3. ROAD CONSTRUCTION DESCRIPTION

Road construction actions depend on the technically and economically viable/feasible options identified which include some degree of layer works (fill, wearing course, sub-base and base layers). Due to the low volume seal, a bitumen surface will be added on top of the layer works.

3.1 Scope of work

The scope of works involves the Low Volume Seal construction of 25km of road sections, which broadly includes the following works:

- Establishment
- Clearing of site and road reserve
- Accommodation of traffic
- Rip and recompacted, reshape the existing layer as Roadbed
- Import Borrow materials for addition pavement layers such as subbase and base
- Construct drainage structures
- Construct a 19.0 mm Cape seal
- Road marking
- Road signs
- Finishing off

3.2 Typical Road Structure Cross Section of a Low Volume Seal Road

The following picture represents the typical bitumen road cross section applicable to this project and is discussed below.

Figure 2: Typical LVSR cross-section

3.2.1 Subbase:

- It is layer of granular material provided above the selected layer generally natural gravel. This material is obtained from borrow pits alongside the planned route.

3.2.2 Base course

- It is the layer immediately under the surface treatment or bitumen seal / asphalt.
- As base course lies close under the pavement surface it is subjected to severe loading. The material in a base course must be of high quality and its construction must be done to strict design standards.
- This material is obtained from borrow-pits but may have to be screened, crushed and screened, modified by addition of lime material or stabilized. The material may also have to be obtained from stone quarries opened by the contractor or from commercial sources.

3.2.3 Bituminous Pavement

For good service throughout the full life of the bituminous pavement, the bituminous surface treatment must have the following qualities:

- Resistance to cracking or ravelling.
- Resistance to weather including the effect of surface water heat and cold.
- Resistance to internal moisture, particularly to water vapours.
- Tight impermeable surface.
- Smooth riding and none skidding surface.

The design aims to meet the above requirements for considerable number of years (need proper design, good construction supervision and maintenance during the life of the road).

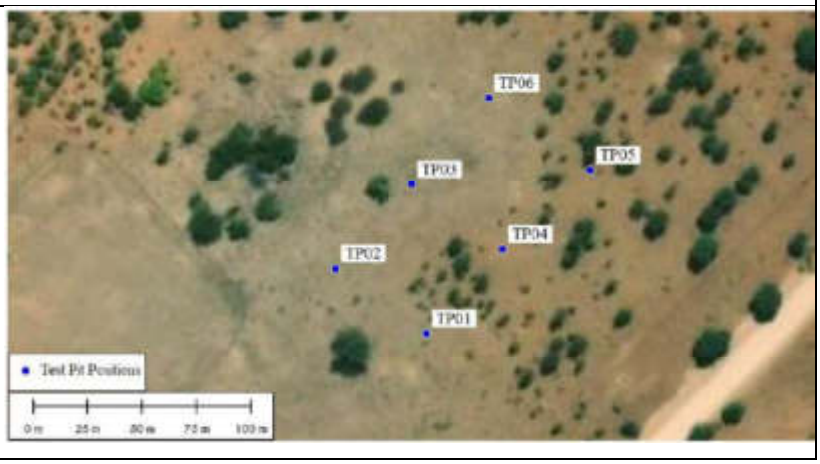
3.3 Borrow Pits

Suitable materials are needed for the construction of the selected layer, subbase, shoulder, gravel wearing course and base course. Fill material is also required to ensure a vertical alignment appropriate for the chosen design speed.

To achieve the abovementioned, suitable material is required from borrow pits. These pits are opened using various heavy-duty machines and the material is hauled from the pit to the required sections of the road where the material is needed. It is imperative that the material excavated complies with the engineering standards required for the construction of the road and is therefore tested on a regular basis.

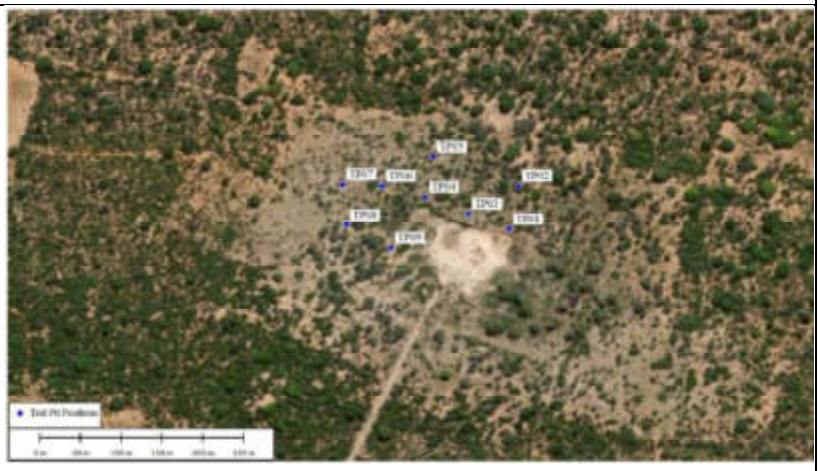
Another important issue is hauling distance. The borrow pits cannot be situated too far from the section of the road where the material is needed, therefore borrow pits cannot be located too far apart (incurring costs due to hauling).

There are on three borrow pits that will be used during this project. All of these pits will be fully rehabilitated according the ESMP requirements:

<table>
<tr><th>Nr</th><th>Coordinates</th><th>Area m²</th><th>Picture</th></tr>
<tr><td>1</td><td>17°36'06.1452"S
18°35'20.8860"E</td><td>15 000</td><td> 
</td></tr>
<tr><td></td><td colspan="3">
Borrow Pits Nkurenkuru - Nepara Clinic
<table>
<tr><th>Borrow Pit</th><th>Test Pits</th><th colspan="2">Coordinates</th><th>Approximate Material Quantities (m³)</th></tr>
<tr><td rowspan="3">1</td><td>1</td><td>S 17° 36' 06.1452"</td><td>E 18° 35' 20.8860"</td><td rowspan="3">+500 000m³</td></tr>
<tr><td>2</td><td>S 17° 36' 06.1452"</td><td>E 18° 35' 20.8860"</td></tr>
<tr><td>3</td><td>S 17° 36' 06.1452"</td><td>E 18° 35' 20.8860"</td></tr>
</table>
</td></tr>
<tr><td></td><td colspan="3"></td></tr>
<tr><td>2</td><td>17° 45' 55.6632"S 18° 28' 00.9156"E</td><td>7 000</td><td> 
</td></tr>
</table>

Borrow Pits Nkurenkuru - Nepara Clinic				
Borrow Pit	Test Pit	Coordinates		Approximate Material Quantities (m^3)
2	1	S 17° 45' 55.6632"	E 18° 28' 00.9156"	17 122
	2	S 17° 45' 54.6984"	E 18° 27' 59.5584"	
	3	S 17° 45' 53.4420"	E 18° 28' 00.6996"	
	4	S 17° 45' 54.4140"	E 18° 28' 02.0388"	
	5	S 17° 45' 53.2296"	E 18° 28' 03.3492"	
	6	S 17° 45' 52.1676"	E 18° 28' 01.8372"	

3	17° 46' 13.4508"S 18° 29' 05.2872" E	11 500



Borrow Pits Nkurenkuru - Nepara Clinic				
Borrow Pit	Test Pit	Coordinates		Approximate Material Quantities (m^3)
3	1	S 17° 46' 13.4508"	E 18° 29' 05.2872"	37 842
	2	S 17° 46' 11.7408"	E 18° 29' 05.6580"	
	3	S 17° 46' 12.8208"	E 18° 29' 03.6600"	
	4	S 17° 46' 12.1728"	E 18° 29' 01.9752"	
	5	S 17° 46' 10.5852"	E 18° 29' 02.2740"	
	6	S 17° 46' 11.7444"	E 18° 29' 00.2652"	
	7	S 17° 46' 11.6724"	E 18° 28' 58.6956"	
	8	S 17° 46' 13.2744"	E 18° 28' 58.8504"	
	9	S 17° 46' 14.1816"	E 18° 29' 00.6180"	

3.4 Construction Water Requirements

Contractors must obtain the consent of relevant landowners prior to utilizing a water source and Clause B1219 of the Project Specifications (COLTO)[1] contains requirements and standards related to the quality of water used for construction purposes. A water extraction license is required according to the Water Resources Management Act N0.11 of 2013.

3.5 Residues and Emissions During Construction

Due to the type of activities that are associated with the construction of roads it is very unlikely that any toxic materials will be present on site. The only risk might be hazardous hydrocarbon substances such as fuels (diesel and petrol) and oils used by the construction machines.

Bitumen might be used for sealing the newly constructed road (dependent on the chosen alternative to be followed). Bitumen in itself is a stable hydrocarbon substance, but the "prime" medium is very volatile and should be considered as a hazardous liquid. The cleaning of bitumen tanker nozzles and cleaning of the bitumen trucks always poses a challenge when it comes to environmental management.

Domestic and camp construction wastes generated at the contractor camps can very easily be managed due to the close proximity to the existing towns of Nkurenkuru - Nepara. Proper waste management principles should be enforced as stipulated by the Environmental Management Plan.

Sewage management is also a great concern at any construction camp. Proper planning of the sewage facilities should be done at the start of such a project to prevent sewage overflow and the contamination of soils and water. The number of workers should be determined, and the sewage facilities planned accordingly.

4. ASSUMPTIONS AND LIMITATIONS

It is assumed that the information provided by Consulting Team and the information in the Inception Report and other relevant documentation used for the compilation of this Environmental Report is accurate and relevant to this date. It is also assumed that the secondary data collected for the bio-physical and socio-economic environments are true and correct. These include data sources associated with printed books, data available on the internet and other studies as indicated in this report.

[1] Standard Specifications for Bridge Works for State Road Authorities - COLTO

The Contract determined the available time and funds available to complete this project. Communication between the various team members was assured trough regular meetings.

5. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

This section deals with the regulatory requirements that are applicable to this project.

THE NAMIBIAN LEGISLATIVE FRAMEWORK

During the preparation of the Scoping Report, the following legislation and policies were considered:

- Environmental Management Act 7 of 2007 ;
- Environmental Regulations of 2012;
- Roads Authority Environmental Manual of 2014
- Road Ordinance 17 of 1972

The activities listed in Table 2, as contained in Appendix B of the Republic of Namibia's Environmental Regulations, may be applicable and will require Environmental Clearance.

Table 3: Listed Activities in Terms of the Environmental Management Act

Activity No.	Activity Description
10.2	The route determination of roads and design of associated physical infrastructure where - (a) it is a public road; (b) the road reserve is wider than 30 meters; or (c) the road caters for more than one lane of traffic in both directions.

Currently, Environmental Impact Assessments are guided and reviewed by the Directorate of Environmental Affairs (DEA) in the Ministry of Environment, Forestry and Tourism. Guidelines for various projects have been compiled to help improve EIA practice in Namibia.

There are a number of sector laws in Namibia that have relevance to Scoping and EIAs. The following table provides a summary of the relevant sector legislation.

Statute	Provisions	Project Implications
Forest Act 12 of 2001	Provision for the protection of natural vegetation. No regulations promulgated yet. Section 22(1): It is unlawful for any person to "*cut, destroy or remove:* • any living tree, bush or shrub growing within 100 meters from a river, stream or watercourse on land that is not part of a surveyed erf or a local authority area without a license. • Vegetation which is on a sand dune or drifting sand or on a gully unless the cutting, destruction or removal is done for the purpose of stabilizing the sand or gully.	• Permits should be obtained from Department of Forestry for the removal of protected trees.
National Heritage Act 27 of 2004	Heritage resources to be conserved in development.	All archaeological sites to be identified and protected.
Nature Conservation Ordinance 4 of 1975	Requires a permit for picking (the definition of "picking" includes damage or destroy) protected plants without a permit.	In case there is an intention to remove protected species, then permits will be required.
Preservation of Trees and Forests under the Forest Act, 2001.	Protection to tree species.	The Contractor will require a permit to remove any protected trees.
Soil Conservation Act 76 of 1969	Prevention and combating of soil erosion; conservation, improvement and manner of use of soil and vegetation, and protection of water sources.	Removals of vegetation cover to be avoided and minimized at all costs. Soil pollution to be avoided.

Statute	Provisions	Project Implications
	The Minister may direct owners or land occupiers in respect of *inter alia* water courses. No Regulations exist to this effect.	
Water Resources Management Act 11 of 2013	Section 44 states that no person may abstract or use water, except in accordance with a license issued under this Act. Abstraction of water including open waters, aquifer, brackish or marine water. Section 566 states that any drilling to be conducted or enlargement of an existing borehole can only be conducted under a permit issued under the Act. Section 66 states that a person may not discharge any effluent directly or indirectly to any water resource on or under the ground or construct any effluent treatment facility or disposal site unless in compliance with a permit issued under Section 70 of the Act. Where "effluent" means any liquid discharge as a result of domestic, commercial, industrial or agricultural activities.	Obligation not to pollute surface water bodies. The following permits are required in terms of the Water Act: • water abstraction license that will form part of the contract obligations.
Public Health Act 36 of 1919	Provides for the prevention of pollution of public water supplies.	A general obligation for the Contractor not to pollute the water bodies in the area.

Statute	Provisions	Project Implications
Government Notice No 121 of 1969 as amended as well as Government Notice No. 156 of 1 Aug 1997	This is the general health regulations applicable to this project.	The Contractor will enforce the conditions required to ensure the health and safety of the workers.

An important section 30 from the Road Ordinance 17 (1972) clarify the obtainment of materialrequired for the construction of the roads in Namibia. It states the following:

For the purpose of the construction, maintenance or repair of a proclaimed road the President of Namibia may through his representatives, officers or contractors enter upon any land with any vehicle, tool, material or animal and after the expiry of a period of fourteen days after a written notice of his intention to do so –

(i) has been handed to the owner, lessee or occupier of such land; or
(ii) has been sent to the last known address of such owner, lessee or occupier by registered post; or
(iii) has been left at a conspicuous place on such land

he may without any compensation to the owner, lessee or occupier of the land, remove any material which may be necessary for such construction, maintenance or repair from such land or process it on such land and thereafter remove it there from and for this purpose he may build and maintain any access roads which he may consider necessary: Provided that –

(a) nothing shall be removed from any garden or other land usually cultivated, nor within two hundred and fifty metres of any house nor within fifty metres of any kraal;

(b) every excavation, including an excavation for a sample and an experimental pit, shall as soon as possible be filled up or fenced off or shall otherwise be made safe for human beings and animals again to the satisfaction of the owner, lessee or occupier of such land or as the President of Namibia directs;

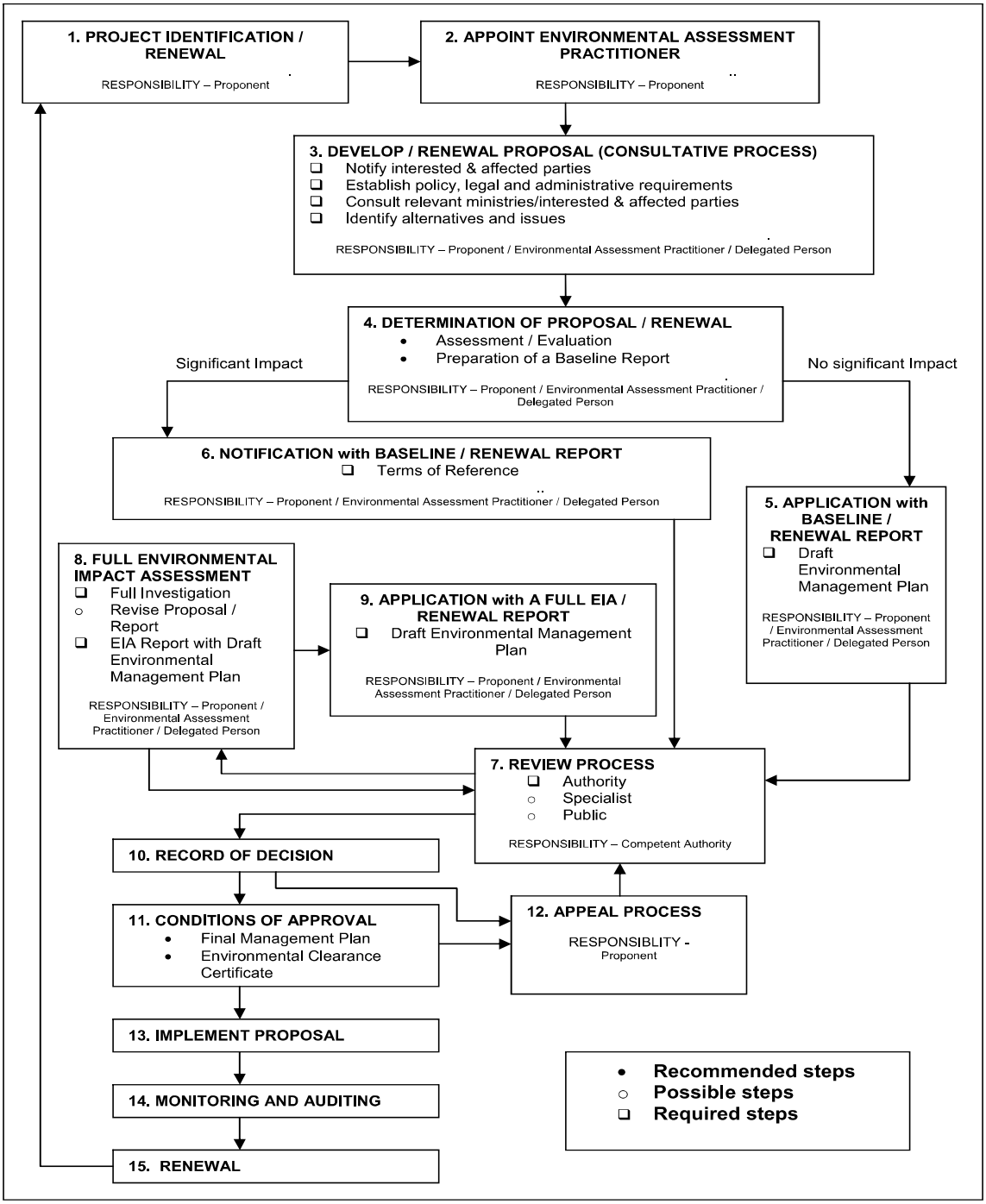
(c) any road provided for this purpose shall be ripped up in such a way that it cannot be washed away should the owner, lessee or occupier so desire;

(d) the President of Namibia, his representatives, officers or contractors shall, in exercising these powers take every care to prevent damage, injury, loss or inconvenience to the owner, lessee or occupier concerned:

Provided further that the powers granted to the President of Namibia in terms of this section shall only be exercised within the area of a local authority in consultation with the local authority

A flowchart indicating the entire Scoping/EIA process is shown in *Figure 2 below:*

Figure 3: EIA Process



6. DESCRIPTION OF BASELINE CONDITIONS

This section describes the bio-physical aspects of the study area to allow for identification of elements of environmental sensitivity and to provide the context for the assessment of significance of impacts related to the proposed project.

6.1 Climate

The available data are used to describe the climate averages of Nkurenkuru - Nepara Towns.

6.1.1 Rainfall and Temperature

The Nkurenkuru and Nepara area is characterized with a semi-arid highland savannah climate typified as very hot in summer and moderate dry in winter. The highest temperatures are measured in October with an average daily temperature of maximum 27.7ºC and a minimum of 19.6ºC. The coldest temperatures, conversely, are measured in July with an average daily maximum of 17.8ºC and minimum 9.8ºC (*Weather, the Climate in Namibia*, 1998 – 2018). The area therefore has fairly low frost potential.

The annual average rainfall for the area and surroundings is 500mm to 700mm (*Weather, the Climate in Namibia*, 1998 – 2018). The majority of rainfall is experienced in the summer months. Rainfall in the area is typically sporadic and unpredictable however the average highest rainfall months are December to March[2].

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C	23.8 °C	23.3 °C	22.9 °C	22.4 °C	20.7 °C	18 °C	17.8 °C	21.3 °C	25.3 °C	27.7 °C	26.3 °C	24.7 °C
Min. Temperature °C	19.1 °C	18.6 °C	18.2 °C	16.5 °C	13.4 °C	10.3 °C	9.8 °C	12.7 °C	16.4 °C	19.6 °C	19.6 °C	19.4 °C
Max. Temperature °C	29.1 °C	28.3 °C	28 °C	28.4 °C	27.9 °C	25.7 °C	25.6 °C	29.5 °C	33.4 °C	35 °C	32.8 °C	30.5 °C
Precipitation / Rainfall mm	179	140	116	23	0	0	0	0	2	18	69	126
Humidity(%)	66%	69%	69%	53%	37%	35%	30%	23%	19%	23%	41%	58%

[2] https://en.climate-data.org/africa/namibia/kavango-west-region/nepara-772692/

	January	February	March	April	May	June	July	August	September	October	November	December
Rainy days (d)	13	12	12	4	0	0	0	0	1	3	9	13
avg. Sun hours (hours)	9.3	8.9	8.6	9.7	10.1	9.9	10.0	10.4	10.8	11.2	11.1	10.3

Table 4: Rainfall and temperature - Nepara

6.2 Air quality

6.2.1 Existing Sources of Air Pollution

The proposed project site is located in rural areas where the air quality is not affected by large scale anthropogenic activities. The following sources of air contamination have been identified:

- Vehicle dust and exhaust gas emissions
- Wind-blown dust from sparsely vegetated surfaces
- Veld fires

6.2.2 Sensitive Receptors

The proposed project is located between the towns of Nkurenkuru - Nepara which have a very few receptors and therefore dust reduction is not a high priority during the construction phase of the project.

6.2.3 Wind

The prevailing wind direction is expected to prevent the spread of any nuisance namely noise and smell. The predominant wind in the region is easterly with westerly winds from September to December (*Weather, the Climate in Namibia*, 1998 – 2018). Extreme winds are experienced in the months of August and September and thus significant wind erosion on disturbed areas is visible.

6.3 Topography

The proposed routes are all situated on the Central Plateau of Namibia with altitudes varying from 1000m to 1200m above sea-level. The general topography of the area is characterised by plains with a downward gradient to the north. To the south there is a gradual increase of height stretching from the Okavango River to the central parts of the mainland.

This topographical characteristic also contributes to the forming and existence of the Okavango Delta situated to the eastern part of the proposed project where surface water is channelled to contribute to the Delta. These topographic characteristics do not pose any limitations on the proposed roads.

6.4 Geology

The proposed roads lie in the Kalahari Sequence (Q/TKA) which covers large areas of the north western, north, northeast, south east and southern part of Namibia. Part of this sequence is the Basalts found in the Kavango and the Caprivi Strip. This Sequence is characterised by underlying semi-consolidated mudstone with a gritty appearance.

Thin, brown sandstone and siltstone and white nodular limestone layers are embedded into the geology. The Andoni Formation caps the Kalahari Sequence and consists of white sand, light green clayey sand, green clay with thin limestone layers and nodules of dolcrete, calcrete and, in the east, silcrete (Miller 1992).

Figure 4: Geology of the Nkurenkuru - Nepara area

6.5 Vegetation and Soils

The soil category for the study area is Arenosols. This type is formed from windblown sand and usually extends to a depth of at least one meter, with sand generally making up more than 70% of the soil. The rest of the soils usually consist of particles of clay and silt.

The sandy texture allows water to drain through the soil rapidly, leaving very little moisture at depths to which most plant roots can reach. Few nutrients are retained in the porous sand. The loose structure of sand means that there is little run-off and water erosion, although it makes the soil susceptible to wind erosion.

Arenosols are by far the biggest soil unit in Namibia, covering much of eastern and north-eastern parts of the country (Mendelsohn 2002).

Figure 5: Dominant soils of the area

Nkurenkuru and Nepara is a forested area that lies within the Tree Savanna and (Dry) Woodland as defined by Giess (1971), more recently called the North-eastern Kalahari Woodland by Mendelsohn *et al* (2002). This is largely an area of broadleaved woodlands on Kalahari Sands. Forests comprise less than 10% of Namibia, and the area around Nkurenkuru comprises some of the densest cover of broadleaved trees in Namibia (Mendelsohn *et al* 2002).

Plant species richness in the Okavango region is high due, in part, to a diversity of habitats (e.g. wetlands, riverine forests, specialised habitats on quartzites in the Andara area and dry deciduous woodlands), but also to incursion of tropical species down the Okavango River (Maggs *et al* 1998).

Endemism is not very high, with many of the species widely distributed north and east of our borders, but many of the species that occur there, particularly the large trees, are economically important for timber or food security and are protected by legislation and usually also by the local people. Besides greatly improving the quality of life for people and their stock by providing food and valuable shade, as well as enhancing the surroundings, they also contribute to the aesthetic appeal of the area for tourism, an important source of income in Namibia, and additionally support populations of other biotic groups, such as birds and bats. The former group is also an important aspect of tourism revenue, with considerable numbers of overseas tourists coming to Namibia on specialised birding tours.

Over much of this site *Guibourtia coleosperma* (False Mopane) and *Schinziophyton rautanenii* (Manketti) are common and represented by large, mature, productive trees of immense value. *Strychnos cocculoides* (Corky monkey-orange) is also reasonably common and *Combretum imberbe* (Leadwood) occurs occasionally as a large tree.

A number of *Acacia erioloba* (Camel-thorn), *Acacia sieberiana* occur alongside the gravel

road with thickets along the edges of the existing gravel road often include other protected species, such as *Peltophorum africanum* and *Philenoptera nelsii* but these are not of high concern, as they are common and widespread.

6.6 Land Use

The proposed project area is located in commercial/residential and communal land. Tourism plays a secondary economic role in this area and access to these tourism destinations are important.

6.7 Surface and Groundwater

The project is situated in the Mpungu surface water catchment area which ultimately drains into the Okavango Catchment via the Dikweya drainage lines.

The most important drainage system in the Kavango Region is the Okavango River situated in the northern border of Namibia. Other smaller drainage rivers occur in the Kavango Region and are dominated by the Omatako River, and its estuaries, flowing in a Northern direction towards the Okavango River. The combined Okavango and Cuito Rivers end their journeys inland in the Okavango Delta in Botswana.

Water flows in the perennial rivers vary enormously from year to year, generally response to the amounts of rain falling in their catchment areas. The general surface water characteristics of the area applicable to this project is dominated by very high surface water infiltration with little surface water run-off.

Geo-hydrology in the area is characteristic of shallow aquifer levels (between 10-30 m below surface) water which is sustained during the year. The quality of the water is of high standards and can be utilized for both cattle and human consumption (Christelis and Struckmeier 2011).

The proposed route is situated on some of the more productive porous aquifers found in Namibia.

The water quality over much of the region is extremely good. The TDS (Total Dissolved Solids) is a good measure to determine the quality of the water and for classification: a TDS of over 5000 mg per liter is not even suitable for livestock and less than 1000 mg/l indicates good quality water. The proposed areas are mostly situated in areas less than 1000 mg/l.

6.8 Fauna

The areas where the routes are planned is characterised to have a low degree of endemism when it comes to scorpion, mammals, reptiles and birds. According to Mendelsohn the Nkurenkuru - Nepara areas host various types of fauna species but are not endemic to the area where the routes are planned within and around the town of Nkurenkuru - Nepara.

6.9 Archaeological and Anthropological Resources

The heritage of Namibia is protected in terms of the National Heritage Act of 2004. This legislation obliges a developer to identify any heritage sites before project implementation. In Namibia, the heritage aspects are normally covered in the EA of the project.

The area where the roads will be constructed has been heavily impacted on during the last few decades. The only significance with regards to archaeological material can be socio-orientated with regards to graveyards, sacred or ritual tress and places. Following the survey of the proposed route and consultations with the local headmen it appears that there are limited possibilities of archaeological and cultural artefacts needed for preservation.

6.10 Noise

Even though tourism plays an important economic role in this area it is anticipated that noise will not be an important aspect to consider due to the current movement of traffic on the gravel roads. No other source of noise is anticipated.

6.11 Visual Impacts

Visual impacts associated with a bitumen road was considered during the project phase and argued during the public participation meetings. It seems that there will not be a substantial difference in visual perception from the existing gravel road and the planned bitumen road. What is of importance is the aesthetic experience from the tourist when he/she is driving through the landscape.

6.12 Socio-economic background

The Kavango West is an outcome of the split of Kavango Region into two Regions known as Kavango East and Kavango West (2013). The basic statistics in Kavango West with reference to the NSA Report for this Region comprises of eight (8) constituencies, namely : Kapako, Mankumpi, Mpungu, Musese, Ncamangoro, Ncuncuni, Nkurenkuru, and Tondoro.

Access to schools, clinics and other important social and economic nodes are some of the major objectives for the construction of these roads. It is therefore important to look at the social structures present in these specific regions.

The road render services to the community by allowing people to have access to modern means of transport which improves their livelihood significantly. Improved access to markets, health care services and educational facilities benefit the society as a whole as it improves the potential for economic development. This is especially relevant to the town of Nepara which will be connected to Nkurenkuru and other major routes to Ondangwa and Rundu / Katima Mulilo.

Social development in the project area is essentially marked by the progress made in the sectors of education and health. Decentralisation to the regions of some of the administrative functions, the establishment of magistrate's courts, police stations and other facilities contribute to the general development of the area. Church missions are well established in northern Namibia and play a major role in the social development of a community.

The Kavango West Region is characterised by little or poor access to fundamental social institutions as mentioned above. This proposed project will facilitate in expanding the transport network therefore improving mobility. This is especially true in the rural areas due to the fact that over 70% of the people in the Kavango West Region live in the rural areas.

	Census data	Kavango Region	Kavango East	Kavango West
Total Population	2011	223 352	136 823	86 529
Total Female	2011	118 591	72 936	45 655
Total Male	2011	104 761	63 887	40 874

The distribution of people across Namibia is very unevenly, with the biggest population concentration occurring in the northern parts. It is estimated that the Kavango West region has a population of 86 529 out of a total population of about 2.5 million people in Namibia. This means that the Kavango East region houses just more than 3.46% of the total population of Namibia (Population and Housing Census, 2011). It is estimated that the total workforce aged 15 and older totals 46 643 of which 15 087 (32.3%) is employed and 11 492 (24.6%) is unemployed. The rest of the group is either stents, unable to work or disabled.

Agriculture plays a very important role in the survival of the people in this region. Small scale farming dominates the area and almost 60% of households depend on farming as their sole survival. Only 8.5% of the population derive their livelihoods from other business and non-farming sources of income and 10% on wages and salaries.

Crop growing dominates the agricultural sector with livestock farming in second place. There are also some poultry farming activities that contribute to the household incomes[3].

[3] 2011 Population and Housing Census – Kavango West Regional based on 4th delimitation.

7. PUBLIC PARTICIPATION PROCESS

A comprehensive Public Participation process was conducted for this project which are in guidance with the requirements of the Environmental Management Act no.7 of 2007.

The methodology followed during the public participation process was to make use of existing communications between Pregon/Dunamis JV and the relevant stakeholders and interested and affected parties, as well as personal interviews conducted by Enviro Management Consultants Namibia.

The objectives of the meetings were to inform the various Stakeholders and the general Public about the project and to receive any comments or concerns with regards to the design of the proposed routes, the natural environment that will be affected by the project as well as the social impact this project might have.

The project was advertised in both the New Era and the Namibian on two separate occasions:

6th October 2021 in both newspapers, and;
15th October 2021 in both newspapers.

The public consultation meetings were scheduled for the following dates and times:

Date:	19th October 2021
Time:	10:00 – 12:00
Venue:	Nkurenkuru Community Hall

Date:	13th October 2021
Time:	14:00 – 16:00
Venue:	Kaakuwa Community Tree

The full minutes of the meeting is attached as **Appendix D** of this document.

Please find attached the Advertisement that was placed in the various newspapers, the list of I&AP's that were identified and consulted during the public consultation process as well as the Issues and concerns register.

7.1 Proof of Placement of Notices

Newspaper Adverts – 6 October 2021

THE NAMIBIAN SPORT Wednesday, 6 October 2021 19

ON POINT ... Namibia's Mathias Tuhrongeleni Ho-ngholo (right) competed in the men's light flyweight at the 2016 Summer Olympics.

Photo: File

Boxing fixed at Rio 2016 Olympics – AIBA

BOXING bouts for medals at the 2016 Rio Olympics were fixed by "crooked and compliant" referees and judges, an independent investigation commissioned by the sport's world governing body International Boxing Association (AIBA) revealed.

Richard McLaren, head of the investigation, said in a report released last Thursday that the line of three stages of the investigation looked into the refereeing and judging at Rio where controversial decisions in certain bouts made the headlines.

"The result of the next seven years before starting from at least the Olympic Games of the 21st century through the events around 2013 and London 2012," McLaren said a new zealot case in Edmonton.

"There is no final figure on how many fights could have been affected.

The investigation identified "in the vicinity of 10 particular bouts and there's strong the [but we know with no question] bouts in particular," including fights for medals, McLaren said.

The report added that senior AIBA officials and their personal conducted referees and judges and sensed the environment, which was expressed in stories they were assigned fairly, into "a more refined stage".

The referees and judges who were selected generally "knew what was going on" or else were "incompetent" and willing to ignore signs of manipulation, and appointing scores for the Rio Olympics were used to filter out honest referees and judges, McLaren alleged.

Referees and judges were told who should win a bout in the morning before a day of fights at the Olympics, including in a bouts were "permitted to use proxy eyes", McLaren said.

"During the 2016 Olympics, there was a specific corrupting after a particular fight between Ireland's Michael Conlan and Russian Vladimir Nikitin.

After the judges awarded the [illegible] Conlan showed disbelief for middle fingers and accused Russia and AIBA of corruption.

'NOTHING TO HIDE'

AIBA was suspended as the Olympic governing body for boxing in May 2019.

The qualification and staging of the tournament at the Tokyo Games in the summer were organised by a task force of the International Olympic Committee (IOC) which recently criticised AIBA for its failure to oversee reforms of its leadership.

AIBA has been led by Russian businessman Umar Kremlev since December and says it has informed how bouts are judged since 2016, when ex-president Wu was in charge.

"AIBA hired McLaren because we have nothing to hide," Kremlev said in a statement. "There should be no place in the AIBA family for anyone who has tried to fight."

AIBA said it "noted" McLaren's findings.

"We must now carefully examine the report and see what steps are needed to ensure justice," Kremlev said.

Nine of the referees or judges from 2016 were in their prime for this year's Olympics in Tokyo after being suspended by AIBA.

– Al Jazeera

Namibia in running world cup final

• STAFF REPORTER

A JUNIOR ordinary Namibian sprinter Gabriella Ambrosius is now a to the final four of the 2021 Virtley Running World Cup after finishing second in the last 16 place on Sunday.

The team of 420 runners from Namibia are in the championship round of the world's largest race participation running event by

running a combined total of

12 500km in just six weeks – from 28 September to 3 October – averaging 3.9km each.

With over 100 000 runners in the 2021 tournament, and over 2.5 million kilometres already run, the race is on in the final few days to see which country would be crowned Virtley Running World Cup winners.

There are three knockout rounds before one can be crowned the running world cup champion.

Each country has an opponent, such as Team Red Air Jamaica, Dane Jessica Ennis-Hill for England, and Wayde van Niekerk for South Africa.

Namibia's 2021 captain is Gabriel Rona.

The free-to-enter open-to-all tournament is designed for an environmentally friendly future.

Participants can run from their front doors tracking each kilometre they run, using a free companion app on a smartphone or their wearable tracker.

This means, unlike other major events, the Virtley Running World Cup runners can participate rural and not rather.

Now in its third year, the tournament started on 21 September and will continue until 10 October.

Every participant who runs 5km in under 30 minutes will be able to earn points for their country.

"Not every one gets the opportunity to represent their country, but in this case you do. No matter your speed or distance, the aim of the game is to run as much as possible for your country to help them reach the top of the leaderboard. The more time you do, the more kilometres picked your country scores," says Running World Cup founder UK social entrepreneur Nick Bransfield.

Suspected court burglars released on bail

Maria Amakali

Two of the three men who were arrested for allegedly breaking into the Katutura Magistrate's Court in July have been released on bail.

Magistrate Olivia van der Colff granted bail of N$3 000 each to Edmore Witbooi and Raphael Battista after prosecutor Victoria Likius said the State had no objections.

The State, however, objected to the granting of bail to Andrew David, who is well-known to the police for committing similar offences.

As a condition for their release on bail, they were warned not to leave the district of Windhoek without the consent of the investigating officer dealing with their case.

Witbooi and Battista were arrested and charged alongside David on two counts of housebreaking with intent to steal, and one count of possession of stolen property, respectively.

The group was arrested on 25 July following a rigorous search from 24 July when court officials discovered that unknown suspects had entered the courtyard by climbing over the wall, damaging the glass door and gaining access to the building. The suspects further broke into seven offices, where they stole three laptops of magistrates and that of a public prosecutor, as well as one computer monitor and CPU.

A knife and kettle were found abandoned in the same building's corridor during investigations. CCTV footage showed how two unknown suspects with balaclavas entered the yard. They used the chairs in the court corridor to climb on and damage the offices' windows, through which they gained entrance.

Police reports at the time revealed that the suspects broke into the court building on 24 July and returned the following day.

An operation was carried out, but the suspects could not be traced nor apprehended. However, in the early hours of 25 July, the police, who were still at the scene after a patrol of Windhoek's streets, saw a suspect on the roof of the courthouse, attempting to flee.

During the accused's first court appearance, Likius informed the court that her co-accused, Witbooi and Battista were only barers of the goods.

The group is expected to make a return in court on 18 November after the case was postponed for further police investigations.

In the dock... Suspected burglar Andrew David. Photo: Bernard Kambo

SMEs get Covid resilience funding

Steven Klukowski

KATIMA MULILO: Twenty entrepreneurs in Kavango East, Covid-19, SME Compete provided an opportunity to 20 small business owners to pitch their products to a panel of adjudicators for possible funding.

One of the participants, Didi Skryer, is the owner of Didi's Trading Enterprises, and said she started her cosmetology business which entails hairdressing, make up and nail beautifying in 1994.

"In the beginning, I employed ten people, but had to retrench three of them due to the impact of the coronavirus," she explained.

Skryer added that the pandemic brought about reduced customer numbers due to financial constraints, forcing her to close her business for two months.

"Business is luckily now picking up again with reduced restrictions and fatality statistics as well as relaxed Covid-19 regulations.

If there are no constraints, then I am sitting without an income for myself and my two employees, hence the decision to go to customers' homes when required, nor even so, seeking it a 'one-on-one' situation in the end," she noted.

The entrepreneur said his general turnover between September and December is normally when she gets more clients and business due to a higher demand for hair services and products as most weddings and church confirmations are taking place during the period.

She thus encouraged the unemployed to never give up hope, although it might be difficult to become first of all an employee and later on an employer of others.

"I started by first obtaining a National Diploma in Cosmetology and furthermore got accredited as a Recognition of Prior Learning holder, enabling me now to train others", she said. Skryer added that although competition is tough in her trade, customer demand is always there, sustaining her business.

Also pitching at the event was Edwin Jacobs, owner of Youth Pride Funerals, who informed New Era afterwards that contrary to the general assumption that funeral undertakers made a lot of money from Covid-19-related deaths, it is unfortunately not always the case with smaller companies like his.

"The surviving family members in some cases to make ends meet, provide friends in the vicinity which luckily offer huge negotiable" he stated.

He said there exist business schools providing affordable funeral packages to give those who intended to become involved in self-employment by starting off on a very small scale.

"I started my business in 2018 after seeing the need of people who cannot afford expensive funeral services for their loved ones," he also added.

He explained the biggest challenge employees are willing to handle the remains of those who succumbed due to Covid-19 related illnesses out of fear of contracting the disease.

"Based on this, I am now employing two permanent and two temporary persons at this stage," said the businessman.

Jacobs also urged unemployed youth to pick up best practices when travelling around Namibia, and to bring it closer to the //Kharas region through accepting funding or starting on a small scale.

SMEs Compete is a social entrepreneurship entity that helps SMEs grow their businesses and create jobs. It has developed an array of services that focus on capacity-building, growth and skills honing.

Close to 250 participants will receive grants in the country's 14 regions, whereby more than N$4 million has been disbursed so far.

Tireless worker... Didi Skryer attending to a client in Katimamulilo. Photo: Steven Klukowski

Police regret concert shooting

Ohorio Simaiko

OSHAKATI: The police are investigating a shooting incident that happened over the weekend here in which two people were allegedly wounded by heavily armed men during a concert that gathered far a music concert.

Police spokesperson, Kenna Shikwaho said while confirming the matter that a case has been opened by the victims, and is being investigated.

She says the ugly confrontation is highly regrettable and was not intentional, but the police had to act to remedy the violent clashes.

"It's deeply unfortunate that this happened on the police were enforcing law and order," she said, adding that the officers were also carrying out the nationwide crime resilience operations.

"The officers got a report that there was a concert that was still taking place past curfew time at Kuumba bar. So the police were dispatched to the place and when they arrived at the scene, a commotion ensued as the public allegedly started throwing stones and bottles at the officers. Thereafter, they responded by firing warning shots and unfortunately, one person was shot in the ground."

In addition, she said after the situation was resolved, the police were informed that there were two patients at the hospital who were being treated for gunshot injuries. *New Era* is informed that one was shot in the arm, and the other in the arm and buttocks.

The event attracted a crowd of about 300, and the police, Covid-19 regulations allowed at public gatherings.

"The police was also trying to enforce the Covid-19 protocols as the crowd had contravened the curfew regulations. Such incidents can be avoided if the public cooperates with the police whenever we are trying to maintain law and order," Shikwaho added.

THE NAMIBIAN

LETTERS

Friday 15 October 2021 17

NB: Dear readers, please send letters that are about 250 words and, to be printed as we would like to make room for as many varied views as possible in the spirit of encouraging openness and debate. Send to letters@namibian.com.na, PO Box 20181, Windhoek.

Graduates are Overlooked

AUTOMATICALLY AS being unemployed is, having a very uncooperative government is the most stressful issue one has to bear.

Or rather, an uncooperative education sector to be exact.

As the youth, there is too much pressure knowing we have qualifications, but we are just sitting at home, waiting for a teaching vacancy to be announced.

Then we apply and wait.

I kid you not, there would be about 300 or 400 of us, competing for one post.

Why must we suffer while there are about 40 to 50 pupils in one class, which can be split, and someone can be given a classroom?

Why do we still have teachers teaching more than one grade?

Why do we have fully qualified graduates who are sitting at home unemployed if there are pupils out there who walk about 30km to school?

Can the government not set up classrooms that are made out of corrugated iron?

That way, the government would be able to hire *the pupils and the teacher at home, doing an* improvised version of trying to make ends meet.

We have tried to look for other jobs, but, as expected, there are people who specialise in those sectors, so of course they would be considered first.

There even is talk on the business side, but, to be honest, it is not any form of operation. We are not lazy.

Can we get assistance? Can there be some serious action against the people who employ others wrongly?

We need consideration. We need recognition. We need answers!

Kiaasha Andima

Letter Of The Week

Investment in Agriculture is Crucial

AGRICULTURE CONTRIBUTES ABOUT 5.5% to Namibia's gross domestic product.

This continues to decline on an annual basis as a result of poor investment in agriculture.

Asking in the level of investment in Namibian agriculture remains low, Namibia will continue to import food which can be produced locally.

Once declared in Namibia, then food will not be accessible to most families, and as a result, increases food insecurity among many Namibians – especially the rural poor.

As we can see, agriculture at present contributes very little to the country's economy, while there are many farmers who are struggling to make ends meet.

Farmers do not have to purchase inputs on time due to budgetary constraints, a lack of services and repairs to equipment, staff members' salaries paid late on many occasions, and many other issues have become the order of the day.

Does our government really regard agriculture as the "engine of the economy" in the words of Tanzania Thabo Mbeki Kasuto?

I don't think so.

If indeed our government regards agriculture as important to the Namibian economy, it is time to stop paying lip service and invest in agricultural development and revive agriculture to its rightful place.

Namibia's population continues to increase steadily at a rate of 1.8%.

The more food needs to be produced locally, so that it is available at affordable prices to Namibians.

If the government cannot maintain green schemes, it should lease them to private individuals who will produce food for Namibians.

Examples of these are the Shitemo Green Scheme, the Kalimbeza rice project, and many others.

Michangual Chikuni

Public Trust is Key

IN 2017, NAMIBIA ACCEDED to become the 36th African Union member of the African Peer review Mechanism (APRM).

The establishment of the APRM was driven to acknowledgement that the continent's failures can only be resolved by African countries through inclusive partnerships between governments, civil society organisations and the private sector.

In a critical review released by the APRM in 2016, a recommendation was made in relation to the separation of the powers function in Namibia. The report noted that "the independence of checks and balances or exemptions into the Office of the Ombudsman, Anti-Corruption Commission, and the Office of the Auditor General should be strengthened by introducing mechanisms that involved experts and public representatives when appointing the heads of such bodies".

There is a public trust deficit in almost all our institutions in Namibia.

In 2019, the Afrobarometer survey results showed that 74.1% of the Namibian population believed corruption had increased "a lot", rendering the institutions as incapable of executing their mandates effectively.

This is concerning.

Hence the need to ensure and strengthen the rules and regulations that governs the appointment of heads of public institutions.

Parliament seems to have a monopoly [illegible] in the appointment of key figures in state institutions.

It is because of this issue that both public and personal trust is lost, sometimes for months.

It is imperative that when seeking for recommendations for the appointment of persons to these positions in the head of state, the process should be inclusive and allow for democratised recommendations at all times.

Although public interviews are not a panacea (medicine), these have been seen in the absence of institutionalised selection panels.

We can learn from Malawi, where the [illegible] in a public office appointment panel comprises civil society representatives, and even from Ghana where [illegible] participation and the Justice Commission.

It can further be noted by the public that one of the relevant commissions, such as the Public Service Commission and the Judicial Service Commission.

This would then be followed by the said to have recommendations by the public servants to the president for appointments.

Through this similar approach, we should be able to boost public confidence in our institutions.

Alpha Upete, Maximus Dani Kaulinawa (PDM/TL)

6 | NEWS

Friday 15 October 2021 | NEW ERA

Wildlife poisoning tantamount to genocide - IRDNC

ERONGO RED

VACANCY

Position:	Electrician Assistant - High Mast Lights
Business Unit:	Network Operations & Maintenance
Paterson Grade:	B4
Duty Station:	Walvis Bay

For more information on these vacancies at Erongo RED, please visit our website at www.erongored.com

Closing Date: Friday, 29 October 2021

Under attack... After two farmers were arrested for allegedly poisoning and killing four lions and two hyenas in Kunene region, the IRDNC said the practice was akin to wildlife genocide.

OUTJO - The deliberate poisoning of wild animals is seen as a weapon of choice by farmers whenever wild animals are a threat to their livestock, and this is tantamount to wildlife genocide.

This was said by Integrated Rural Development and Nature Conservation (IRDNC) director John Kasaona, who added that wildlife poisoning has been acknowledged as one of the most notable threats that has been threatening wildlife in Namibia and the Kunene Region in particular, resulting in numerous unaccounted for deaths of wild animals for the past 10 years.

Kasaona was responding to a recent incident in which two farmers were arrested for allegedly poisoning and killing four lions and two hyenas in the areas of the Otjombinde and Etanga conservancies in Kunene.

He told Namibian Sun that farmers who lose livestock to wild animals tend to resort to retaliation, using poison as their defence mechanism.

He argued that no lion/s in wild animals should be killed without permission, and the IRDNC, being tasked with protecting wildlife will undertake to actively pursue those who take the law into their own hands, he stressed.

"There are channels of communication that one should follow with regards to human-wildlife conflict, and this is to report such incidents rather than retaliating. We all know how areas are dominated by wild animals, and therefore ask for vigilance from our farmers in tackling this issue," he said, noting that raising awareness and public involvement has been a key element in tackling the problem.

Ministry of Environment, Forestry and Tourism spokesperson Romeo Muyunda echoed Kasaona's sentiments, stating that the law is clear when it comes to wildlife poaching, and it can lead to imprisonment.

He also touched on perceptions making the rounds on social media of government guarding wild animals more compared to livestock, a perception he described as erroneous, stating that wildlife is the country's natural resource, which is used to generate enough income in order to benefit everyone.

Muyunda said there are provisions in laws for lion and assisting farmers who lose their livestock to wild animals, and those laws need to be abided to in order to avoid misunderstandings and unnecessary imprisonment.

Nampa

VACANCY

NamPower

NamPower (Pty) Ltd, an equal opportunity employer invites candidates who are passionate about the Electricity Supply Industry and with uncompromising standard of excellence, to a career in the industry.

Position: Senior Occupational Health Nurse (Re-advertisement)

Business Unit: Human Capital

Station: Kuiseb (Swa)

Closing Date: 29 October 2021

Primary Purpose of the Job:

The incumbent will be responsible for primary and occupational health care, curative and emergency treatment, dispensing of medicine, coordination of the HIV/AIDS program and related activities/duties. He/She will also manage the Kuiseb Clinic, which caters for the NamPower employees and their dependants.

For Enquiries contact:

HC Officer: Human Capital, Finance & HMD

Tel: +264 61 205 2832

It is appealing to you, kindly note the following: Only on the e-recruitment system. No e-mailed or hand delivered applications will be accepted. Visit our website at www.nampower.com.na for more information.

In return for your skills, NamPower offers generous remuneration package and attractive fringe benefits in line with the seniority of the position.

NB: FEMALE CANDIDATES ARE ENCOURAGED TO APPLY. ONLY SHORTLISTED CANDIDATES WILL BE CONTACTED & NO PERSONAL DOCUMENTS WILL BE RETURNED.

INVITATION TO PUBLIC PARTICIPATION

Omaheke Energy, Tender Documentation, Contract Administration and Site Supervision for Pre-Upgrading to Low Voltage Rural Standard of 33/400 and 11/400 Substations – Nakaya (Gam 11/0kV), in the Erongo West Region.

Kindly note, Omaheke Energy (Pty) Ltd is undertaking a project for the pre-upgrading to Low Voltage Rural Standard of 33/400 and 11/400 Substations – Nakaya (Gam 11/0kV), in the Erongo West Region.

The Omaheke Electricity Distribution (Pty) Ltd is a licensed electricity distributor in terms of the Electricity Act No 4 of 2007 and carries out its distribution activities in the Omaheke Region.

Omaheke Energy (Pty) Ltd is now inviting suitably qualified and experienced consultants to submit proposals for the Tender Documentation, Contract Administration and Site Supervision for Pre-Upgrading to Low Voltage Rural Standard of 33/400 and 11/400 Substations – Nakaya (Gam 11/0kV), in the Erongo West Region.

Tenders will be received at the Omaheke Energy offices in Gobabis until Tuesday, 30 November 2021.

Tender documents (drawings, bills of quantities, specifications, etc.) may be obtained from the Omaheke Energy offices in Gobabis, upon payment of a non-refundable fee of N$ 1 000,00 per set.

Tenders must be submitted in the tender box at the Omaheke Energy offices in Gobabis by the closing date and time.

Tenders will be opened in the presence of those tenderers or their representatives who choose to attend.

Tenders must be valid for a period of 90 days from the closing date.

For more information, please contact:

Mr. Andre Hoffmann (Technical Matters)

Tel: +264 62 562 000 | Fax: +264 62 562 001 | Email: andre.hoffmann@omaheke.com.na

Mr. Ben Nghipondoka (Commercial Matters)

Tel: +264 62 562 000 | Fax: +264 62 562 001 | Email: ben.nghipondoka@omaheke.com.na

7.2 List of I&AP's Consulted

List of Interested and Affected Parties Consulted

Name & Surname	Organisation	Position	Tel.	E-mail	Means
Hon Sirrka Ausiku Ms Selma	Office of the Governor Kavango West Private Bag Nkurenkuru	Governor	081 128 4482 081 141 5619 (Selma)	Selma.shikukumwa@yahoo.com	
Mrs Kufuna Mrs Aloysia Upithe	Kavango West Regional Council	CRO	081 340 4210 081 668 4788	upithe81@gmail.com nangolo.martha@kavangowestrc.gov.na	
Hon Shiudifonya	Mpungu Constituency Office	Councillor	081 861 6585 081 153 4888	shiudifonya@gmail.com	
Hon Phillips Tenga	Nkurenkuru Constituency Office	Councillor	081 376 0088	tengafillips@gmail.com	
Regina	Nkurenkuru Town Council	Secretary to CEO		info@nkurenkurutc.com.na gmuntenda@yahoo.com 24novemba@gmail.com	
Mr Percy W. Misika Ms Lizzy Matys (Secretary)	Ministry of Agriculture, Water and Land Reform Private Bag 13184 Windhoek	Executive Director	061 208 7649	ED@mawf.gov.na	
Ms Esther Kaapanda Ms Esther Johannes (Secretary)	Ministry of Works and Transport Private Bag 13341 Windhoek	Executive Director	061 208 8822	Esther.Johannes@mwt.gov.na	
Mr Benetus Nangombe Ms Dorothea (Secretary)	Ministry of Health and Social Services	Executive Director		PA.ED@mhss.gov.na ED.Office@mhss.gov.na	

Ms.Timea Ngwira		Regional Director	081-127 0249 066-265507	Timea.ngwira@mhss.gov.na rmt@iway.na	
Ms Sanet Steenkamp	Ministry of Education, Arts and Culture	Executive Director		Johanna.Absalom@moe.gov.na info@moe.gov.na	
Mr. Fanuel Kapapero		Regional Director	066 2589111	sjuvensia61@gmail.com	
Mr Simson Haulofu **Ms Nangula Angula (PA)**	Namibia Power Corporation (Proprietary) Limited P.O. Box 2864 Windhoek				
Ms Nadia Haihambo		Head Environmental Officer	061 205 2350	nadia.haihambo@nampower.com.na	

7.3 Issues and concern register

No.	ISSUE	RAISED BY	RESPONSE PROVIDED	PROVIDED BY
1	What about the service ducts? Are standards taken into account?	Elizabeth Streitwolf	When we do the road design, we take care of all the adjacent services – waterlines, powerlines, MTC fibre, etc. There are specifications for these installations, we will just have to look where they need to be installed.	Rianus Gonteb
2	I agree that it will not look good to recruit people from outside. We will appreciate it if the people can be recruited from the villages along the project roads. Water for construction, the local community should be engaged because they know where the water is.	Muhenda Isaks		
3	I have a concern about the recruitment, although I want to thank you and appreciated what you have said, but my concern is that once the contractor comes, they will bring people from outside.	Paulus Ihemba	We will look at that and how we manage the recruitment process.	Boniface Tenga
4	Another concern is landownership, often you find people on the land that are not the owners.		The recruitment process will be done through the Governor's Office, the Regional Council Office, but it will be extended to the headmen and traditional leaders, they know the land and the people. Landownership is a very crucial issues especially when it comes compensation the headmen and traditional leaders will be engaged.	Rianus Gonteb
5	When we are starting the recruitment the headmen and community leaders that know the people should be involved and not necessarily the Councillor.			

6	I am seconding that the recruitment process should be done through the headmen and traditional leaders who know the people on the ground and the people living next to the road should be employed.	Lazarus Namakuwa	We hear you and we understand that recruitment is a big concern, we really understand, and we have written it down, but we would really like to hear some other concerns and comments from you as well.	Rian du Toit
7	I would like clarity, you said that the construction will start next year, and this is consultation in preparation for construction?	Eva Vejo	Yes, this is the pre-construction phase to engage with the community, community leaders and governance to hear the issues and concerns and inform about the project. It is to get the environmental things ready before construction starts next year when funds become available.	Rian du Toit
8	You came to do the EIA and study the impacts how the road is going to affect the community. We are supposed to what we foresee as negative impacts and give ideas how we want the environment to be treated when the construction is going to start. Employment issues should not be part of this, the contractor will be contracted by the Roads Authority and they will do the recruitment, we are jumping the gun. You need to hear the environmental issues, how are people going to live, the animals and plants etc we are supposed to give you that information.	David Hamutenya	Just a bit of understanding. Our role is to come up with the document, that document is the contract for the contractor. We need to make sure that the concerns that we hear here today are included in that document, when the contractor comes in July they must adhere to what is written in that document. We have exhausted the issue of employment and we understand. The environment also includes people and money. The Engineers need to adhere to the rules, there guidelines from the Roads Authority with regards to employment. The contracts are there to protect the people from the area. This is not the first roads project; I have been working on the environmental	Rianus Gonteb Rian du Toit

			aspect for roads projects for 19 years.	
9	I would like to ask about the Low Volume Seal Standard, I have a fear that the contractor is using substandard material.	Bernhard Hausiku	Remember there was one critical issue that I mentioned, it is not to jeopardise the quality of the road it is just a different way to do the design. The other roads have big trucks, which the Nepara road might not have. When we construct the big roads we will have 600mm of layers, but here we will have less, but that does not mean that it cannot withstand the traffic on the road.	Rianus Gonteb
10	I am concerned about the SME contractor that the recruitment process should be done through the Councillors office, instead it should be done the headmen and traditional leaders.	Johannes Sautete	We take note.	Boniface Tenga
11	I want to thank you for saying that SME from the region will be recruited and that afterwards they will have the knowledge and skill to do the maintenance themselves. If that had been the case on the Rundu-Divundu road and that local SMEs had the knowledge they might have been able to do maintenance earlier and the road would not be as bad as it is now.	Manfred Muronga		
12	I want to express my appreciation that you want to employ from the area, that is the right way to go. If you do what you say we will be	Stefanus Jacky		

	very happy. Also, the Governor and the Councillor cannot be sidelined, they are part of the Government.			
I&AP Forms Submitted				
13	We use the land for ploughing and want to put plots for our children. We are affected, we will lose our land and will not get another land to live on. We are planning to put plots for our children, a tuckshop and our animals to live. We want when they take our land they may give us something so that we will look for other land.	Hirombo Johannes		
14	We are interested in the project because it will cause good development to our village. No bad effect it will cause to us people. We need the tar road and we need the operations to start when it is their time given.	Mukonda Paulus		
15	My cultivated land is situated close to the road planned to be upgraded, my planned garage is also close to that road. We don't know when operations will start, therefore it will affect our production season. I was planning to fence the place and build a garage along the road. We need the tarred road very urgent and consider compensation for the land to be affected.	Kameya Elizabeth		

16	I am affected because my house and crop field are next to the road. I planned to fence my crop field that I live on.	Shushe Markus		
17	I am affected because my cucashop and half my field are all touched or will be affected by the road, both are very close to the road and may be damaged. My cucashop is a permanent place for me and shall become a permanent business area in future. My crop field is where I crop or cultivate food and where my house is built. I therefore would want to be compensated for the loss of my land and damage to my properties.	Maseke Gotfrieth		
18	I live very close to the road and my future plans will be negatively affected by the road and my plot boundary size will be reduced. I planned a welding project, a chicken project and yearly ploughing/cultivation for survival. Hoping that the rules and laws will apply according to the Namibian Constitution. Justice and fairness to prevail. Ethical principles to be applied.	Ndara Frans		

8. ENVIRONMENTAL IMPACTS

The Scoping Report will look at the Construction and Operational Phases of the project to determine the significance of the expected environmental impacts associated with the upgrade of the existing gravel road to a low volume seal. The following activities are generally associated with the construction of a road. These activities are kept in mind during the environmental impact assessment process.

- **Camp site establishment**
  - Demarcation of the camp site
  - Protection of vegetation and natural features
  - Protection of fauna
  - Protection of cultural historical aspects
  - Topsoil conservation
  - De-bushing and de-stumping
  - Structures construction: bulk water, sewage, electricity and accommodation
  - Parking and other required demarcated areas

- **Site infrastructure**
  - Batching plants
  - Crusher plants
  - Sand washing plants
  - Nurseries
  - Construction of service, haul and access roads
  - Gates and fences

- **Site management**
  - Rubble and waste rock
  - Solid waste
  - Liquid waste
  - Hazardous waste
  - Pollution control
  - Implements and equipment
  - Air quality
  - Noise control
  - Fire control
  - Health and Safety

- **Earthworks**
  - Prospecting boreholes and test pits
  - Excavations and trenches
  - Cut and fill
  - Shaping and trimming
  - Construction of pavement layers

- **Stockpiles, storage and handling**
  - Topsoil
  - Spoil
  - Vehicles and equipment
  - Fuel
  - Hazardous substances

8.1 Environmental Impact Assessment Process Methodology

One of the objectives of this study is to identify and quantify the potential positive and negative impacts which the proposed road will have on the receiving biophysical and socio-economic environment. A checklist is designed to help users identify the likely significant environmental effects of proposed projects during scoping. It is to be used in conjunction with the Checklist of Criteria for Evaluating the Significance of Impacts. There are two stages:

- **First**, identifying the potential impacts of projects;

- **Second** selecting those which are likely to be significant and therefore require most attention in the assessment.

A useful way of identifying the potential impacts of a project is to identify all the activities or sources of impact that could arise from construction, operation or decommissioning of the project, and to consider these alongside the characteristics of the project environment that could be affected, to identify where there could be interactions between them. The two parts of the Scoping Checklist have been developed to assist in this process.

Start with the checklist of questions set out below. Complete Column 2 by answering:

- yes - if the activity is likely to occur during implementation of the project;
- no - if it is not expected to occur;
- ? - if it is uncertain at this stage whether it will occur or not.

For each activity for which the answer in Column 2 is “Yes” or “?”, refer to the second part of the Scoping Checklist which lists characteristics of the project environment which could be affected, and identify any which could be affected by that activity. Information will be used about the surrounding environment in order to complete this stage. Note the characteristics of the project environment that could be affected, and the nature of the potential effects in Column 4.

Finally, use Checklist of Criteria for Evaluating the Significance of Impacts to help complete Column 5. This will identify those impacts which are expected to be significant. The questions are designed so that a “yes” answer will point towards a significant impact. It is often difficult to decide what is or is not significant but a useful simple check is to ask whether the effect is one that is of sufficient importance that it ought to be considered and have an influence on the development consent decision.

Table 5: Environmental Scoping Checklist

PART 1 OF THE SCOPING CHECKLIST: QUESTIONS ON PROJECT CHARACTERISTICS				
1. Will construction, operation or decommissioning of the Project involve actions that will cause physical changes in the locality (topography, land use, changes in water bodies, etc)?				
No.	Questions to be considered in the	Yes/No/?	Which Characteristics of the Project Environment	Is the effect likely to be significant? Why?
1.1	Permanent or temporary change in land use, land cover or topography including increases in intensity of land use?	Yes	The borrow pit operations will temporarily alter the land use, land cover and, for the borrow pits - topography of the area.	Low significance because of possible mitigation measures that can be implemented. Rehabilitation of borrow pits normally return the land use to its original state.

1.2	Clearance of existing land, vegetation and buildings?	Yes	Clearing of vegetation for construction operations influencing the vegetation, soils and topography. It is very unlikely that any buildings will be cleared.	Clearing of vegetation is always regarded as significant when it comes to road construction. However, mitigation measures can reduce the significance of the impact.
1.3	Creation of new land uses?	No	The new road will be built mostly on the existing alignment.	Low significance.
1.4	Pre-construction investigators eg boreholes, soil testing?	Yes	Materials testing are required to obtain construction materials which will affect the topography and vegetation cover.	The areas of disturbance are very small. Holes are dug to excavate samples and closed after sampling. Low significance.
1.5	Construction works?	Yes	During construction aspects such as social, soil, surface water, vegetation and geology can be affected.	The existing alignment will be used therefore there are no significant impacts anticipated.
1.6	Demolition works?	Yes	The removal of old culverts.	Very low or significance due to the low pollution risk and can be successfully mitigated.

1.7	Temporary sites used for construction works or housing of construction workers?	Yes	A temporary construction camp will probably be constructed where water and waste management are the most important activities that need to be mitigated.	Should these activities not be managed, it might have a negative impact on the soils, water and health and safety of the contractor workers. No permanent changes to the area are predicted.
1.8	Above ground buildings, structures or earthworks including linear structures cut and fill or excavations?	Yes	The above ground earthworks will be regarded as primarily for the road construction.	It is anticipated that the impact will not be significant due to the flat topography of the existing road.
1.9	Underground works including mining or tunnelling?	No		
1.10	Reclamation works?	No		
1.11	Dredging?	No		
1.12	Coastal structures egg seawalls, piers?	No		
1.13	Offshore structures?	No		
1.14	Production and manufacturing processes?	No		
1.15	Facilities for storage of goods or materials?	Yes	The storage of machines, gravel, crushed stone, sand, cement, bitumen and bulk fuel.	The storage of goods or materials can be mitigated therefore limiting the significance.

1.16	Facilities for treatment or disposal of solid wastes or liquid effluents?	Yes	Sewage effluent from the camp sites need to be treated or disposed.	This might have a significant negative impact on Health / Safety as well as soils and water if not managed effectively.
1.17	Facilities for long term housing of operational workers?	No		
1.18	New road, rail or sea traffic during construction or operation?	Yes	Construction of a bypass and traffic increase due to movement of construction vehicles.	Medium significance due to the popular tourist route.
1.19	New road, rail, air, water borne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	The current alignment will be followed.	The significance will be low due to the width and current alignment to be used.
1.20	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	Yes	There will be temporary bypasses constructed.	The significance is likely to be low due to the temporary nature of the activities.
1.21	New or diverted transmission lines or pipelines?	No		

1.22	Impoundment, damming, culverts, realignment or other changes to the hydrology of watercourses or aquifers?	Yes	New culverts will be constructed.	Should proper planning and consultation with local communities be applied, negative impacts on the hydrology of the rivers and tributaries should be limited therefore reducing the significance. Construction of new culverts will have a positive impact.
1.23	Stream crossings?	No		
1.24	Abstraction or transfers of water from ground or surface waters?	Yes	Water will be extracted for the construction phase of the project.	Water from boreholes will be used and the significance will be medium due to the scarcity of available water.
1.25	Changes in water bodies or the land surface affecting drainage or run-off?	Yes	The existing road impact on the drainage patterns.	The significance will be Low positive due to improved capacity of the drainage structures
1.26	Transport of personnel or materials for construction, operation or commissioning?	Yes	Surface characteristics.	No significance.
1.27	Long term dismantling or decommissioning or restoration works?	No		

1.28	Ongoing activity during decommissioning which could have an impact on the environment?	No		
1.29	Influx of people to an area is either temporarily or permanently?	?	It is uncertain what the impact might have on the migration of people in the region.	The significance is estimated to be low, but possible.
1.30	Introduction of alien species?	No		
1.31	Loss of native species or genetic diversity?	No		
1.32	Any other actions?	No		
2. Will construction or operation of the Project use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or in short supply?				
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which Characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**
2.1	Land especially undeveloped or agricultural land?	Yes	During construction, geological materials will be used for the filling and layer works. Soils will be affected and might therefore impact negatively on the agricultural / communal land.	The significance is low. The existing alignment will be followed with some small adjustments.

2.2	Water?	Yes	Water is used for domestic and construction purposes.	The available water will be used for construction. The significance will be medium due to the low volumes available.

3. Will the Project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health?

No.	Questions to be considered in Scoping	Yes/No/?	Which Characteristics of the Project Environment could be affected and how?	Is the effect likely to be significant? Why?
3.1	Will the project involve use of substances or materials which are hazardous or toxic to human health or the environment (flora, fauna, and water supplies)?	Yes	Hydrocarbons always pose a risk to the environment.	Water and soils are normally affected by spillages of hydrocarbons. The significance might be medium without mitigation measures.
3.2	Will the project result in changes in occurrence of disease or affect disease vectors (eg insect or water borne diseases)?	No		
3.3	Will the project affect the welfare of people eg by changing living conditions?	?	There is always a risk of altered quality with regards to living conditions of the adjacent people and the environment. This is with reference to HIV/AIDS.	The significance of such risks can be mitigated, ensuring low impact significance.

3.4	Are there especially vulnerable groups of people who could be affected by the project eg hospital patients, the elderly?	Yes	The proposed route will impact positively on the vulnerable groups due to improved mobility network and increased safety.	Positive medium significance.
3.5	Any other causes?	No		
4. Will the Project produce solid wastes during construction or operation or decommissioning?				
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which Characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**
4.1	Spoil, overburden or mine wastes?	Yes	Spoils will be generated during construction affecting the aesthetics appeal of the area.	No. This activity can be mitigated very successfully. Low significance.
4.2	Municipal waste (household and or commercial wastes)?	Yes	Domestic waste will be generated.	Medium significance should it not be properly managed.
4.3	Hazardous or toxic wastes (including radioactive wastes)?	Yes	Used oils and old batteries.	Mitigation measures are important to manage the handling and disposal of used oils and old batteries.
4.4	Other industrial process wastes?	No		
4.5	Surplus product?	No		
4.6	Sewage sludge or other sludge from effluent treatment?	Yes	Sewage is produced at the construction camp.	Sewage is always a very important impact that might have a negative impact on soils, water and health and safety.

4.7	Construction or demolition wastes?	No		
4.8	Redundant machinery or equipment?	No		
4.9	Contaminated soils or other material?	Yes	There is always a possibility that contamination of soils can occur during operation due to spillage of oils / diesel.	No. The scale of contamination is very limited and can be mitigated.
4.10	Agricultural wastes?	No		
4.11	Any other solid wastes?	No		
5. Will the Project release pollutants or any hazardous, toxic or noxious substances to air?				
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which Characteristics of the Project Environment could be affected and**	**Is the effect likely to be significant? Why?**
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources?	Yes	Gasses such as Nox and Sox are deposited in the air from the machines.	The quantity of these gasses will not impact significant negatively on the environment.
5.2	Emissions from production processes?	No		
5.3	Emissions from materials handling including storage or transport?	No		
5.4	Emissions from construction activities including plant and equipment?	Yes	Construction vehicles, power plants and the crusher plant will generate gaseous emissions.	The impacts might be low significant and can mitigated.
5.5	Dust or odours from handling of materials including construction materials, sewage and waste?	Yes	Dust from material handling and transport.	Yes. Dust might be a nuisance to receptors.

5.6	Emissions from incineration of waste?	No		
5.7	Emissions from burning of waste in open air (eg slash material, construction debris)?	Yes	Burning of waste will negatively affect the air quality.	The significance will be low negative.
5.8	Emissions from any other sources?	No		

6. Will the Project cause noise and vibration or release of light, heat energy or electromagnetic radiation?

No.	Questions to be considered in Scoping	Yes/No/?	Which Characteristics of the Project Environment could be affected and	Is the effect likely to be significant? Why?
6.1	From operation of equipment eg engines, ventilation plant, crushers?	Yes	The mining of borrow pits and production equipment produces noise and vibrations	No. The ambient receptors are minimal. The Health and Safety within close distance must be noted.
6.2	From industrial or similar processes?	No		
6.3	From construction or demolition?	Yes	Construction will produce noise.	Low significance due to low receptor density.
6.4	From blasting or piling?	No		
6.5	From construction or operational traffic?	Yes	The hauling trucks will produce noise and vibration.	No. The impact is very local and is not significant.
6.6	From lighting or cooling systems?	No		
6.7	From sources of electromagnetic radiation (consider effects on nearby sensitive equipment as well as people)?	No		

6.8	From any other sources?	No		

7. Will the Project lead to risks of contamination of land or water from releases of pollutants on the ground water into sewers, surface water, groundwater, coastal waters or the sea?				
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which Characteristics of the Project Environment could be affected and**	**Is the effect likely to be significant? Why?**
7.1	From handling, storage, use or spillage of hazardous or toxic materials?	Yes	Spillage of oils and other hydrocarbon may affect the water and soil.	With no mitigation the significance might be medium.
7.2	From discharge of sewage or other effluents (whether treated or untreated) to water or the land?	Yes	Effluent at the construction site might impact negatively on the surface water, soils and health and safety of the workforce.	Should the sewage not be properly managed the negative impact might be significant.
7.3	By deposition of pollutants emitted to air, onto the land or into water?	Yes	Gasses from the machines.	No. The volumes of emissions are limited.
7.4	From any other sources?	No		
7.5	Is there a risk of long term build-up of pollutants in the environment from these	No		

8. Will there be any risk of accidents during construction or operation of the Project which could affect human health or the environment?				
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which Characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous or toxic substances?	No		

8.2	From events beyond the limits of normal environmental protection eg failure of pollution controls systems?	No		
8.3	From any other causes?	Yes	The health and safety of road users might be affected by construction vehicles.	Might be significant if proper road traffic management is not conducted during the construction phase.
8.4	Could the project be affected by natural disasters causing environmental damage (eg floods, earthquakes, landslip, *etc)?*	No		
9. Will the Project result in social changes, for example, in demography, traditional lifestyles, employment?				
No.	**Questions to be considered in Scoping**	**Yes/No/ ?**	**Which Characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**
9.1	Changes in population size, age, structure, social groups etc?	No		
9.2	By resettlement of people or demolition of homes or communities or community facilities eg schools, hospitals, social facilities?	No		
9.3	Through in-migration of new residents or creation of new	?	In-migration of people might be a possibility.	The significance is unsure.
9.4	By placing increased demands on local facilities or services eg	No		
9.5	By creating jobs during construction or operation or causing the loss of jobs with effects on unemployment and the economy?	Yes	The local and larger community will benefit from the construction phase.	The significance might be positive medium due job creation and increased mobility.

9.6	Any other causes?	No		

10. Are there any other factors which should be considered such as consequential development which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality?

No.	Questions to be considered in Scoping	Yes/No/ ?	Which Characteristics of the Project Environment could be affected and how?	Is the effect likely to be significant? Why?
10.1	Will the project lead to pressure for consequential development which could have significant impact on the environment eg more housing, new roads, new supporting industries or utilities, etc?	Yes	New road will be constructed which will benefit the communities. Lower vehicle operating costs will contribute to the National economy.	The significance will be positive but the extent uncertain.
10.2	Will the project lead to development of supporting facilities, ancillary development or development stimulated by the project which could have impact on the environment eg: • supporting infrastructure • housing development • extractive industries • supply industries • other?	Yes	Stimulating the tourism industry.	This might be a significant positive impact on the town of Nkurenkuru - Nepara.
10.3	Will the project lead to after-use of the site which could have an impact on the environment?	No		
10.4	Will the project set a precedent for later developments?	?	Unlikely	
10.5	Will the project have cumulative effects due to proximity to other existing or planned projects with similar effects?	No		

PART TWO OF THE SCOPING CHECKLIST: CHARACTERISTICS OF THE PROJECT ENVIRONMENT

For each project characteristic identified in Part 1 consider whether any of the following environmental components could be affected.

Question - Are there features of the local environment on or around the Project location which could be affected by the Project? • There are no areas protected by law in the vicinity of the proposed site. • There is a low possibility of features of high historic or cultural importance. • Surface drainage patterns will be addressed through proper engineering design.
Question - Is the Project in a location where it is likely to be highly visible to many people? This road is not used extensively; therefore, the location is not highly visible to many people.
Question - Is the Project located in a previously undeveloped area where there will be loss of Greenfield land? No, the road will be constructed on the existing alignment.
Question - Are there existing land uses on or around the Project location which could be affected by the Project? There will be three borrow pits that will be opened but will not affect the existing land uses significantly.
Question - Are there any plans for future land uses on or around the location which could be affected by the Project? No. The area will probably remain agricultural / communal.
Question - Are there any areas on or around the location which are densely populated or built-up, which could be affected by the Project?
Question - Are there any areas on or around the location which are occupied by sensitive land uses which could be affected by the Project? No.
Question - Are there any areas on or around the location which contain important, high quality or scarce resources which could be affected by the Project? There are no scarce resources found around the project that could be influenced by the construction or operational phases of these projects, but there are some flora species (trees) that are protected by Forestry Legislation.
Question - Are there any areas on or around the location of the Project which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, which could be affected by the project?

Question - Is the Project location susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, fogs, severe winds, which could cause the project to present environmental problems?
Question - Is the Project likely to affect the physical condition of any environmental media? No, the proposed project will be constructed on the existing alignment.
Question - Are releases from the Project likely to have effects on the quality of any environmental media? • The air quality might deteriorate due to dust generation during construction but will improve during operation. • The quality of soil might deteriorate without proper management. • Acidification of soils or waters will probably not occur. • There will be some noise generated during the construction and operational phase of the road but will be limited to the site. Noise levels will decrease during the operation phase of the project. • The air quality will increase should the road be upgraded to bitumen standard.
Question - Is the Project likely to affect the availability or scarcity of any resources either locally or globally? • The project will use fossil fuels in liquid (diesel). • Water will be used for dust suppression, construction and domestic use. • The quarrying activity extracts geological materials on a non-renewable basis.
Question - Is the Project likely to affect human or community health or welfare? • The quality of air will be affected due to construction activities and hauling. Even though this is the case, human health might not be problematic. • No mortality or morbidity might be experienced by human receptors. • The project will have a positive impact on the social economic welfare of the region.

In the Scoping checklist, the significance must be indicated. To facilitate this procedure, the following questions were considered during the rating:

Questions that were considered to determine significance:

1. Will there be a large change in environmental conditions?
2. Will new features be out-of-scale with the existing environment?
3. Will the effect be unusual in the area or particularly complex?
4. Will the effect extend over a large area?
5. Will there be any potential for trans frontier impact?
6. Will many people be affected?
7. Will many receptors of other types (fauna and flora, businesses, facilities) be affected?
8. Will valuable or scarce features or resources be affected?
9. Is there a risk that environmental standards will be breached?
10. Is there a risk that protected sites, areas, features will be affected?
11. Is there a high probability of the effect occurring?
12. Will the effect continue for a long time?
13. Will the effect be permanent rather than temporary?
14. Will the impact be continuous rather than intermittent?
15. If it is intermittent will it be frequent rather than rare?
16. Will the impact be irreversible?
17. Will it be difficult to avoid, or reduce or repair or compensate for the effect?

8.2 Environmental Impact Assessment Summary

The following environmental impacts were identified during the assessment procedure as described above. The impacts are classified as either positive or negative and the significance ratings as low, medium and high.

Activity	Aspect / Impact	Positive / Negative	Significance
Land use / topography, and land use cover.	The quarry operations will permanently alter the land use, land cover and, for the borrow pits - topography of the area.	Negative	Low
	Areas zoned as undetermined or agricultural will change to transport (land use).	Negative	Low
Clearance of existing land, vegetation and buildings.	Clearing of vegetation for construction operations influencing the vegetation, soils and topography.	Negative	Low
Creation of new land uses.	The existing land use will change from agricultural to road (land use).	Negative	Low
Pre-construction investigators egg boreholes, soil testing?	Materials testing are required to obtain construction materials which will affect the topography and vegetation cover.	Negative	Low
Construction activities.	During construction aspects such as social, soil, surface water, vegetation and geology can be affected.	Negative	Low
Demolition works?	The possible removal of old culverts and bridges.	Negative	Low
Temporary sites used for construction works or housing of construction workers?	A temporary construction camp will probably be constructed where water and waste management are the most important activities that need to be mitigated.	Negative	Low
Above ground buildings, structures or earthworks including linear structures cut and fill or excavations.	The above ground earthworks will be regarded as primarily for the road construction. Permanent changes will take place (land use).	Negative	Low

Facilities for storage of goods or materials.	Pollution of soils and water.	Negative	Medium
Facilities for treatment or disposal of solid wastes or liquid effluents?	Sewage effluent from the camp sites need to be treated or disposed.	Negative	Medium
New road, rail or sea traffic during construction or operation?	Limited traffic increase due to movement of construction vehicles.	Negative	Low
Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	There will be temporary bypasses constructed.	Negative	Low
Impoundment, damming, culverts, realignment or other changes to the hydrology of watercourses or aquifers.	Water balancing is an important aspect to be evaluated. Improving the culverts on the road will be positive.	Positive	Low
Abstraction or transfers of water from ground or surface waters?	Water will be extracted for the construction phase of the project.	Negative	Medium
Changes in water bodies or the land surface affecting drainage or run-off?	Drainage will improve due to the increased structures (culverts) and widening of the bridges.	Positive	Medium
Influx of people to an area in either temporarily or permanently	Migration of people might impact on the socio-economic structure of the area. The risk of HIV/AIDS may increase due to the influx.	Negative	Low
Loss of native species or genetic diversity?	Surface disturbances always impact on the biodiversity of an area.	Negative	Low
Resources such as land and water.	Very limited agricultural land will be affected due to the construction of the road.	Negative	Low
	Water is used for domestic and construction purposes.	Negative	Medium
Will the project involve use of substances or materials which are hazardous or toxic	Hydrocarbons always pose a risk to the environment.	Negative	Medium

to human health or the environment (flora, fauna, and water supplies)?			
Will the project affect the welfare of people eg by changing living conditions?	The proposed route will impact positively on the vulnerable groups due to improved mobility network.	Positive	Medium
Spoil, overburden or mine wastes?	Spoils will be generated during construction affecting the aesthetics appeal of the area.	Negative	Low
Pollution on site (domestic and construction waste).	Pollution of the natural environment (soil and water).	Negative	Medium
Sewage sludge or other sludge from effluent treatment?	Sewage is produced at the construction camp.	Negative	Medium
Contaminated soils or other material.	There is always a possibility that contamination of soils can occur during operation due to spillage of oils / diesel.	Negative	Low
Emissions from combustion of fossil fuels from stationary or mobile sources.	Gasses such as Nox and Sox are deposited in the air from the machines.	Negative	Low
	The movement from vehicles will generate noise, dust and gaseous emissions.	Negative	Low
Will the project cause noise and vibration from blasting?	Blasting might be conducted which will impact on existing water sources, houses and other receptors in the area.	Negative	Low
Emissions from burning of waste in open air (eg slash material, construction debris)?	Burning of waste will negatively affect the air quality.	Negative	Low
By creating jobs during construction or operation or causing the loss of jobs with effects on unemployment and the economy?	The local community will benefit from the construction phase through additional employment opportunities.	Positive	Medium

Will the project lead to pressure for consequential development which could have significant impact on the environment eg more housing, new roads, new supporting industries or utilities, etc?	New road will be constructed which will benefit the communities by improving access to schools, clinics, tourism places and churches.	Positive	Medium
	New road will be constructed which will benefit the communities. Lower vehicle operating costs will contribute to the National economy.	Positive	Medium
Will the project lead to development	Access improvement to facilities in the region will benefit the local and regional communities.	Positive	Medium