other reasons in the business area will impact the existing services infrastructure. The increased population will potentially exert pressure on the town's service provision like water demand, electricity, sewage network and roads maintain the growing population.

Waste will be generated by occupants of the business. This will result in an increase in sewage waste and place strain on existing residential wastewater network. The assessment of this impact is presented in Table 7-13.

Table 7-13: Impact assessment of the proposed development on existing services infrastructure

Extent	Duration	Intensity	Probability	Significance
L/M - 2	M /H - 4	M - 6	L / M - 2 -	L - 24

7.3.2.1 Mitigation recommendations

- The RTC should determine whether the existing infrastructure will be able to accommodate the increase in water demands, electricity, sewage networks and roads.

Following the impact assessment chapter, are, the conclusions and recommendations to the proposed development.

8 CONCLUSIONS AND RECOMMENDATIONS

The key potential biophysical and social impacts related to the construction and operational phases of the proposed development were identified and assessed. Suitable mitigation measures (where required and possible) to each impact were recommended, and these impacts can be summarised as follows:

- **Impact on Safety (construction phase):** Potential Injuries (heavy construction vehicles and machines) to children that may play in the streets or hang around their usual play site (proposed site), that is to be developed. The impact can be adequately addressed by mitigation measures under chapter 7 and also in chapter 3 of the EMP. Increased daily traffic to and from the business area through adjacent residential areas compromises the safety of the residents, especially children that play in the streets.
- **Impact on Groundwater:** Potential contaminants such as hydrocarbons and waste water / effluent that will be produced on site during construction (if not handled properly) may seep into groundwater systems. The impact can be addressed by mitigation measures under chapter 7 and also in chapter 3 of the EMP.
- **Impact on Vehicular Traffic:** Impact on traffic safety and heavy vehicles roaming around the area. Heavy construction vehicles will exert pressure local roads. The impact can be adequately addressed by mitigation measures under chapter 7 and also in chapter 3 of the EMP.

Impact on Health and Safety (during construction and operational phase): The nuisance impact of noise associated with the construction and operational phase at the business area's daily activities. Potential Injuries to children playing in the streets or hang around the proposed site during construction. Upon completion of construction and the business area becomes fully operational, there is a potential increase in crime rate, due to the influx of people in the residence. The operation of the business area, may potentially bring the risk of house breaking and vandalism of residential properties by the general public hanging around the business area. This impact can be adequately addressed by mitigation measures under chapter 7 and in chapter 3 of the EMP.

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- **Impact on Existing Services infrastructure (operational phase):** The influx of people into the area for business purposes and other reasons in the business area will impact the existing services infrastructure. The increased population will potentially exert pressure on the town's service provision like water demand, electricity, sewage network and roads to maintain the growing population. Waste will be generated by occupants of the business area. This will result in an increase in sewage waste and place strain on existing residential wastewater networks. The impact can be adequately addressed by mitigation measures under chapter 7 and also in chapter 3 of the EMP.

Based on the information provided in this report, GCS is confident that the proposed development, as described in **Chapter 2** and the following associated activities may be granted an Environmental Clearance Certificate, provided that the EMP is implemented. It is also on condition that, the amenities proposed by the concerned and affected residents and conditions set by the Town Council are complied with.

9 REFERENCES

- Christelis, G. S. (2001). *Groundwater in Namibia: An Explanation to the Hydrogeological Map*. Windhoek: Ministry of Agriculture, Water and Forestry.
- National Planning Commission . (2012, April). *NAMIBIA 2011 POPULATION AND HOUSING CENSUS*. Windhoek, Khomas, Namibia.
- Rundu Town Council. (2006). *Rundu Town Council*. Retrieved from <http://www.runducity.iway.na/#>
- Stubenrauch Planning Consultants, Geocarta Namibia, SAIEA, AHT Group AG. (2015). *Integrated Regional Land Use Plan for the Kavango East Region, Namibia: Baseline Report Vol.1*. Windhoek: Ministry of Lands and Resettlement.
- UNDP. (2007). *United Nations Development Programme: Namibia*. Retrieved from <http://www.na.undp.org/content/namibia/en/home/countryinfo/>