PROPOSED CONSTRUCTION OF ESKOM RHOMBUS LETHABONG 88KV POWERLINE AND SUBSTATION, NORTH WEST PROVINCE; RUSTENBURG LOCAL MUNICIPALITY.

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DRAFT BASIC ASSESSMENT REPORT

June 2014

DEA REFERENCE: 14/12/16/3/3/1/1110

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PROPOSED CONSTRUCTION OF ESKOM RHOMBUS LETHABONG 88KV POWERLINE AND SUBSTATION, NORTH WEST PROVINCE; RUSTENBURG LOCAL MUNICIPALITY.

This Basic Assessment was compiled by:

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Ms. Nkhensani Khandlhela heads the project team and acts as the Project Manager for all phases of the project. Nkhensani holds a M.Sc. (Geographical Sciences). She is an Environmental Scientist with 8 years of experience. Nkhensani specialises in Integrated Environmental Management (IEM), Environmental Impact Assessments (EIAs), rural development, land use issues and socio-economic surveys. Nkhensani has been a project scientist for various EIA's in KwaZulu Natal, Eastern Cape and Gauteng provinces of South Africa. Nkhensani is currently a Project Manager and Environmental Scientist at Envirolution

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environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **1 September 2012**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section? YES **YES**

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. Project Description

a) Describe the project associated with the listed activities applied for

1.1 Background Information

Eskom Holdings SOC Ltd is submitting an application to the Department of Environmental Affairs (DEA) for the Proposed Construction of the Eskom Rhombus Lethabong 88kV Powerline and Substation, Rustenburg Local Municipality, North West Province. The proposed powerline will be about 25km and a 100m x 100m (1 hectare) site is required for the construction of the 88kV substation. The objective of the proposed powerline and substation is to strengthen the current network capacity as well as to improve the quality of supply in the surrounding areas. The 11kV network in Brits needs to be strengthened in order to create capacity to accommodate new loads in the area since there are applications received in the area for connection. Many of these applications are being rejected due to shortage of capacity. The power line falls within the boundaries of Bojanala District Municipality, in the North West Province.

Three alternatives routes have been considered for the proposed powerline and two sites have been considered for the location of the substation. Please refer to attached Locality map for details. This Basic Assessment Report (BAR) covers the findings of the site assessment and impacts identified in the proposed powerline and the associated Alternative sites for the proposed construction of the substation.

1.2 Project Description and Routes and Substation Description

The proposed substation site is situated south of Bethanie near the entrance gate of the Rhovan Mine. The substation alternative site is on the western side of the settlement of Bethanie along the entrance road to Rhovan Mine. The substation will occupy a footprint of approximately 100m x 100m.

The project entails the construction of an overhead 88kV power line between the proposed Rhombus Substation and the future Lethabong Substation (The Lethabong Substation is part of another EIA application). One proposed /preferred route and two alternative routes (deviations of the proposed route) of approximately 25 km each in length have been suggested and stretches between a location near the settlement of Bethanie through areas of farmland and wilderness to a water reservoir north of Hartbeestfontein referred to as Kortbegrip Reservoir. As has already been mentioned, two alternative sites have been considered during the Basic Assessment for the location of the substation. Both Alternative sites are located on Portion 2 of the Farm Losperfontein 405 JQ. All three alignments are between the future Lethabong Substation sites and follow different routes through areas of wilderness and cattle farms to one of the two proposed Rhombus Substation Sites near Bethanie which are outside the scope of this EIA. Please refer to **Figure 1** and **Appendix A** for project location, **Appendix B** for the Site photographs showing an overall view of the site, and Appendix **C** for the Infrastructural layout plans.

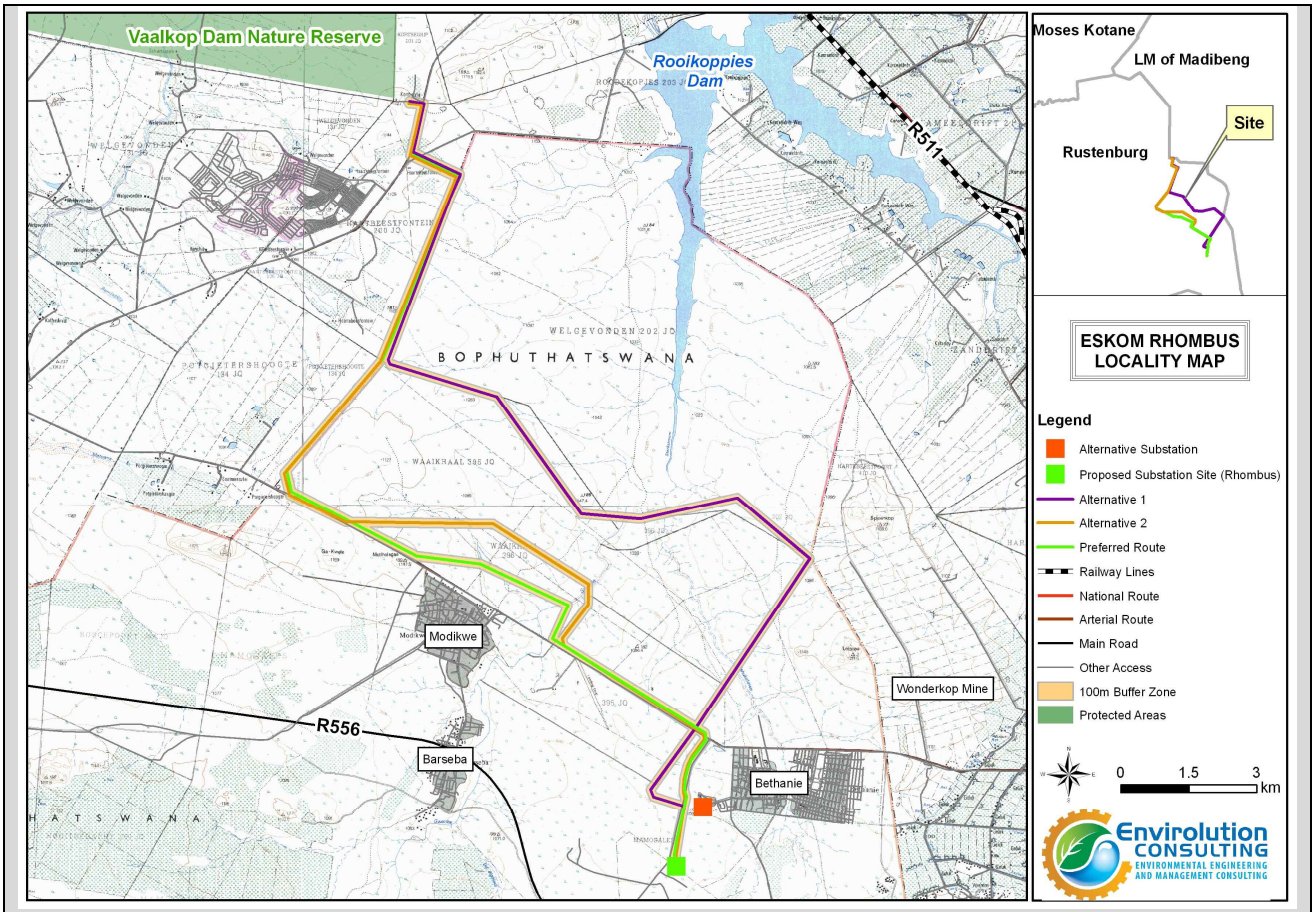


Figure 1: Map showing location of the powerline and substation in relation to the previously authorised route.

1.2.1 Preferred Route

The preferred route starts at the mine southwest of Bethanie and follows most of the time the Bethanie – Modikwe road. About 3km before Modikwe it turn away from the road to follow it later again on the farm Waaikraal. At the farm corner it follows the western farm boundary of Waaikraal as well as the western boundary of the farm Welgevonden. At this point it makes a 90° turn to the left to cross the Rustenburg – Vaalkop Dam road. The route follows this road to a point at the foot of a granite hill near the Kwamahla Lodge.

1.2.2 Alternative 1

The Alternative 1 route starts at a site next to Bethanie and crosses the mine's access route to the northern corner of the tailings dam. From here it follows a north-eastern route across the Bethanie – Modikwe road for about 6 km. From here it makes a 90° turn to the left to follow more or less the southern farm boundary of the farm Welgevonden to the south western corner of the farm. From here it follows the same route as those of the preferred route and Alternative 2 to the foot of a granite hill near the Kwamahla Lodge.

1.2.3 Alternative 2

The alternative 2 route follows the same route as the preferred route except at the point 3km before Modikwe it follows a route further north to join the preferred route again close to the south western corner of the farm Waaikraal. The rest of the route is the same as that of the preferred route to the foot of a granite hill near the Kwamahla Lodge.

1.2.4 Proposed Substations

The proposed substation site is situated south of Bethanie near the entrance gate of the Rhovan Mine which is currently vacant. The alternative site is on the western side of the settlement of Bethanie along the entrance road to Rhovan Mine The proposed substation sites will occupy a footprint of approximately 100m x 100m. Both substations are located on

Portion 2 Farm Losperfontein 405 JQ.

1.3 Project Locality

The power line falls within the boundaries of the Rustenburg Local Municipality and the Bojanala District Municipality, in the North West Province. The study area for the proposed distribution line is located near the settlements of Bethanie, Barseba and Modikwe, as well as Hartbeestfontein. The Rhovan Mine (a Glencore Managed Operation) is situated to the southwest of Bethanie close to the proposed substation areas. The KwaMahla Lodge (east of the Hartbeesfontein/Beestekraal Road) and Mziki Safari Lodge (west of the Hartbeesfontein/Beestekraal Road) are situated nearby the line's most northern section in close proximity to Hartbeestfontein. The southern tip of the Rooikoppies Dam is located to the north of the study area, and the Vaalkop Dam Nature Reserve is situated to the northwest of the northern section of the study area.

1.4 Environmental Setting

The geology of the study area is underlain by granites. The topography is undulating plains with occasional outcrops in places. Seasonal drainage lines crisscross the landscape and drains northwards to the Rooikoppies Dam. The soils are usually relatively shallow, coarsely grained, and sandy soils (Mucina & Rutherford, 2006). Typical soil forms associated with soils of granitic origin Glenrosa, Avalon, Hutton, Bonheim, Dundee and Wasbank. Shales also occur in the study area. These shales are permeable and water percolates easily through them, usually becoming trapped as perched aquifers above more solid granitic intrusions. Hill-slope seeps are usually present on slope faces where outcrops of these impermeable layers occur. The Krokodil River and its tributaries drain a substantial part of the study area and drains eventually into the Rooikoppies Dam. Typical soil forms of these low-lying areas along streams.

The Brits area's rainfall is mainly in the form of thunderstorms which occur mainly in the summer. During these downpours high runoff occurs especially in areas with low vegetation cover (e.g. disturbed areas, rocky outcrops, etc.). Runoff during and after rainstorms is often quick and powerful and creates typically frequent flash floods. Although seasonal in character these streams are still functional drainage channels with riparian vegetation and they have the typical properties of an aquatic drainage system.

The typical and dominant vegetation type of the study area is the vulnerable Central Sandy Bushveld (SVcb12) as described by Mucina & Rutherford (2006). To the extreme south of the study area is a small portion of the endangered Marikana Thornveld (SVcb6)(Mucina & Rutherford, 2006) on clayey soils.

1.5. Specialist studies

Several specialist studies have been undertaken to provide more detailed information on the environment aspects that may be affected by the proposed project. Specialist Ecological (Flora and Fauna), Wetland, Visual, Heritage and Geotechnical Assessments were undertaken during the Basic Assessment and their reports are attached as Appendices to this BAR.

1.5 Servitude Requirements

The servitude width required by Eskom for the 88kV overhead distribution line is 31 metres (15.5 metres from the centre of the powerline) while the separation distance between an 88kV line and any other line is 21m.

Vegetation clearance for the proposed distribution power line will be minimal due to the mainly grassland habitat. The Eskom Standard and specifications for vegetation clearance and invasive alien plant management for new power line construction specifications have been incorporated into the Environmental Management Programme (EMPr), which will guide the construction, operational and maintenance phases of the project. A 88kV distribution substation normally requires a footprint of about 10000m^2.

1.6. Access roads

For construction purposes the proposed sites can be reached via the existing access roads. No roads that trigger NEMA Regulations Listed Activities will be required. An existing gravel road (that will be upgraded as part of this development) provides access to the site. The use of roads on private property will be subject to the Environmental Management Programme (EMPr) and will be determined based on discussions with landowners should it be necessary.

Stormwater will be managed according to the Eskom Guidelines for Erosion Control and Vegetation Management (**Appendix G1**) as well as the Environmental Management Programme (EMPr) that has been compiled for the construction and operational phase.

1.7. Construction Site Camps

Normally the powerline contractor would set up at least one site camp but this does not necessarily need to be near the substation site. The contractor may however prefer to use a fully serviced site in another location. The exact location of the construction camps and material stockyards are yet to be determined.

1.8 Sewage

A negligible sewage flow is anticipated for the duration of the construction period. Onsite treatment will be undertaken through the use of chemical toilets. The toilets will be serviced periodically by the supplier and effluent will be collected for disposal into the registered Waste Water Treatment Works.

1.9 Solid Waste Disposal

All solid waste will be collected at a central location at each construction site and will be stored temporarily until removal to a registered permitted landfill site.

1.10 Concrete Batching

Concrete batching will be required for the foundations of the distribution line towers. The following guidelines are contained in the Eskom specification For The Distribution Line Towers and Line Construction:

a) The Contractor shall be responsible for negotiating the site of his batching plant (if required) and the conditions under it may be established, with the landowner. The Contractor shall be responsible for the proper management of the batching plant.
b) Upon completion of works, the ground of the batching plant area shall be rehabilitated and the site cleaned and left as it was found and to the satisfaction of the Supervisor and landowner.
c) It is advised that the contractor provides water for batching on site. In an event that the use of local water for concrete is to be utilised it is of importance to first negotiate with the landowner and the appropriate authorities. Such water is to be analysed and accepted by the Project Manager
before use

1.11 Foundations

The excavations shall be kept covered or barricaded in a manner accepted by the Supervisor to prevent injury to people or livestock. Failure to maintain proper protection of excavations may result in the suspension of excavation work until proper protection has been restored.

1.12 Stringing

Once towers have been erected, cables will be strung between the towers.

1.13 Bird Flight Diverters

Bird flight deflectors will be fitted on the structures during the construction phase.

1.14 Electricity
Diesel generators will be utilised for the provision of electricity where electricity connection is not readily available.

1.15 Construction Process
Generally, the construction of the powerline is expected to consist of the following sequential phases:

Step 1: Feasibility and identification of line alternatives.
Step 2: Basic Assessment input and environmental permitting.
Step 3: Negotiation of final route with affected landowners.
Step 4: Survey of the proposed route.
Step 5: Selection of structures suited to the terrain and ground conditions.
Step 6: Final design of the distribution line and placement of towers.
Step 7: Issuing of tenders and eventually appointment of contractors for the project.
Step 8: Vegetation clearance and construction of access roads (if required).
Step 9: Pegging of structures.
Step 10: Construction of foundations.
Step 11: Assembly and erection of structures.
Step 12: Stringing of conductors.
Step 13: Rehabilitation of disturbed areas and protection of erosion sensitive areas.
Step 14: Testing and commissioning.
Step 15: Operation and routine maintenance.

It is estimated that the construction period for this project will be 18-24 months.

b) Provide a detailed description of the listed activities associated with the project as applied for

GN R 544 2010 (Listing Notice 1) 10 (i)	
The construction of facilities or infrastructure for the transmission and distribution of electricity – ***(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts;*** •	***The proposed 88kV line will be approximately 20km metres in length and an area of about 100m x100m (1hectare) is required to construct the proposed substation.***
GN R 544 2010 (Listing Notice 1) 11	
The construction of: ***(xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse.***	***The proposed powerline interacts with watercourses***

GN R 544 Listing Notice 1) 23	
The transformation of undeveloped, vacant to – residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares	***An area of about 100m x100m (1hectare) is required to construct the proposed substation and Eskom may clear above 10000m² for the purposes of substation construction***
GN 544, 18 June 2010 - Activity 47: of Listing notice 1 of 2010	
The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre - ***(i) where the existing reserve is wider than 13,5 meters; or*** ***(ii) where no reserve exists, where the existing road is wider than 8 metres –*** ***excluding widening or lengthening occurring inside urban areas***	***The proposed development would involve widening of existing access roads to ensure the ease of construction and maintenance of the proposed power line***

2. Feasible and Reasonable Alternatives

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Regulation 22(2)(h) of GN R.543. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should

be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Site alternatives

A: Substations:

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
	25°34'18.448"S	**27°34'54.318"E**
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
	25°33'37.382"S	**27°35'11.512"E**
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
	N/A	**N/A**

In the case of linear activities:

As has already been mentioned, two alternative sites have been considered during the Basic Assessment for the location of the substation. The proposed substation site is situated south of Bethanie near the entrance gate of the Rhovan Mine which is currently vacant. The alternative site is on the western side of the settlement of Bethanie along the entrance road to Rhovan Mine. The proposed substation sits will occupy a footprint of approximately 100m x 100m. Please refer to **Figure 1** for project location and Site photographs contained in **Appendix A** for an overall view of the site.

B: Powerline:

Alternative: Proposed route	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity	**25° 25' 13" S**	**27° 31' 21" E**
• Middle/Additional point of the activity	**25° 30' 04" S**	**27° 30' 16" E**
• End point of the activity	**25° 34' 20" S**	**27° 34' 54" E**
Alternative S2 (if any) – **Alternative 1**		
• Starting point of the activity	**25° 25' 12" S**	**27° 31' 22" E**
• Middle/Additional point of the activity	**25° 30' 03" S**	**27° 35' 03" E**
• End point of the activity	**25° 34' 16" S**	**27° 34' 54" E**
Alternative S3 (if any) – **Alternative 2**		
• Starting point of the activity	**25° 25' 14" S**	**27° 31' 27" E**
• Middle/Additional point of the activity	**25° 30' 14" S**	**27° 30' 57" E**
• End point of the activity	**25° 34' 19" S**	**27° 34' 55" E**

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A.

The proposed deviation will entail the construction of a 88kV distribution line and an approximately 23 km powerline. The distribution line will run from the proposed Rhombus substation in north westerly direction through some parts of Bethanie and Modikwe where it will terminate some few kilometres before Lethabong. It will transects farms the Waaikraal 396JQ; Portion 1; Waaikraal 396 JQ; Portion 2, Waaikraal 396 JQ; Portion 5; Waaikraal 396 JQ; Portion 6; Waaikraal 396 JQ; Portion 7, Waaikraal 396 JQ; Portion 8, Losperfontein 405 JQ; Portion 2, Hartbeestfontein 228 JQ; Portion , North West Province.

a) **Lay-out alternatives**

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives:

Proposed powerline
*Examples of Schematic drawings of the powerline infrastructures and substation that may be used for the development have been included in **Appendix C**. NB: Please note that details regarding the number and the type of towers and other support infrastructures associated with the powerline will be confirmed during the detail design phase and following the approval of the proposed development. Currently it is proposed that a combination of Steel Mono Pole 88kv Compact Line Tower Series, Stayed angle structure 0 - 90 degree deviation (D-DT 7615),Intermediate single circuit structure 0 degree deviation (D DT 7611), Steel H Structures For 88kv Lines, Steel Terminal H-structure 120kN Capacity 8m Cross Arm (D-DT 7808) and self supporting lattice structures (D-DT 7705:– 248A and D-DT 7706:– 248B) will be used at the bends Refer to **Appendix C** for details.*
Alternative 2
Alternative 3

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)		
Alternative 2		
Alternative 3		

e) No-go alternative

The No-go option implies that the Project does not proceed, and will thus comprise of Eskom not

going ahead with the construction of the 88kV powerline. Ideally this would be the preferred alternative as the status quo of the environment remains unchanged, due to the growing demand for energy in the area however this alternative is not feasible. Should Eskom rely on the existing network to supply future demand it is highly likely that present supply will be compromised due to the increased load on the network. High energy demand activities e.g. mining are prominent in the area. Currently a large amount of pressure is placed on other existing substations and it is unlikely that these substations capacities will be able to meet future demands.

Paragraphs 3 – 13 below should be completed for each alternative.

3. Physical Size of the Activity

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

A: Substation:

Alternative:	**Size of the activity:**
Alternative A1[1] (preferred activity alternative)	±10000m²
Alternative A2 (if any)	±10000m²
Alternative A3 (if any)	N/A

or, for linear activities:

A: Powerline:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	±23km
Alternative A2 (if any)	±23km
Alternative A3 (if any)	±25km

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	**Size of the site/servitude:**
Powerline (preferred activity alternative)	22 m servitude (11 m from centre of powerline)
Substation:	
Alternative A1 (preferred activity alternative)	±10000m²
Alternative A2 (if any)	±10000m²

4. Site access

Does ready access to the site exist?	**YES**	NO
If NO, what is the distance over which a new access road will be built		m

Describe the type of access road planned:

The proposed sites can be reached via the existing access roads. Hartbeesfontein/Beestekraal Road (D1344), Modikwe/Bethanie Road; Modikwe/Beestekraal gravel road

[1] "Alternative A.." refer to activity, process, technology or other alternatives.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

5. Locality map

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

6. Layout/route plan

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. Sensitivity map

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and

- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. Site photographs

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. Facility illustration

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

10. Activity motivation

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	YES	**NO**	Please explain
Most of the proposed route and substation passes through privately owned farm areas. Once in place, the power line is unlikely to significantly disrupt farming and mining activities. Eskom will acquire all servitudes, affected property owners will be permitted to use areas underneath the lines for farming. Other activities, besides the construction of buildings and tall structures and growing of tall trees, may also continue below the lines.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	**YES**		
According to PSDF the Rustenburg Local Municipality are experiencing severe backlog with the implementation of approved Electricity Master Plan thus problems such as Ageing of electricity equipment resulting in cutoffs/ blackouts, Illegal electricity connections, Backlog with electricity network upgrading are commonly noted.			
(b) Urban edge / Edge of Built environment for the area	**YES**		
The development is outside urban edge			

(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	**NO**	Please explain
The objective of the proposed powerline and substation is to strengthen the current network capacity as well as to improve the quality of supply in the surrounding areas. The 11kV network in Brits needs to be strengthened in order to create capacity to accommodate new loads in the area since there are applications received in the area for connection. Many of these applications are being rejected due to shortage of capacity. The upgrading of the City's electricity network has therefore become a strategic priority, especially the substations and transmission lines			
(d) Approved Structure Plan of the Municipality	**YES**		Please explain
The proposed project entails electricity infrastructure, which is compatible with the Rustenburg Local Municipality 2012/2017 IDP			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	**YES**	NO	Please explain
There is no EMF that has been compiled for the area. The North West Biodiversity Conservation Assessment can be used to guide priority areas in terms of Conservation			
(f) Any other Plans (e.g. Guide Plan)	**YES**		Please explain
Beside the North West Biodiversity Conservation Assessment and the 2012/2017 IDP, no other plans are known to guide the development			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	**YES**		Please explain
The proposed development is in line with the National Development Plan and the Rustenburg Local Municipality SDF's and IDP's, which related to the provision and upgrade of City infrastructure such as electricity supply			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	**YES**		Please explain
The objective of the proposed powerline and substation is to strengthen the current network capacity as well as to improve the quality of supply in the surrounding areas. The 11kV network in Brits needs to be strengthened in order to create capacity to accommodate new loads in the area since there are applications received in the area for connection. Many of these applications are being rejected due to shortage of capacity. The upgrading of the City's electricity network has therefore become a strategic priority, especially the substations and transmission lines			

5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	**YES**		Please explain
The proposed project is the construction of 88kV distribution line and substation aimed at improving the quality of supply. It will not require any capacity for services such as water and sanitation from relevant Municipalities. It will however improve the quality of supply in the area			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	**YES**		Please explain
The proposed project is the construction of 88kV distribution line and substation aimed at improving the quality of supply. It will not require any capacity for services such as water and sanitation from relevant Municipalities. It will however improve the quality of supply in the area			
7. Is this project part of a national programme to address an issue of national concern or importance?	**YES**		Please explain
The upgrading of the electricity network and infrastructure especially the substations and transmission and distribution lines is a strategic priority towards addressing the shortage of electricity in South Africa.			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES	NO	Please explain
Although the proposed development transverse privately owned agricultural and mining areas, the location of the sites is strategic selected such that is within or next to the centre of the load demand			
9. Is the development the best practicable environmental option for this land/site?	**YES**	NO	Please explain
Most of the proposed route and substation passes through privately owned farms and mining areas. Once in place, the power line is unlikely to significantly disrupt farming activities. Eskom will acquire all servitudes, affected property owners will be permitted to use areas underneath the lines for farming. Other activities, besides the construction of buildings and tall structures and growing of tall trees, may also continue below the lines			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	**YES**	NO	Please explain
The objective of the proposed powerline and substation is to strengthen the network capacity as well as to improve the quality of supply in these areas.			

11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	**YES**	NO	Please explain
Sixty percent (60%) of the line will run parallel next to the existing Power-lines			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	**NO**	Please explain
The proposed powerline and substation construction will not negatively affect any persons rights. The servitude rights for the line will be acquired by Eskom and financial compensation will be paid.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	**NO**	Please explain
The proposed powerline and substation will transverse agricultural lands that are outside the urban edge			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	**YES**	NO	Please explain
Acceleration of identified in transmission infrastructure has been highlighted as of importance in unlocking the economic opportunities in the Northwest province. (SIP 4). Sip 10 has also identified the expansion of electricity transmission and distribution network as a way to address historical imbalances and providing access to electricity for and supporting economic development.			
15. What will the benefits be to society in general and to the local communities?			Please explain
The provision of a reliable electricity network and provision of capacity for new users.			
16. Any other need and desirability considerations related to the proposed activity?			Please explain
The proposed project will ensure that economic growth continues in the region as the region has several mining developments			
17. How does the project fit into the National Development Plan for 2030?			Please explain
CHAPTER 4 of the National Development Plan 2030 on Economic Infrastructure has outlined how the proportion of people with access to the electricity grid should rise to at least 90 percent by 2030, with non-grid options available for the rest. Action 2020 of The National Development Plan also considers the Ring-fencing the electricity distribution businesses of the 12 largest municipalities (which account for 80 percent of supply), resolve maintenance and refurbishment backlogs and develop a financing plan, alongside investment in human capital. The Rhombus Lethabong project serves to improve the quality of electricity supply for anticipated project in the Rustenburg Local Municipality.			
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.			
This report serves as a Basic Assessment report that will investigate all potential impacts (social, economic and environmental) that may result from the development including alternatives, assess and evaluate and further provide a mitigation plan for all identified potential impacts.			

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.
Specialist investigations (fauna, flora, fauna, visual, heritage, geotechnical) were appointed to investigate potential environment impacts. Identified environmental impacts were assessed and mitigation measures provided to control and manage these environmental impacts. Interested and Affected parties, land owners and relevant stakeholder were identified and involved throughout the Basic Assessment process and their comments addressed and recorded as part of this assessment.

11. Applicable Legislation, Policies and/or Guidelines

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act, No. 107 of 1998 (NEMA), as amended & NEMA EIA Regulations, 2010: GN544, published in Government Gazette 33306 on 18 June 2010	A Basic Assessment Report (BAR) is required for this project.	Department of Environmental Affairs (DEA)	1998
National Environmental Management: Biodiversity Act, Act 10 of 2004	The North West Biodiversity Conservation Assessment can be used to guide priority areas in terms of Conservation of CBA's and ESA	Department of Environmental Affairs (DEA)	2004
National Water Act, No. 36 of 1998	The proposed distribution lines are within 500m of wetlands.	Department of Water Affairs (DWA)	1998
National Heritage Resources Act (Act No 25 of 1999)	Resources could be identified during construction phase	South African Heritage Resources Agency	1999

12. Waste, Effluent, Emission And Noise Management

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	**YES**	NO
If YES, what estimated quantity will be produced per month?		$10m^3$

How will the construction solid waste be disposed of (describe)?

Small quantities of solid waste will be generated during the construction phase of the project. This waste will be disposed at a licensed waste facility by the contractor. Note soil excavated from trench and earth works during the grading of the substation will be used as backfill

Where will the construction solid waste be disposed of (describe)?

Construction waste will be collected by waste trucks on a weekly basis and disposed off at the Rustenburg registered landfill site.

Will the activity produce solid waste during its operational phase?	**YES**	NO
If YES, what estimated quantity will be produced per month?	±25m^3	

How will the solid waste be disposed of (describe)?

Construction waste will be collected by waste trucks on a weekly basis and disposed off at a registered landfill site.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

Rustenburg Regional Waste Site

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

N/A

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?	YES	**NO**

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?		**NO**

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?		**NO**
If YES, what estimated quantity will be produced per month?	m^3	
Will the activity produce any effluent that will be treated and/or disposed of on site?		**NO**

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Chemical toilets are going to be used and the sewage waste will be collected by the Contractor on weekly basis for disposal on a hazardous waste site

Will the activity produce effluent that will be treated and/or disposed of at another facility?	**YES**	

If YES, provide the particulars of the facility:

Facility name:	Rustenburg Regional Waste Disposal Facility
Contact person:	Rustenburg Local Municipality

Postal address:			
Postal code:			
Telephone:		**Cell:**	
E-mail:		**Fax:**	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

None, as effluent from chemical toilets on site will be disposed off at the Waste Water Treatment Works by an accredited Waste Contractor

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?		**NO**
If YES, is it controlled by any legislation of any sphere of government?	YES	NO

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.
If NO, describe the emissions in terms of type and concentration:

During the construction phase, dust and vehicular emissions will be released as a result of earthmoving machinery. However these emissions will have a short term impact on the immediate surrounding area and thus no authorisation will be required for such emissions. Appropriate dust suppression measures must be implemented (e.g. removal of vegetation in a phased manner and using recycled water for spraying dust to reduce the impacts).

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?	YES	**NO**

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?	YES	**NO**
If YES, is it controlled by any legislation of any sphere of government?	YES	NO

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.
If NO, describe the noise in terms of type and level:

Noise will be generated by construction vehicles and construction activities. It will however be short term, localised and will last during the construction phase. The noise levels are anticipated to be less during the day lesser during night time as required for suburban districts with little road traffic in terms of SANS 10103 thus no authorisation will be required.

In order to minimise the impacts of noise during the construction phase, construction activities should be restricted to between 07H00 and 17H00 Monday to Friday. This is required in order to avoid noise and lighting disturbances outside of normal working hours. All construction equipment must be maintained and kept in good working order to minimise associated noise impacts. If required, adequate noise suppression measures (i.e. screens, etc) must be erected around the point source of construction and/or operational noise pollution to reduce noise to an acceptable level.

13. Water use

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal	Water board	Groundwater	River, stream, dam or lake	Other	The activity will not use water

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:	litres
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	YES / **NO**

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

The applicant will apply for a Water use Licence from the Department of Water Affairs in areas where water resources are impacted (streams and wetland crossing) before commencement of construction in the affected areas

14. Energy efficiency

Describe the design measures, if any that have been taken to ensure that the activity is energy efficient:

- Electricity - Apart from the use of energy efficient lighting at the substation, no other measures are considered
-Fuel and Oil - Delivery Vehicles and other construction equipment will use petrol, diesel and oil. Use and number of such vehicles and machinery will be restricted to that which is absolutely necessary for the construction activities and deliveries.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Energy efficient lighting will be used where practical

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. 1 (e.g. A): **A – Preferred route, Alternative 1 and Alternative 2**

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? **YES** ☐

*See **Appendices D1** (Geotechnical report), **D2** (Ecological Assessment (Flora, Fauna and Wetland)), **D3** (Heritage report), **D4** (Agricultural Potential), and **D5 (**Social Assessment**), D6** (Visual Assessment) for the specialist studies that were conducted.*

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	Northwest
District Municipality	Bojanala District Municipality
Local Municipality	Rustenburg Local Municipality
Ward Number(s)	Ward 27 and 28 (Lethabong) Ward 30 (Bethanie and Modikwe)
Farm name and number	Waaikraal 396JQ; Portion 1 Waaikraal 396 JQ; Portion 2 Waaikraal 396 JQ; Portion 5 Waaikraal 396 JQ; Portion 6 Waaikraal 396 JQ; Portion 7 Waaikraal 396 JQ; Portion 8 Losperfontein 405 JQ; Portion 2 Hartbeestfontein 228 JQ; Portion 0
Portion number	Please refer above
SG Code	TOJQ00000000039600001 TOJQ00000000039600006 TOJQ00000000040500002 TOJQ00000000022800000

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:	Agricultural land. The route crosses mainly land types with a dominantly low agricultural potential (land types Fa4 and Fb149). Only the extreme south of the study area, close to Bethanie, has high potential soils (land types Ae63 and Ea3).

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? **YES** NO

1. Gradient of the site

Indicate the general gradient of the site.

Alternative S1:

Flat	**1:50 – 1:20**	**1:20 – 1:15**	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

The terrain of the study area is flat to gently undulating, and lies at an altitude of around 1 000 to 1 100 m above sea level, falling gradually to the north-east.

Alternative S2 (if any):

Flat	**1:50 – 1:20**	**1:20 – 1:15**	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S3 (if any):

Flat	**1:50 – 1:20**	**1:20 – 1:15**	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

2. Location in landscape

Indicate the landform(s) that best describes the site:

2.1 Ridgeline		2.4 Closed valley		**2.7 Undulating plain / low hills**	
2.2 Plateau		2.5 Open valley		2.8 Dune	
2.3 Side slope of hill/mountain		2.6 Plain		2.9 Seafront	

3. Groundwater, soil and geological stability of the site

*Further details on the Geotechnical stability of the site are included in **Geotechnical report** attached as **Appendix D1**.*

Is the site(s) located on any of the following?

	Proposed alignment:		Alternative 1 (if any):		Alternative 2 (if any):	
Shallow water table (less than 1.5m deep)	YES		YES		YES	
Dolomite, sinkhole or doline areas		NO		NO		NO
Seasonally wet soils (often close to water bodies)	YES		YES		YES	
Unstable rocky slopes or steep slopes with loose soil	YES		YES		YES	
Dispersive soils (soils that dissolve in water)		NO		NO		NO
Soils with high clay content (clay fraction more than 40%)		NO		NO		NO
Any other unstable soil or geological feature		NO		NO		NO
An area sensitive to erosion	YES		YES		YES	

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. Ground cover

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition[E]	**Natural veld with scattered aliens**[E]	Natural veld with heavy alien infestation[E]	Veld dominated by alien species[E]	Gardens
Sport field	**Cultivated land**	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

*See also Ecological report attached as **Appendix D2**.*

5. Surface water

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	**YES**	NO	UNSURE
Non-Perennial River	**YES**	NO	UNSURE
Permanent Wetland	**YES**	NO	UNSURE
Seasonal Wetland	**YES**	NO	UNSURE
Artificial Wetland		**NO**	UNSURE
Estuarine / Lagoonal wetland	YES	**NO**	UNSURE

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse. *Please note this information is taken from the Wetland Assessment (**Appendix D2**) report undertaken by Ecocare Consultancy in March 2014.*

The important drainage lines to be crossed by the proposed alignment The Krokodil River and its tributaries drain a substantial part of the study area and drains eventually into the Rooikoppies Dam are Katspruit and Longlands. Two perennial rivers that drain into the Rooikoppies Dam will be crossed by the proposed power Lines. A large number of drainage channels are present along the proposed powerline routes. These channels drain water towards the Rooikoppies dam during high rainfall events, but are mostly dry. Two perennial rivers (vegetation unit 1) and various drainage channels (vegetation unit 3) were found along the proposed power line routes. Large granite boulders are found throughout the water course itself, while weirs have been built in the water courses in some localities.

The river and its associated vegetation are subjected to various land use practices ranging from grazing by cattle, to people utilising it for fishing and washing purposes. As a result these areas are in some places degraded while other sections are natural. The alien invasive species poses a large threat to the natural environment and should ideally be eradicated from these sensitive ecosystems. Please refer to **Figure 1** below*:*

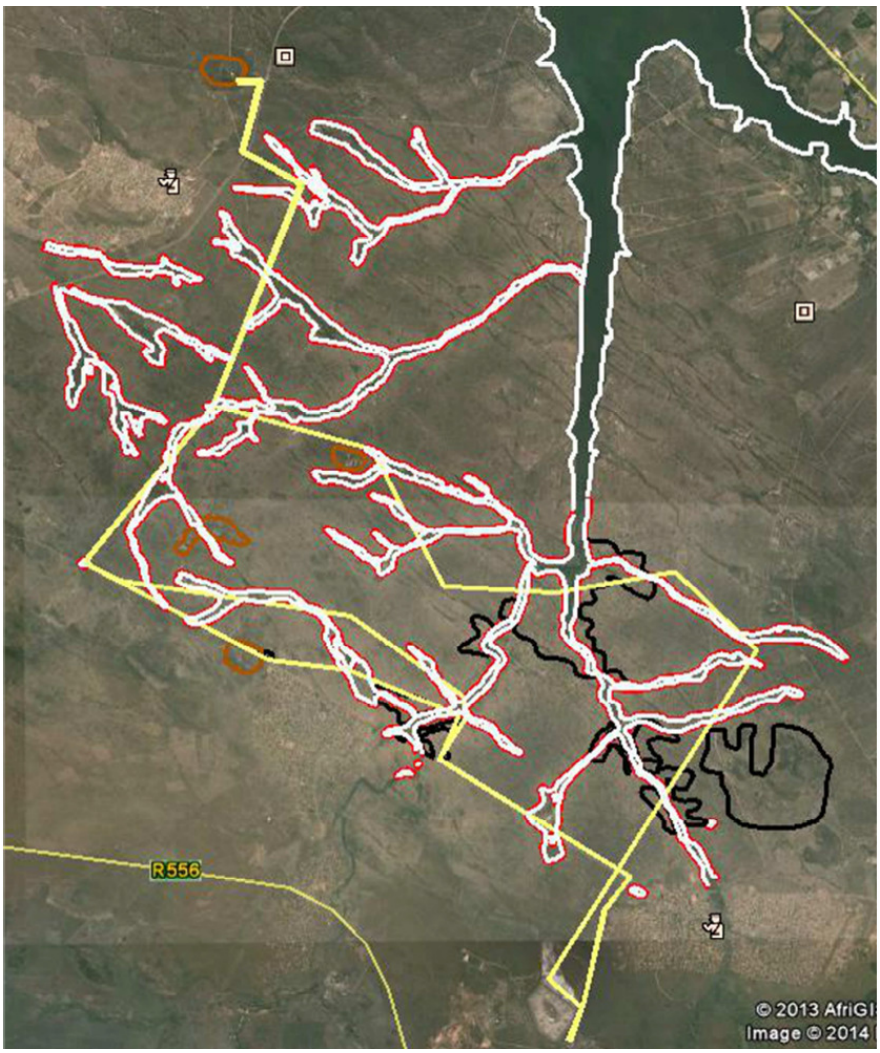


Figure C5: Powerline routes (yellow) in relation to wetlands, dams and drainage lines (white), buffer zones (red) granite hills (brown circles) and rocky outcrops (black lines) in study area.

Figure 1: Wetlands noted in the study area, within the distribution line buffer (Eco Care Consultants:2014) Yellow show route in relation to wetland, dams and drainage lines, white is the 100m buffer zones, red is granite hills, brown circles and rocky outcrops black lines in the study area.

Wetlands and dams: Both wetlands and rivers are of particular importance for birds in the study area, as the area is relatively arid. The study area contains artificially created dams (watering holes) which are important refuges for a variety of water birds, including species such as African Fish Eagle, Black Stork, Yellow billed Stork and Marabou Stork.

Rivers: The Hex and Sterkstroom (tributary of the Crocodile River) are obviously important for birds. The rivers are particularly important for stork species such as Black Stork and Yellow billed Stork and a variety of other water birds. The riparian habitat along the rivers provides refuge for shy and skulking species such as the African Finfoot, and the Whitebacked Night Heron

The eroded macro-channel banks of the Sterkstroom River could provide favourable nesting, foraging and dispersal habitat for the

*See also Wetland Assessment report attached as **Appendix D2**.*

6. Land use character of surrounding area

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station [H]
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential[A]	Church	**Agriculture**
Retail commercial & warehousing	Old age home	**River, stream or wetland**
Light industrial	Sewage treatment plant[A]	Nature conservation area
Medium industrial [AN]	Train station or shunting yard [N]	Mountain, koppie or ridge
Heavy industrial [AN]	Railway line [N]	Museum
Power station		Historical building
Office/consulting room	Airport [N]	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam[A]	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

If any of the boxes marked with an "[N] "are ticked, how will this impact / be impacted upon by the proposed activity?

If any of the boxes marked with an "[An]" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

Some sections of the powerline route are located in close proximity to mining area and transect some of the mining land. The site is adjacent to the mine infrastructure and is considered compatible with the existing industrial character.

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	**YES**	NO
Core area of a protected area?	YES	**NO**
Buffer area of a protected area?	YES	**NO**
Planned expansion area of an existing protected area?	YES	**NO**
Existing offset area associated with a previous Environmental Authorisation?	YES	**NO**
Buffer area of the SKA?	YES	**NO**

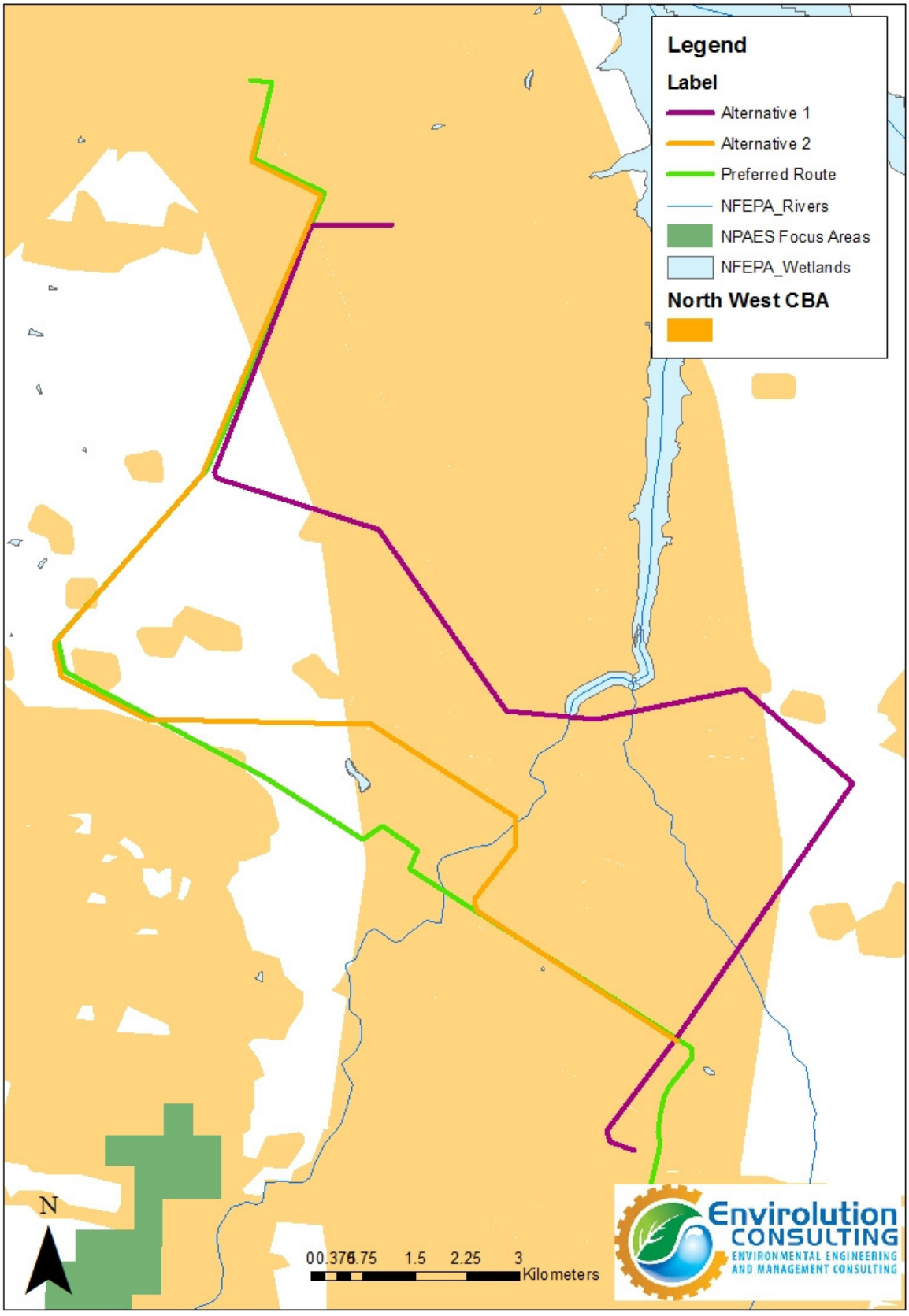


Figure 2: Sensitive areas noted in the study area, within the distribution line buffer (Envirolution Consulting: 2014)

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. Cultural/historical features

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	**NO**
	Uncertain	

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

*A Heritage Impact Assessment (HIA) was undertaken for this proposed development, see **Appendix D3.** The conclusion of the HIA was that are no sites, features or objects of cultural heritage significance that would prevent the development from continuing in the proposed study area*

Will any building or structure older than 60 years be affected in any way?	YES	**NO**
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	**NO**

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. Socio-economic character

Further information on the socio economic characteristics of the area is attached as ***Appendix D5***.

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

The mining sector, followed by the wholesale and trade industries, then community, social and personal services is the main employment sectors within the RLM area. Many of the residents of Barseba, Modikwe, and Bethanie are employed at the Rhovan Mine. According to the 2011 statistics, the unemployment rate (official) within the RLM was 26.40%, with the youth (15-34 years of age) unemployment rate at 34.70%

Economic profile of local municipality:

Mining is a key employment sector within the North West Province (NWP) and the RLM followed by the wholesale and retail sector and the community, social and personal services sector. Various challenges with regards to the mining sector and platinum products, however, highlight the fact that the RLM economy needs to be diversified to steer away from its over-reliance on the mining sector. A strategy has been developed to attend to this issue

Level of education:

With regard to Education, the City of Matlosana in the population group (aged 20 +), 7.90 have received no formal Schooling, whereas 9.00 have received Higher Education with 28.20 % having Matric level

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R11,591,223.01	
What is the expected yearly income that will be generated by or as a result of the activity?	This information will be provided at a later stage	
Will the activity contribute to service infrastructure?	**YES**	NO
Is the activity a public amenity?	YES	**NO**
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Unknown	
What is the expected value of the employment opportunities during the development and construction phase?	Unknown	
What percentage of this will accrue to previously disadvantaged individuals?	Unknown	
How many permanent new employment opportunities will be created during the operational phase of the activity?	Unknown	
What is the expected current value of the employment opportunities during the first 10 years?	Unknown	
What percentage of this will accrue to previously disadvantaged individuals?	Unknown	

9. Biodiversity

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category	If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan

Critical Biodiversity Area (CBA)	**Ecological Support Area (ESA)**	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	*ESA and CBA 1 corridor based on the Listed threatened Ecosystems (endangered Marikana Thornveld) based on the National Biodiversity* Act

Along all three powerline routes a number of individuals of protected species (Forest Act 84 of 1998) occur: They are: Marula (Sclerocarrya birrea, Ironwood (Combretum imberbe) and Shepherd's Tree (Boscia albitrunca). · There are along all three routes other sensitive sites such as stream crossings, dams, rocky outcrops, etc.

Alternative 1 follows a route close to the inlet of the Rooikoppies Dam. This dam attracts large numbers of water fowl as well as the Red Data birds such as the Greater and Lesser Flamingos. So the potential for collisions with conductors is greater on this route (Alternative 1)

These rocky areas are fairly rich in species and more importantly creates micro habitats for species not found anywhere else. They are relatively undisturbed and are considered to have a High conservation value and ecosystem functioning. The powerline route will pass a number of the Granite outcrops and hills (A3.8.) but will not directly affect this vegetation type.

*Mitigation measures to protect the neighbouring sensitive sites are provided in the Flora and Fauna assessment (**Appendix D2)** undertaken during the Basic Assessment.*

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	**55%**	Tree cover is estimated at 2%, shrub cover between 55-65%, grass cover 15% and forb cover 5%. Nearly 60 % of the study site is covered in natural habitat types as opposed to transformed areas Nearly 70 % of the study site (surrounding environment to the south) is covered in natural habitat types as opposed to transformed areas
Near Natural (includes areas with low to moderate level of alien invasive plants)	**15**%	Very low Areas composed of alien and invader are low. The alien invasive species poses a large threat to the natural environment and should ideally be eradicated from these sensitive ecosystems.
Degraded (includes areas heavily invaded by alien plants)	**10%**	Heavily grazed areas erosion of the A-horison has taken place estimated at approximately 5-10%.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	**20**%	Areas composed of alien and invader taxa , bare vegetation and use activities.

The habitat condition of the study area was summarised as follows by the Ecological specialists:

A total of eight different vegetation units were identified in the proposed powerline routes while two (units 5 & 8) do not fall within the proposed routes, but are nearby. The large parts of the study area are still relatively natural.

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and
(ii) whether an aquatic ecosystem is present on site.

<table>
<tr><th colspan="2">Terrestrial Ecosystems</th><th colspan="5">Aquatic Ecosystems</th></tr>
<tr><td rowspan="5">Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)</td><td>Critical</td><td colspan="3" rowspan="2">Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)</td><td colspan="2" rowspan="2">Estuary</td><td colspan="2" rowspan="2">Coastline</td></tr>
<tr><td>Endangered</td></tr>
<tr><td>Vulnerable</td><td colspan="3" rowspan="2"></td><td colspan="2" rowspan="2"></td><td colspan="2" rowspan="2"></td></tr>
<tr><td rowspan="2">Least Threatened</td></tr>
<tr><td>YES</td><td>NO</td><td>UNSURE</td><td>YES</td><td>NO</td><td>YES</td><td>NO</td></tr>
</table>

Along all three powerline routes a number of individuals of protected species (Forest Act 84 of 1998) occur: They are: Marula (Sclerocarrya birrea, Ironwood (Combretum imberbe) and Shepherd's Tree (Boscia albitrunca). There are along all three routes other sensitive sites such as stream crossings, dams, rocky outcrops, etc. Please refer to floral report in ***Appendix D3****).*

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

The large parts of the study area are still relatively natural. However, a number of impacts already exist where the implementation of infrastructure and impacts by local residents are playing a role. Along all three powerline routes a number of individuals of protected species (Forest Act 84 of 1998) occur: They are: Marula (*Sclerocarrya birrea*, Ironwood (*Combretum imberbe*) and Shepherd's Tree (*Boscia albitrunca*)A total of eight different vegetation units were identified in the proposed powerline routes while two (units 5 & 8) do not fall within the proposed routes, but are nearby.

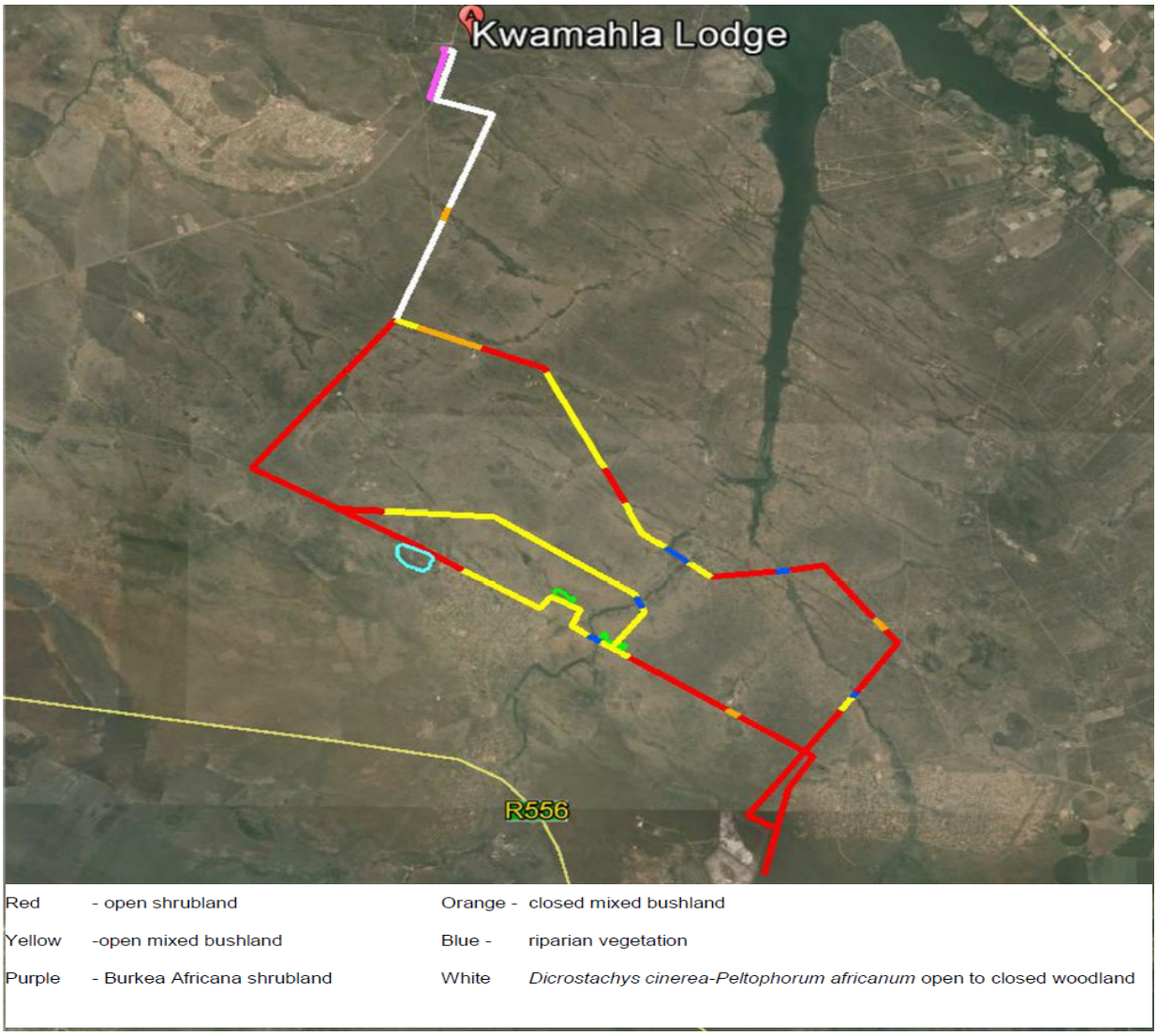


Figure 2. A map illustrating the regional vegetation types traversed by the proposed power line and substation

According to the specialist report, the typical and dominant vegetation type of the study area is the vulnerable Central Sandy Bushveld (SVcb12) as described by Mucina & Rutherford (2006). The landscape is mostly low undulating areas with sandy plains. The vegetation is mostly *Combretum* woodland on shallow rocky soil. Prominent species include the woody *Terminalia sericea, Burkea africana, Combretum apiculatum, Combretum zeyheri, Peltophorum africanum, Grewia flava, Searsia leptodictya*, the grasses *Perotis patens, Eragrostis rigidior, Eragrostis pallens, Panicum maximum, Anthephora pubescens* and the forbs *Waltheria indica, Hermannia lancifolia, Kyphocarpa angustifolia, Indigofera daleaoides and Agathesanthemum boje*ri.

To the extreme south of the study area is a small portion of the endangered Marikana Thornveld (SVcb6)(Mucina & Rutherford, 2006) on clayey soils. Only a few areas of this vegetation type are formally conserved and it is therefore regarded as having a “vulnerable” status.

Section B Copy No. 2 (e.g. A): **B – Proposed Rhombus substation and Alternative Substation**

4. Paragraphs 1 - 6 below must be completed for each alternative.

5. Has a specialist been consulted to assist with the completion of this section? **YES**

*See **Appendices D1** (Geotechnical report), **D2** (Ecological Assessment (Flora, Fauna and Wetland)), **D3** (Heritage report), **D4** (Agricultural Potential), and **D5 (**Social Assessment**), D6** (Visual Assessment) for the specialist studies that were conducted*

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	Northwest
District Municipality	Bojanala District Municipality
Local Municipality	Rustenburg Local Municipality
Ward Number(s)	Ward 27 and28 (Lethabong) Ward 30 (Bethanie and Modikwe)
Farm name and number	Losperfontein 405 JQ; Portion 2
Portion number	Please refer above
SG Code	B0JQ00000000040500000

Current land-use zoning as per local municipality IDP/records:

Agricultural, Mining and Residential land. The route crosses mainly land types with a dominantly low agricultural potential (land types Fa4 and Fb149). Only the extreme south of the study area, close to Bethanie, has high potential soils (land types Ae63 and Ea3). Please also refer to **Appendix D4** (Agricultural Potential) for further details.

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? **YES** NO

10. Gradient of the site

Indicate the general gradient of the site.

Alternative S1: Proposed Rhombus substation

Flat	**1:50 – 1:20**	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

The site consists of very gently undulating topography, sloping to the south with a slope angle of less than 2%

Alternative S2 (if any): Substation Alternative

Flat	**1:50 – 1:20**	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

11. Location in landscape

Indicate the landform(s) that best describes the site:

2.1 Ridgeline		2.4 Closed valley		**2.7 Undulating plain / low hills**	
2.2 Plateau		2.5 Open valley		2.8 Dune	
2.3 Side slope of hill/mountain		2.6 Plain		2.9 Seafront	

12. Groundwater, soil and geological stability of the site

*Further details on the Geotechnical stability of the site are included in **Geotechnical report** attached as **Appendix D1**.*

Is the site(s) located on any of the following?

	Proposed Substation :		**Substation Alternative**		**Alternative 2 (if any):**	
Shallow water table (less than 1.5m deep)	**YES**		**YES**		YES	NO
Dolomite, sinkhole or doline areas	YES	**NO**	YES	**NO**	YES	NO
Seasonally wet soils (often close to water bodies)	**YES**		**YES**		YES	NO
Unstable rocky slopes or steep slopes with loose soil	**YES**		**YES**		**YES**	**NO**
Dispersive soils (soils that dissolve in water)	YES	**NO**	YES	**NO**	YES	NO
Soils with high clay content (clay fraction more than 40%)		**NO**		**NO**	**YES**	NO
Any other unstable soil or geological feature	YES	**NO**		**NO**	**YES**	**NO**
An area sensitive to erosion	**YES**		**YES**		YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

13. Ground cover

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition[E]	Natural veld with scattered aliens[E]	Natural veld with heavy alien infestation[E]	Veld dominated by alien species[E]	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

*See also Ecological Assessment report **(Appendix D2).**The sensitive map (**Appendix A**) compiled by the Ecological specialists was reviewed to identified site of low ecological value in the vicinity.*

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

14. Surface water

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		**NO**	UNSURE
Non-Perennial River	YES	**NO**	UNSURE
Permanent Wetland	YES	**NO**	UNSURE
Seasonal Wetland	YES	**NO**	UNSURE
Artificial Wetland		**NO**	UNSURE
Estuarine / Lagoonal wetland	YES	**NO**	UNSURE

No wetlands and drainage channels were noted to be located in the proximity of the substations.

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

No wetlands or drainage channels were identified within the boundaries of the proposed substations sites. Please also refer to **the Ecological report (Appendix D2)** of these reports for the wetlands and hydrological features in the study area.

15. Land use character of surrounding area

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station [H]
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential[A]	Church	Agriculture – Cattle farming and grazing land
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant[A]	Nature conservation area
Medium industrial [AN]	Train station or shunting yard [N]	Mountain, koppie or ridge
Heavy industrial [AN]	Railway line [N]	Museum
Power station	Major road (4 lanes or more) [N]	Historical building
Office/consulting room	Airport [N]	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam[A]	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

If any of the boxes marked with an "[N] "are ticked, how will this impact / be impacted upon by the proposed activity?

If any of the boxes marked with an "[An]" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

No mining activities will be affected by the proposed development and the mine may in future benefit in terms of electricity supply.

If any of the boxes marked with an "[H]" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	**YES**	NO
Core area of a protected area?	YES	**NO**
Buffer area of a protected area?	YES	**NO**
Planned expansion area of an existing protected area?	YES	**NO**
Existing offset area associated with a previous Environmental Authorisation?	YES	**NO**
Buffer area of the SKA?	YES	**NO**

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

16. Cultural/historical features

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	**NO**
	Uncertain	

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

*A Heritage Impact Assessment (HIA) was undertaken for this proposed development, see **Appendix D3.** The conclusion of the HIA was that are no sites, features or objects of cultural heritage significance that would prevent the development from continuing in the proposed study area*

Will any building or structure older than 60 years be affected in any way?	YES	**NO**
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	**NO**

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

17. Socio-economic character

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

The mining sector, followed by the wholesale and trade industries, then community, social and personal services is the main employment sectors within the RLM area. Many of the residents of Barseba, Modikwe, and Bethanie are employed at the Rhovan Mine. According to the 2011 statistics, the unemployment rate (official) within the RLM was 26.40%, with the youth (15-34 years of age) unemployment rate at 34.70%

Economic profile of local municipality:

Mining is a key employment sector within the North West Province (NWP) and the RLM followed by the wholesale and retail sector and the community, social and personal services sector. Various challenges with regards to the mining sector and platinum products, however, highlight the fact that the RLM economy needs to be diversified to steer away from its over-reliance on the mining sector. A strategy has been developed to attend to this issue

Level of education:

With regard to Education, the City of Matlosana in the population group (aged 20 +), 7.90 have

received no formal Schooling, whereas 9.00 have received Higher Education with 28.20 % having Matric level

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R	
What is the expected yearly income that will be generated by or as a result of the activity?	R	
Will the activity contribute to service infrastructure?	**YES**	NO
Is the activity a public amenity?	YES	**NO**
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Unknown	
What is the expected value of the employment opportunities during the development and construction phase?	R	
What percentage of this will accrue to previously disadvantaged individuals?	%	
How many permanent new employment opportunities will be created during the operational phase of the activity?		
What is the expected current value of the employment opportunities during the first 10 years?	R	
What percentage of this will accrue to previously disadvantaged individuals?	%	

18. Biodiversity

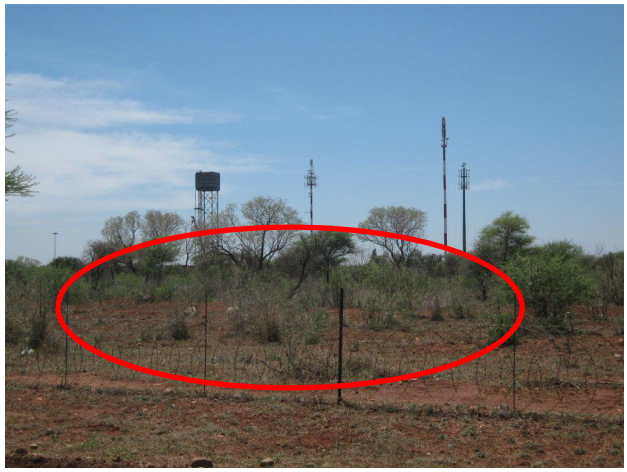
Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				**If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan**
Critical Biodiversity Area (CBA)	**Ecological Support Area (ESA)**	Other Natural Area (ONA	No Natural Area Remaining (NNR	ESA and CBA 1 corridor based on the Listed threatened Ecosystems (endangered Marikana Thornveld) based on the National Biodiversity Act

*According to the Ecological opinion (**Appendix D7**), substation Alternative 1 is located in an ESA and CBA 1 corridor based on the least threatened Ecosystems (endangered Marikana Thornveld) based on the National Biodiversity Act*

The proposed substation will be located on the vacant land on the left of the Rhovan Mine entrance gate



Substation Alternative will be located to the south of Bethanie village

*Mitigation measures to reduce construction related impacts are provided in the Ecological assessment (**Appendix D2**) undertaken during the Basic Assessment.*

b) Indicate and describe the habitat condition on site (Proposed substation site)

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	**2%**	The proposed substation site is a vacant land (bare of vegetation) that is used as a parking area for visitors. Only few shrubs are noted in the site boundaries
Degraded (includes areas heavily invaded by alien plants)	**97%**	Nearly 97% of the study site is transformed areas

The habitat condition of the study area was summarised as follows by the Ecological specialists:

Indicate and describe the habitat condition on site (Proposed substation Alternative)

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	**90%**	The proposed substation alternative site is a vacant land (bare of vegetation) that is used as a parking area for visitors. Only few shrubs are noted in the site boundaries
Degraded (includes areas	**10%**	Reservoirs, telecommunication masts, are located in the eastern boundaries of the site. The proposed substation

heavily invaded by alien plants)		alternative site include the Marikana Thornveld and other trees and few shrubs are noted in the site boundaries

It is apparent from the above table and the proposed and preferred substation site can be considered most suitable as the site is already transformed and located in close proximity to the mining area that is heavily transformed.

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and
(ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		**Aquatic Ecosystems**						
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline	
	Endangered							
	Vulnerable							
	Least Threatened		**NO**	UNSURE	YES	**NO**	YES	**NO**

The proposed and preferred substation is located in a vacant land that has been completely cleared of the vegetation whereas Substation Alternative is located in an ESA and CBA 1 corridor based on the Listed threatened Ecosystems (endangered Marikana Thornveld) as per the National Biodiversity Act(Act No 10 of 2004). The proposed and preferred substation site next to the Rhovan Mine entrance gate is regarded suitable for the location of the substation with the application of mitigation measures to protect the nearby natural vegetation.

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

The **Ecological** report identifies the area to the extreme south of the study area (where the proposed substations are located) as a small portion of the endangered Marikana Thornveld (SVcb6)(Mucina & Rutherford, 2006) on clayey soils. Only a few areas of this vegetation type are formally conserved and it is therefore regarded as having a "vulnerable" status.

SECTION C: PUBLIC PARTICIPATION

1. Advertisement and notice

Publication name	Rustenburg Herald/Britspos	
Date published	24 January 2014	
Site notice position	**Latitude**	**Longitude**
Date placed	16 January 2014	

Include proof of the placement of the relevant advertisements and notices in **Appendix E1**.

2. Determination of appropriate measures

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.543:

Title, Name and Surname	**Affiliation/ key stakeholder status**	**Contact details (tel number or e-mail address)**
Mr Steven Mukhola	Northwest Department of Agriculture, Conservation and Rural Development (NWDACERD)	**Tel: 018 299 6696/ 018 389 5751**
Ms Kelebogile Mekgoe	Rustenburg Local Municipality	**Tel :** 014 590 3433 **Email:** kmekgoe@rustenburg.gov.za

Include proof that the key stakeholder received written notification of the proposed activities as **Appendix E2.** This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. Issues raised by interested and affected parties

Summary of main issues raised by I&APs	**Summary of response from EAP**
NONE	NONE

No issues of significant concern have been raised by the Interested and Affected Parties (including landowners) consulted during the Notification period. It is expected that more comments will be submitted during the public review of the draft BAR.

4. Comments and response report

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as **Appendix E3.**

5. Authority participation)

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
(NWDACERD)	Mr Steven Mukhola	018 389 5666	018 294 6008	smukhola@nwpg.gov.za	Private Bag X15, Mmabatho
Rustenburg Local Municipality	Ms Kelebogile Mekgoe	014 590 3433	014 590 3070	kmekgoe@rustenburg.gov.za	Private Bag X5017, Rustenburg
South African Heritage Resource Agency	Mr Phillip Hine Heritage Officer	021 462 4502	021 462 4509	phine@sahra.org.za	111 Harrington Street Cape Town 8001

Include proof that the Authorities and Organs of State received written notification of the activities as **Appendix E4**.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. Consultation with other stakeholders

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as **Appendix E5.**

Copies of any correspondence and minutes of any meetings held must be included in **Appendix E6.**

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. **Impacts that may result from the Planning and Design, Construction, Operational, Decommissioning and Closure Phases as well As Proposed Management of Identified Impacts and Proposed Mitigation Measures**

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

- Impact Assessment and Rating Methodology
  (The impact assessment methodology is attached as **Appendix F.)** The significance of impacts will be rated from Low, Medium to High where:
  - **Low:** Little influence on the receiving environment
  - **Medium**: Will have an influence on the receiving environment unless mitigated
  - **High:** Will have an influence on the receiving environment regardless of mitigation

Impact Assessment Tables for the project are attached as Appendix F.

Direct impacts: (Construction phase)

*Various specialist assessment (**Appendix D**) has been undertaken to identify potential stability issues that may emanate from this development. The impacts are assessed and presented as follows:*

Preferred Powerline Alignment (Green route) - *Please also refer to the draft EMPr, Specialist assessment and Eskom's minimum standards for vegetation management and erosion control reports for details on other applicable mitigation measures*				
Potential impacts:	**Description**	**Significance rating of impacts: (without mitigation)**	**Proposed mitigation: Construction and operation phase**	**Significance rating of impacts after mitigation:**
1.Impacts on vegetation	This route is proposed to transverse number of individuals of protected species (Forest Act 84 of 1998) including: *Marula (Sclerocarrya birrea, Ironwood (Combretum imberb*e) and Shepherd's Tree (*Boscia albitrunca*).	**Medium**	1. A walk down of the route must be undertaken by a plant ecologist/or botanist before the most suitable route is finally surveyed for construction purposes in order to mark and GPS those individuals of the protected tree species 2. All protected tree species that will be impacted by the construction activity must be identified and marked prior to the construction phase 3. Contractor with the assistance of the environmental officer must identify and label trees that must not be removed during the construction of the access roads 4. Clearing of vegetation should be minimal where the power line traverses through savannoid grasslands 5. Rehabilitation / restoration of indigenous vegetative cover during and after construction; 6. Management of point discharges during construction activities to avoid unnecessary soil erosion; 7. Implement alien plant control	**Low**

			activities; 8. Implementation of best management practices regarding stormwater and earthworks; 9. Provision of adequate sanitation facilities located outside of the wetland/riparian area or its associated buffer zone during construction activities; 10. Implementation of appropriate stormwater management around the excavation to prevent the ingress of run-off into the excavation; and particularly; and 11. Prevention of erosion, and where necessary rehabilitation of eroded areas.	
2. Impacts on wetlands and other water bodies (A large number of drainage channels are present along the proposed powerline routes. These channels drain water towards the Rooikoppies dam during high rainfall events, but are mostly dry)	The Proposed Route intersects one wetland and riparian areas. • Two perennial rivers that drain into the Rooikoppies Dam will be crossed by the proposed power lines. • A few small natural and artificial wetlands were found to be present in the proposed route. Several two small artificial dams and one pan were found close to the proposed power line routes	**High**	1. The applicable Water Use licences must be applied for once the relevant activity has been approved by DEA 2. Control of activities directly impacting on wetland resources e.g. Few construction workers and construction machinery must be allowed in the wetland area to limit the impacts 3. Construction of access roads on the wetland need to be planned carefully to minimise the impacts. 4. Construction in the wetland area must be undertaken in the presence of the independent Environmental Control officer 5. Cement mixing will need to take place on a hard surface or cement mixing trays (mortar boards) will need to be used for this purpose. Cement mixing will not be permitted to occur where	**Moderate**

			run-off can enter stormwater drains or water bodies. 6. No vehicle washing must occur on site unless in a designated wash bay which must then be constructed. Wash bays must be installed with sand and grease traps. 7. A 30m buffer from the wetland is recommended and must be implemented where practical and possible. 8. Management of on-site water use must be strictly implemented	
3.Impacts on fauna	The study area contains artificially created dams (watering holes) which are important refuges for a variety of waterbirds, including species such as African Fish Eagle, Black Stork, Yellowbilled Stork and Marabou Stork The study area contains an important mountain range, namely the Magaliesberg and hillslopes to the south and the Waterberg to the north. The most important feature of this habitat (for this study) is the occurrence of important vulture colonies in this habitat	**Moderate**	1. Realign the proposed section of the powerline (where there is a potential for foraging habitat for bird and mammal species), to an area south of these inundated area 2. No killing of fauna will be allowed on site 3. Where the line crosses wetland/river/drainage line, the actual crossover span as well as one span on either side of the wetland/river/drainage line should be marked with appropriate bird deterrent devices 4. The extent of the construction sites and access roads should be demarcated on site layout plans and should be restricted to disturbed areas or those identified with low conservation importance. 5. Areas not impacted by the associated infrastructure, as well as those	**Low**

			considered to have a high biological diversity, should be maintained in their present states; 6. Maintenance activities should be limited to daylight hours and vehicles should remain on the designated roads at all times; and 7. The subsidiary road network should be maintained as gravel tracks that allow for fauna dispersal.	
4. Increased soil erosion:	- Loss of fertile topsoil will occur due to the initial vegetation clearing (for some access roads to tower site); and construction earthworks may cause increased soil erosion as well as stormwater runoff.	**Medium**	Construction phase: 1. It is recommended that care should be taken when constructing a substation and a power line as this might result in soil erosion If at all possible, construction activities should preferably take place during the dry winter months. 2. Contractors must limit vegetation clearing to the workable corridor/site along the substation and powerline and the tower sites only. The contractor must stabilise cleared areas to prevent and control erosion and/or sedimentation. Only vegetation that needs to be removed to accommodate the powerline infrastructure must be removed. 3. Dust suppression is necessary for stockpiles older than a month. 4. Stockpiles in excavated areas should not be higher than 2 m to avoid compaction and visual impacts. 5. To prevent erosion of materials stockpiled for a long period of time, the material must be retained in a bermed area.	**Low**

			6. Grading of the site is required after construction to ensure free flow of runoff and to prevent ponding of water 7. The topsoil must be stockpiled separately and used for rehabilitating around the substation and tower site. Operational phase: 1. Plant cover must be maintained and unnecessary trafficking be avoided at all cost.	
5. Noise impacts	Vehicles transporting materials to and from the site will potentially cause an additional noise burden to adjacent residents (±1km from the site) as well as along internal access roads.	**Medium**	**1.** Construction activities to be limited to office hours on weekdays as far as possible**.** **2.** The contractor must ensure that noise levels remain within acceptable limits	**Low**
6.Impacts on ground water: Groundwater contamination due to construction activities.	Hydrocarbon leakages from plant vehicles and poor management of sources of hydrocarbon leakages has a potential to pollute underground and surrounding resources	**Medium**	1. Construction vehicles are to be maintained in good working order, to reduce the probability of leakage of fuels and lubricants. 2. All cement mixing must occur on impervious surfaces and within controlled bermed areas. 3. Oil residue must be treated with oil absorbent such as Drizit or similar and this material removed to a licensed waste disposal site. 4. Contractor/s must provide regularly serviced portable chemical toilets for construction workers at a distance no more than 200 m from the place of construction. 5. No materials may be discharged from the construction camps.	**Low**
7.Impacts on stormwater:	The accumulation of uncontrolled stormwater.	**Medium**	1. No stockpiles or construction materials may be stored or placed within any drainage line that may be in close proximity of storm water drains. 2. No stockpiles or construction materials may be stored or placed in close proximity to storm	**Low**

			water drains. 3. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required.	
8.Impact on dust and air quality: The influx of pollutants will occur due to the establishment of the construction camp and the movement of people and vehicles on site. Excavated and stockpiled material that is vulnerable to wind has the potential to contribute to the influx of pollutants in the air.	Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access roads	**Medium to Low**	1. Continuous watering of the site should be carried out to prevent dust pollution during windy and dry conditions. 2. A continuous dust monitoring process needs to be undertaken during construction. 3. Speed restriction of 20km/h must be implemented for all construction vehicles. 4. All vehicles transporting friable materials such a sand, rubble etc must be covered by a tarpaulin or wet down. 5. Construction work to be undertaken during weekdays as far as practical.	**Low**
9.Impact on visual and aesthetic quality:	Stockpiled materials; workforce; and construction sites may add to the existing visual impacts *from mining activities* in the area.	**Low**	1. Ensure that no litter, refuse, waste, rubbish, rubble, debris and builders wastes generated on the premises be placed, dumped or deposited on adjacent or surrounding properties including road verges, roads or public places and open spaces during or after the construction period. All waste/litter/rubbish etc must be disposed of at an approved dumping site as approved by the Council. 2. No wastes may remain on the construction site for more than two weeks. 3. Supply sufficient garbage bins throughout the site and empty regularly. 4. Ensure good housekeeping is implemented at all times. 5. Keep the property neat and litter free at all times and maintain the landscaped areas. 6. Indigenous vegetation should be used to create habitats that attract the natural fauna in the area as far as possible 7. The Construction camp must be contained to	**Low**

			prevent any visual intrusion and be kept in a clean and orderly state at all times. 8. When vertical structures or surfaces are lit such as building facades or signs, direct the light downwards.	
9.Impact on socio-economics:	Influx of workers in the area may raise concerns from neighbouring residents	**Medium - positive**	1. All adjacent landowners must be informed of the construction processes prior to commencement of construction activities. 2. Adjacent land owners must be informed timeously of any service stoppages in their areas. 3. Notification must include possible timeframes for stoppages. 4. Consequences of such stoppages must be clearly indicated to all surrounding/affected land owners. 5. Affected land owners must be timeously informed of any/all maintenance of the bulk water services supply which may result in service stoppages to their properties. Again this must include possible timeframes so alternatives can be provided.	**Low - positive**
10.Impacts on traffic and local roads :	1. Traffic will be congested as a result of construction activities. 2. Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent land owners. Trucks may potentially distribute dust along internal access roads.	**Medium**	**Construction phase:** 1. Vehicular movement beyond the property boundaries may not occur during peak hour traffic times (07h30 – 08h30 and 16h00 – 17h00). 2. It must be ensured that a backlog of traffic does not develop at the access points during peak hours through the upgrade to the road system and the implementation of an efficient and effective access control system. 3. Speed restriction of 20km/h must be implemented for all construction vehicles. 4. Implement dust suppression measures (wetting or application of soil binding compound)	**Low**

			in all areas that will be affected by construction activities and where dust will be generated **Operational phase:** 1. Roads should be adequately maintained. 2. Adequate signage should be provided and adhered to.	
11. Health and Safety impacts	Impacts/injuries to humans entering the site unnoticed	**Medium**	1. The construction site and tower excavations must be fenced off and demarcated using danger tape to ensure that no animals or residents enter the area. 2. Safety clothes and equipment must be worn at all times. 3. No fires are allowed at or around the construction site. The contractor must provide gas fired stoves and heaters to the workers	**Low**
12.Impact on socio-economics: Economic and employment status will be impacted on due to access and road construction and building	Local residents are likely to get some of the unskilled labour employment opportunities	**Medium +**	**There are no mitigation measures as the impact is positive.** 1. The construction phase will provide direct temporary employment for locals, and indirect employment through demand for construction materials, and support services, as well as empowerment and skills transfer opportunities. 2. During operation, there will be job opportunities and continued potential for skills transfer.	**Low +**
13.Impact on infrastructure services:	The status of the infrastructure services may be impacted on through the establishment/upgrading of the site and the construction of access roads where required.	**Low**	**There are no mitigation measures as the impact is positive.** 1. The status of the infrastructure services in the surrounding area will be improved through the establishment of the site and the upgrade of roads in the area.	**Low**

			2. Inspect the site for burst, blocked or leaking water pipe 3. During the operational phase, the sewage system must be inspected for leakages on regular basis and any leakages must be attended to immediately.	
14.Impacts on unknown and existing cultural and heritage resources	Exposure of unknown heritage features beneath the earth surface	**Medium**	1. The construction team should be made aware of this. Should any archaeological material or human remains be accidentally unearthed during the course of construction 2. Construction personnel must be alert and inform local Council should they come across any features of heritage value and must cease construction activities immediately 3. No heritage feature can be removed, destroyed and/or interfered with on site without the permission of an accredited archaeologist	**Low**
Operational phase impacts: *Impacts during the operational phase are expected to occur during the maintenance of the powerline. The following impacts are anticipated:*				
Potential impacts:	**Description of Impact**	**Significance rating of impacts:**	**Proposed mitigation: Construction and operation phase**	**Significance rating of impacts after mitigation:**
1. Clearance of vegetation	- **Maintenance of servitude**	**Low**	- Plants that are not interfering with the operation of the powerline during the maintenance must not be disturbed.	**Low**
2. Noise and dust pollution	- Noise and dust may occur during maintenance of the powerline	**Low**	- Existing access roads need to be used all the time - Limit maintenance hours to daytime and weekday	**Low**

			- Ensure that noise levels are in accordance with SANS 10103 for residential areas by implementing a monitoring programme	
3. Soil erosion	Storm water runoff may cause soil erosion from the tower foundations	**Medium**	- Regularly inspect all storm water channels - Provide soil conservation measures in areas of susceptible erosion around the tower foundations	**Low**
4. Disruption to local residents	Power cuts during maintenance may disrupt local people	**Medium**	- Inform residents if planned power cuts at least 15 -30 days before implementing	**Low**
	Preferred Powerline Alternative 1 (Purple route) - *Please also refer to the draft EMPr, Specialist assessment and Eskom's minimum standards for vegetation management and erosion control reports for details on other applicable mitigation measures*			
Potential impacts:	**Description**	**Significance rating of impacts: (without mitigation)**	**Proposed mitigation: Construction and operation phase**	**Significance rating of impacts after mitigation:**
4.Impacts on vegetation	This route is also proposed to transverse number of individuals of protected species (Forest Act 84 of 1998) occur: They are: Marula (*Sclerocarrya birrea*, *Ironwood (Combretum imberbe*) and Shepherd's Tree (*Boscia albitrunca*).	**Medium**	1. Walk down of the route must be undertaken by a plant ecologist or botanist before the most suitable route is finally surveyed for construction purposes. 2. This is to mark and GPS those individuals of the protected tree species [*Marula (Sclerocarrya birrea*, Ironwood (*Combretum imberbe*) and Shepherd's Tree (*Boscia albitrunca*)] that will be damaged by the	**Low**

			construction of the powerline. This is important for permit purposes as well as to damage or cut the least number of these protected trees 3. All Red/Orange tree species that will be impacted by the construction activity must be identified and marked prior to the construction phase 4. Contractor with the assistance of the environmental officer must identify and label trees that must not be removed during the construction of the access roads 5. Clearing of vegetation should be minimal where the power line traverses through savannoid grasslands 6. Rehabilitation / restoration of indigenous vegetative cover during and after construction; 7. Management of point discharges during construction activities to avoid unnecessary soil erosion; 8. Implement alien plant control activities; 9. Implementation of best management practices regarding stormwater and earthworks; 10. Provision of adequate sanitation facilities located outside of the wetland/riparian area or its associated buffer zone during construction activities; 11. Implementation of appropriate stormwater management around the excavation to prevent the ingress of run-off into the excavation; and particularly; and	

			12. Prevention of erosion, and where necessary rehabilitation of eroded areas.	
5.Impacts on wetlands and other water bodies	The Proposed Route intersects one wetland and riparian areas. Construction of towers on the wetland could potentially affect the wetland soil and vegetation through the compaction of the wetland soils, the trampling, smothering of wetland vegetation and the resultant exposure of wetland soils which would result in desiccation and erosion.	**High**	9. The applicable Water Use licences must be applied for once the relevant activity has been approved by DEA 10. Control of activities directly impacting on wetland resources e.g. Few construction workers and construction machinery must be allowed in the wetland area to limit the impacts 11. Construction of access roads on the wetland need to be planned carefully to minimise the impacts. 12. Construction in the wetland area must be undertaken in the presence of the independent Environmental Control officer 13. Cement mixing will need to take place on a hard surface or cement mixing trays (mortar boards) will need to be used for this purpose. Cement mixing will not be permitted to occur where run-off can enter stormwater drains or water bodies. 14. No vehicle washing must occur on site unless in a designated wash bay which must then be constructed. Wash bays must be installed with sand and grease traps. 15. A 30m buffer from the wetland is recommended and must be implemented where practical and possible. 16. Management of on-site water use must be strictly implemented	**Moderate**

6.Impacts on fauna	It is possible that species such as the Secretary bird (*Sagittarius serpentarius*), storks of the genera Ciconia and the Northern Black Korhaan (*Afrotis afraoides*) could potentially collide with the earth wires of the proposed alignment **Alternative 1** follows a route close to the Rooikoppies Dam. This dam attracts large numbers of water fowl as well as the Red Data birds such as the Greater and Lesser Flamingos. The study area contains artificially created dams (watering holes) which are important refuges for a variety of waterbirds, including species such as African Fish Eagle, Black Stork, Yellowbilled Stork and Marabou Stork The study area contains an important mountain range, namely the Magaliesberg and hillslopes to the south and the Waterberg to the north. The most important feature of this habitat (for this study) is the occurrence of important vulture colonies in this habitat.	**Moderate**	8. Realign the proposed section of the powerline (where there is a potential for foraging habitat for bird and mammal species), to an area south of these inundated area 9. No killing of fauna will be allowed on site 10. Where the line crosses wetland/river/drainage line, the actual crossover span as well as one span on either side of the wetland/river/drainage line should be marked with appropriate bird deterrent devices 11. Activities around the proposed servitude must be strictly managed in order to minimise potential impacts on resident bird species 12. Where the line crosses primary savannoid grassland and extensive grassland next to floodplains, the line should be marked with appropriate bird deterrent device. 13. The extent of the construction sites and access roads should be demarcated on site layout plans and should be restricted to disturbed areas or those identified with low conservation importance. 14. Areas not impacted by the associated infrastructure, as well as those considered to have a high biological diversity, should be maintained in their present states; 15. Maintenance activities should be	**Low**

			limited to daylight hours and vehicles should remain on the designated roads at all times; and 16. The subsidiary road network should be maintained as gravel tracks that allow for fauna dispersal.	
4. Increased soil erosion:	- Loss of fertile topsoil will occur due to the initial vegetation clearing (for some access roads to tower site); and construction earthworks may cause increased soil erosion as well as stormwater runoff.	**Medium**	Construction phase: 1. It is recommended that care should be taken when constructing a substation and a power line as this might result in soil erosion If at all possible, construction activities should preferably take place during the dry winter months. 2. Contractors must limit vegetation clearing to the workable corridor/site along the substation and powerline and the tower sites only. The contractor must stabilise cleared areas to prevent and control erosion and/or sedimentation. Only vegetation that needs to be removed to accommodate the powerline infrastructure must be removed. 3. Dust suppression is necessary for stockpiles older than a month. 4. Stockpiles in excavated areas should not be higher than 2 m to avoid compaction and visual impacts. 5. To prevent erosion of materials stockpiled for a long period of time, the material must be retained in a bermed area. 6. Grading of the site is required after construction to ensure free flow of runoff and to prevent ponding of water 7. The topsoil must be stockpiled separately and	**Low**

			used for rehabilitating around the substation and tower site. Operational phase: 2. Plant cover must be maintained and unnecessary trafficking be avoided at all cost.	
5. Noise impacts	Vehicles transporting materials to and from the site will potentially cause an additional noise burden to adjacent residents in the Modikwe and Bethanie villages	**Medium**	**1.** Construction activities to be limited to office hours on weekdays as far as possible**.** **2.** The contractor must ensure that noise levels remain within acceptable limits	**Low**
6.Impacts on ground water: Groundwater contamination due to construction activities.	Hydrocarbon leakages from plant vehicles and poor management of sources of hydrocarbon leakages has a potential to pollute underground and surrounding resources	**Medium**	1. Construction vehicles are to be maintained in good working order, to reduce the probability of leakage of fuels and lubricants. 2. All cement mixing must occur on impervious surfaces and within controlled bermed areas. 3. Oil residue must be treated with oil absorbent such as Drizit or similar and this material removed to a licensed waste disposal site. 4. Contractor/s must provide regularly serviced portable chemical toilets for construction workers at a distance no more than 200 m from the place of construction. 5. No materials may be discharged from the construction camps.	**Low**
7.Impacts on stormwater:	The accumulation of uncontrolled stormwater.	**Medium**	1. No stockpiles or construction materials may be stored or placed within any drainage line that may be in close proximity of storm water drains. 2. No stockpiles or construction materials may be stored or placed in close proximity to storm water drains. 3. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required.	**Low**

8.Impact on dust and air quality: The influx of pollutants will occur due to the establishment of the construction camp and the movement of people and vehicles on site. Excavated and stockpiled material that is vulnerable to wind has the potential to contribute to the influx of pollutants in the air.	Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access roads	**Medium to Low**	1. Continuous watering of the site should be carried out to prevent dust pollution during windy and dry conditions. 2. A continuous dust monitoring process needs to be undertaken during construction. 3. Speed restriction of 20km/h must be implemented for all construction vehicles. 4. All vehicles transporting friable materials such a sand, rubble etc must be covered by a tarpaulin or wet down. 5. Construction work to be undertaken during weekdays as far as practical.	**Low**
9.Impact on visual and aesthetic quality:	Stockpiled materials; workforce; and construction sites may add to the existing visual impacts *from mining activities* in the area.	**Low**	1. Ensure that no litter, refuse, waste, rubbish, rubble, debris and builders wastes generated on the premises be placed, dumped or deposited on adjacent or surrounding properties including road verges, roads or public places and open spaces during or after the construction period. All waste/litter/rubbish etc must be disposed of at an approved dumping site as approved by the Council. 2. No wastes may remain on the construction site for more than two weeks. 3. Supply sufficient garbage bins throughout the site and empty regularly. 4. Ensure good housekeeping is implemented at all times. 5. Keep the property neat and litter free at all times and maintain the landscaped areas. 6. Indigenous vegetation should be used to create habitats that attract the natural fauna in the area as far as possible 7. The Construction camp must be contained to prevent any visual intrusion and be kept in a clean and orderly state at all times. 8. When vertical structures or surfaces are lit such as building facades or signs, direct the light	**Low**

			downwards.	
9.Impact on socio-economics:	Influx of workers in the area may raise concerns from neighbouring residents	**Medium - positive**	1. All adjacent landowners must be informed of the construction processes prior to commencement of construction activities. 2. Adjacent land owners must be informed timeously of any service stoppages in their areas. 3. Notification must include possible timeframes for stoppages. 4. Consequences of such stoppages must be clearly indicated to all surrounding/affected land owners. 5. Affected land owners must be timeously informed of any/all maintenance of the bulk water services supply which may result in service stoppages to their properties. Again this must include possible timeframes so alternatives can be provided.	**Low - positive**
10.Impacts on traffic and local roads :	1. Traffic will be congested as a result of construction activities. 2. Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent land owners. Trucks may potentially distribute dust along internal access roads.	**Medium**	**Construction phase:** 1. Vehicular movement beyond the property boundaries may not occur during peak hour traffic times (07h30 – 08h30 and 16h00 – 17h00). 2. It must be ensured that a backlog of traffic does not develop at the access points during peak hours through the upgrade to the road system and the implementation of an efficient and effective access control system. 3. Speed restriction of 20km/h must be implemented for all construction vehicles. 4. Implement dust suppression measures (wetting or application of soil binding compound) in all areas that will be affected by construction activities and where dust will be generated	**Low**

			Operational phase: 1. Roads should be adequately maintained. 2. Adequate signage should be provided and adhered to.	
11. Health and Safety impacts	Impacts/injuries to humans entering the site unnoticed	**Medium**	1. The construction site and tower excavations must be fenced off and demarcated using danger tape to ensure that no animals or residents enter the area. 2. Safety clothes and equipment must be worn at all times. 3. No fires are allowed at or around the construction site. The contractor must provide gas fired stoves and heaters to the workers	**Low**
12.Impact on socio-economics: Economic and employment status will be impacted on due to access and road construction and building	Local residents are likely to get some of the unskilled labour employment opportunities	**Medium +**	**There are no mitigation measures as the impact is positive.** 1. The construction phase will provide direct temporary employment for locals, and indirect employment through demand for construction materials, and support services, as well as empowerment and skills transfer opportunities. 2. During operation, there will be job opportunities and continued potential for skills transfer.	**Low +**
13.Impact on infrastructure services:	The status of the infrastructure services may be impacted on through the establishment/upgrading of the site and the construction of access roads where required.	**Low**	**There are no mitigation measures as the impact is positive.** 1. The status of the infrastructure services in the surrounding area will be improved through the establishment of the site and the upgrade of roads in the area. 2. Inspect the site for burst, blocked or leaking water pipe 3. During the operational phase, the sewage system must be inspected for leakages on regular basis and any leakages must be	**Low**

			attended to immediately.	
14.Impacts on unknown and existing cultural and heritage resources	Exposure of unknown heritage features beneath the earth surface	**Medium**	1. The construction team should be made aware of this. Should any archaeological material or human remains be accidentally unearthed during the course of construction 2. Construction personnel must be alert and inform local Council should they come across any features of heritage value and must cease construction activities immediately 3. No heritage feature can be removed, destroyed and/or interfered with on site without the permission of an accredited archaeologist	**Low**
Operational phase impacts: *Impacts during the operational phase are expected to occur during the maintenance of the powerline. The following impacts are anticipated:*				
Potential impacts:	**Description of Impact**	**Significance rating of impacts:**	**Proposed mitigation: Construction and operation phase**	**Significance rating of impacts after mitigation:**
1. Clearance of vegetation	- **Maintenance of servitude**	**Low**	- Plants that are not interfering with the operation of the powerline during the maintenance must not be disturbed.	**Low**
2. Noise and dust pollution	- Noise and dust may occur during maintenance of the powerline	**Low**	- Existing access roads need to be used all the time - Limit maintenance hours to daytime and weekday - Ensure that noise levels are in	**Low**

			accordance with SANS 10103 for residential areas by implementing a monitoring programme	
3. Soil erosion	Storm water runoff may cause soil erosion from the tower foundations	**Medium**	- Regularly inspect all storm water channels - Provide soil conservation measures in areas of susceptible erosion around the tower foundations	**Low**
4. Disruption to local residents	Power cuts during maintenance may disrupt local people	**Medium**	- Inform residents if planned power cuts at least 15 -30 days before implementing	**Low**
Alternative 2 Alignment (Orange route) - *Please also refer to the draft EMPr, Specialist assessment and Eskom's minimum standards for vegetation management and erosion control reports for details on other applicable mitigation measures*				
Potential impacts:	**Description**	**Significance rating of impacts: (without mitigation)**	**Proposed mitigation: Construction and operation phase**	**Significance rating of impacts after mitigation:**
1. Impacts on vegetation	Along all three powerline routes a number of individuals of protected species (Forest Act 84 of 1998) occur: They are: Marula (*Sclerocarrya birrea, Ironwood (Combretum* imberbe) and Shepherd's Tree (*Boscia albitrunca*).	**Medium**	1. The "walk-through" of the alignment should preferably coincide with the calendar month of January when the majority of the Red/Orange listed plant species likely to occur is flowering. 2. All Red/Orange tree species that will be impacted by the construction activity must be identified and marked prior to the construction phase 3. Contractor with the assistance of the environmental officer must identify and label trees that must not be removed during the construction of the access roads 4. Clearing of vegetation should be minimal where the power line	**Low**

			traverses through savannoid grasslands 5. Rehabilitation / restoration of indigenous vegetative cover during and after construction; 6. Management of point discharges during construction activities to avoid unnecessary soil erosion; 7. Implement alien plant control activities; 8. Implementation of best management practices regarding stormwater and earthworks; 9. Provision of adequate sanitation facilities located outside of the wetland/riparian area or its associated buffer zone during construction activities; 10. Implementation of appropriate stormwater management around the excavation to prevent the ingress of run-off into the excavation; and particularly; and 11. Prevention of erosion, and where necessary rehabilitation of eroded areas.	
2. Impacts on wetlands and other water bodies	The Proposed Route intersects one wetland and riparian areas. Construction of towers on the wetland could potentially affect the wetland soil and vegetation through the compaction of the wetland soils, the trampling, smothering of wetland vegetation and the resultant exposure of wetland soils which would result in desiccation and erosion.	**High**	17. The applicable Water Use licences must be applied for once the relevant activity has been approved by DEA 18. Control of activities directly impacting on wetland resources e.g. Few construction workers and construction machinery must be allowed in the wetland area to limit the impacts 19. Construction of access roads on the wetland need to be planned carefully to minimise the impacts.	**Moderate**

			20. Construction in the wetland area must be undertaken in the presence of the independent Environmental Control officer 21. Cement mixing will need to take place on a hard surface or cement mixing trays (mortar boards) will need to be used for this purpose. Cement mixing will not be permitted to occur where run-off can enter stormwater drains or water bodies. 22. No vehicle washing must occur on site unless in a designated wash bay which must then be constructed. Wash bays must be installed with sand and grease traps. 23. A 30m buffer from the wetland is recommended and must be implemented where practical and possible. 24. Management of on-site water use must be strictly implemented	
3. Impacts on fauna	Part of the proposed alignment spans two areas (e.g. boreholes) that are frequently inundated with surface water. These areas could be important foraging habitat for bird and mammal species. It is possible that species such as the Secretary bird (*Sagittarius serpentarius*), storks of the genera Ciconia and the Northern Black Korhaan (*Afrotis afraoides*) could potentially collide with the earth wires of the proposed alignment	**Moderate**	1. Realign the proposed section of the powerline (where there is a potential for foraging habitat for bird and mammal species), to an area south of these inundated area 2. No killing of fauna will be allowed on site 3. Where the line crosses wetland/river/drainage line, the actual crossover span as well as one span on either side of the wetland/river/drainage line should be marked with appropriate bird deterrent devices	**Low**

			4. Where the line crosses primary savannoid grassland and extensive grassland next to floodplains, the line should be marked with appropriate bird deterrent device. 5. The extent of the construction sites and access roads should be demarcated on site layout plans and should be restricted to disturbed areas or those identified with low conservation importance. 6. Areas not impacted by the associated infrastructure, as well as those considered to have a high biological diversity, should be maintained in their present states; 7. Maintenance activities should be limited to daylight hours and vehicles should remain on the designated roads at all times; and 8. The subsidiary road network should be maintained as gravel tracks that allow for fauna dispersal.	
4. Increased soil erosion:	- Loss of fertile topsoil will occur due to the initial vegetation clearing (for some access roads to tower site); and construction earthworks may cause increased soil erosion as well as stormwater runoff.	**Medium**	Construction phase: 1. It is recommended that care should be taken when constructing a substation and a power line as this might result in soil erosion If at all possible, construction activities should preferably take place during the dry winter months. 2. Contractors must limit vegetation clearing to the workable corridor/site along the substation and powerline and the tower sites only. The contractor must stabilise cleared areas to	**Low**

			prevent and control erosion and/or sedimentation. Only vegetation that needs to be removed to accommodate the powerline infrastructure must be removed. 3. Dust suppression is necessary for stockpiles older than a month. 4. Stockpiles in excavated areas should not be higher than 2 m to avoid compaction and visual impacts. 5. To prevent erosion of materials stockpiled for a long period of time, the material must be retained in a bermed area. 6. Grading of the site is required after construction to ensure free flow of runoff and to prevent ponding of water 7. The topsoil must be stockpiled separately and used for rehabilitating around the substation and tower site. Operational phase: 4. Plant cover must be maintained and unnecessary trafficking be avoided at all cost.	
5. Noise impacts	Vehicles transporting materials to and from the site will potentially cause an additional noise burden to adjacent residents (±1km from the site) as well as along internal access roads.	**Medium**	**1.** Construction activities to be limited to office hours on weekdays as far as possible**.** **2.** The contractor must ensure that noise levels remain within acceptable limits	**Low**
6.Impacts on ground water: Groundwater contamination due to construction activities.	Hydrocarbon leakages from plant vehicles and poor management of sources of hydrocarbon leakages has a potential to pollute underground and surrounding resources	**Medium**	1. Construction vehicles are to be maintained in good working order, to reduce the probability of leakage of fuels and lubricants. 2. All cement mixing must occur on impervious surfaces and within controlled bermed areas. 3. Oil residue must be treated with oil absorbent such as Drizit or similar and this material	**Low**

			removed to a licensed waste disposal site. 4. Contractor/s must provide regularly serviced portable chemical toilets for construction workers at a distance no more than 200 m from the place of construction. 5. No materials may be discharged from the construction camps.	
7.Impacts on stormwater:	The accumulation of uncontrolled stormwater.	**Medium**	1. No stockpiles or construction materials may be stored or placed within any drainage line that may be in close proximity of storm water drains. 2. No stockpiles or construction materials may be stored or placed in close proximity to storm water drains. 3. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required.	**Low**
8.Impact on dust and air quality: The influx of pollutants will occur due to the establishment of the construction camp and the movement of people and vehicles on site. Excavated and stockpiled material that is vulnerable to wind has the potential to contribute to the influx of pollutants in the air.	Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access roads	**Medium to Low**	1. Continuous watering of the site should be carried out to prevent dust pollution during windy and dry conditions. 2. A continuous dust monitoring process needs to be undertaken during construction. 3. Speed restriction of 20km/h must be implemented for all construction vehicles. 4. All vehicles transporting friable materials such a sand, rubble etc must be covered by a tarpaulin or wet down. 5. Construction work to be undertaken during weekdays as far as practical.	**Low**
9.Impact on visual and aesthetic quality:	Stockpiled materials; workforce; and construction sites may add to the existing visual impacts *from mining activities* in the area.	**Low**	1. Ensure that no litter, refuse, waste, rubbish, rubble, debris and builders wastes generated on the premises be placed, dumped or deposited on adjacent or surrounding properties including road verges, roads or public places and open spaces during or after the construction period. All waste/litter/rubbish etc must be disposed of at an approved dumping site as approved by the	**Low**

			Council. 2. No wastes may remain on the construction site for more than two weeks. 3. Supply sufficient garbage bins throughout the site and empty regularly. 4. Ensure good housekeeping is implemented at all times. 5. Keep the property neat and litter free at all times and maintain the landscaped areas. 6. Indigenous vegetation should be used to create habitats that attract the natural fauna in the area as far as possible 7. The Construction camp must be contained to prevent any visual intrusion and be kept in a clean and orderly state at all times. 8. When vertical structures or surfaces are lit such as building facades or signs, direct the light downwards.	
9.Impact on socio-economics:	Influx of workers in the area may raise concerns from neighbouring residents	**Medium - positive**	1. All adjacent landowners must be informed of the construction processes prior to commencement of construction activities. 2. Adjacent land owners must be informed timeously of any service stoppages in their areas. 3. Notification must include possible timeframes for stoppages. 4. Consequences of such stoppages must be clearly indicated to all surrounding/affected land owners. 5. Affected land owners must be timeously informed of any/all maintenance of the bulk water services supply which may result in service stoppages to their properties. Again this must include possible timeframes so alternatives can be provided.	**Low - positive**
10.Impacts on traffic and local roads :	1. Traffic will be congested as a result of construction activities. 2. Construction machinery and heavy	**Medium**	**Construction phase:** 1. Vehicular movement beyond the property	**Low**

	vehicles are likely to generate dust which is likely to be perceptible by adjacent land owners. Trucks may potentially distribute dust along internal access roads.		boundaries may not occur during peak hour traffic times (07h30 – 08h30 and 16h00 – 17h00). 2. It must be ensured that a backlog of traffic does not develop at the access points during peak hours through the upgrade to the road system and the implementation of an efficient and effective access control system. 3. Speed restriction of 20km/h must be implemented for all construction vehicles. 4. Implement dust suppression measures (wetting or application of soil binding compound) in all areas that will be affected by construction activities and where dust will be generated **Operational phase:** 1. Roads should be adequately maintained. 2. Adequate signage should be provided and adhered to.	
11. Health and Safety impacts	Impacts/injuries to humans entering the site unnoticed	**Medium**	1. The construction site and tower excavations must be fenced off and demarcated using danger tape to ensure that no animals or residents enter the area. 2. Safety clothes and equipment must be worn at all times. 3. No fires are allowed at or around the construction site. The contractor must provide gas fired stoves and heaters to the workers	**Low**
12.Impact on socio-economics: Economic and employment status will be impacted on due to access and road construction and building	Local residents are likely to get some of the unskilled labour employment opportunities	**Medium +**	**There are no mitigation measures as the impact is positive.** 1. The construction phase will provide direct temporary employment for locals, and indirect employment through demand for construction	**Low +**

			materials, and support services, as well as empowerment and skills transfer opportunities. 2. During operation, there will be job opportunities and continued potential for skills transfer.	
13.Impact on infrastructure services:	The status of the mine infrastructure services located in close proximity to the substation site may be impacted on through the establishment of the substation	**Low**	1. Mine representatives should be involved with finalisation of the detailed alignments and tower positioning to ensure the least impact on mining activities 2. Where the proposed power line would be in close proximity to mining activities, it should be clearly marked with e.g. reflective equipment 3. Cable heights and low points should be indicated by clearance warning signs. Clearance heights should thus be measured 4. Vehicle movements in close proximity to power lines should be undertaken on dedicated route travelling plans 5. Different equipment and vehicles should adhere to their specific clearances from power lines. This should be stipulated in the mining safety plans. 6. Mining safety plans with regards to power lines should be strictly implemented.	**Low**
14.Impacts on unknown and existing cultural and heritage resources	Exposure of unknown heritage features beneath the earth surface	**Medium**	1. The construction team should be made aware of this. Should any archaeological material or human remains be accidentally unearthed during the course of construction 2. Construction personnel must be alert and inform local Council should they come across any features of heritage	**Low**

			value and must cease construction activities immediately 3. No heritage feature can be removed, destroyed and/or interfered with on site without the permission of an accredited archaeologist	
Operational phase impacts: *Impacts during the operational phase are expected to occur during the maintenance of the powerline. The following impacts are anticipated:*				
Potential impacts:	**Description of Impact**	**Significance rating of impacts:**	**Proposed mitigation: Construction and operation phase**	**Significance rating of impacts after mitigation:**
1. Clearance of vegetation	- **Maintenance of servitude**	**Low**	- Plants that are not interfering with the operation of the powerline during the maintenance must not be disturbed.	**Low**
2. Noise and dust pollution	- Noise and dust may occur during maintenance of the powerline	**Low**	- Existing access roads need to be used all the time - Limit maintenance hours to daytime and weekday - Ensure that noise levels are in accordance with SANS 10103 for residential areas by implementing a monitoring programme	**Low**
3. Soil erosion	Storm water runoff may cause soil erosion from the tower foundations	**Medium**	- Regularly inspect all storm water channels - Provide soil conservation measures in areas of susceptible erosion around the tower foundations	**Low**
4. Disruption to local residents	Power cuts during maintenance may disrupt local people	**Medium**	- Inform residents if planned power cuts at least 15 -30 days before implementing	**Low**

Proposed Rhombus substation - (Preferred Alternative) *Please also refer to the draft EMPr, Specialist assessment and Eskom's minimum standards for vegetation management and erosion control reports for details on other applicable mitigation measures*				
Potential impacts:	**Description**	**Significance rating of impacts: (without mitigation)**	**Proposed mitigation: Construction and operation phase**	**Significance rating of impacts after mitigation:**
1.Impacts on flora	There is no anticipated impact on vegetation within the site as the surrounding the proposed site occur in a vacant land and is located in close proximity to the industrial area that is completely transformed	**Low**	1. If any floral of species of concern are observed on site, Eskom Environmental Manager must be contacted immediately The construction of "new" access roads should be limited, and existing roads should be used during the construction phase	**Low**
2.Impacts on fauna	No anticipated direct impacts on fauna (reptiles) species are expected to occur within the site. Potential reptile species located in neighbouring environment may be impacted if the activities e	**Low**	1. No killing of fauna will be allowed on site 2. Areas where a high risk of avifaunal collision is predicted, bird flight diverters are to be applied to the earth wires 3.	**Low**
3. Increased soil erosion:	Loss of fertile topsoil will occur due to the initial vegetation clearing (for access roads purposes if required) only; and construction earthworks may cause increased soil erosion as well as stormwater runoff.	**Medium**	Construction phase: 1. If at all possible, construction activities should preferably take place during the dry winter months. 2. Stockpiles (if applicable) must be covered in excess during windy conditions. 3. Clearance of vegetation for access road should be minimized and delayed to minimized exposed areas that might be prone to erosion during heavy rains 4. Dust suppression is necessary for stockpiles older than a month. 5. Stockpiles should not be higher than 2 m to avoid compaction and visual impacts. 6. To prevent erosion of materials stockpiled for a long period of	**Low**

			time, the material must be retained in a bermed area. 7. The energy / velocity of storm water runoff should be dissipated using metre drains at appropriate intervals. 8. Grading of the site is required after construction to ensure free flow of runoff and to prevent ponding of water 9. The topsoil must be stockpiled separately and used for rehabilitating around the substation site. Should topsoil remain, the locals should be encouraged to take the soil and place it on their vegetable patches. Operational phase: 5. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required. 6. Litter blocking storm water systems must be removed. 7. Plant cover must be maintained and unnecessary trafficking be avoided at all cost.	
4. Noise impacts	Vehicles transporting materials to and from the site will potentially cause an additional noise burden to adjacent residents as well as along internal access roads. Mining activities already noisy	**Medium**	**1.** Construction activities to be limited to office hours on weekdays as far as possible**.** **2.** The contractor must ensure that noise levels remain within acceptable limits	**Low**
5.Impacts on ground water: Groundwater contamination due to construction activities.	Hydrocarbon leakages from plant vehicles and poor management of sources of hydrocarbon leakages has a potential to pollute underground water resources	**Medium**	1. Construction vehicles are to be maintained in good working order, to reduce the probability of leakage of fuels and lubricants. 2. All cement mixing must occur on impervious surfaces and within controlled bermed areas. 3. Oil residue must be treated with oil absorbent such as Drizit or similar and this material removed to a licensed waste disposal site. 4. Contractor/s must provide regularly serviced portable chemical toilets for construction workers at a distance no more than 200 m from the place of construction. 5. No materials may be discharged from the construction camps. 6	**Low**

6.Impacts on stormwater: The accumulation of stormwater.		**Medium**	1. No stockpiles or construction materials may be stored or placed within any drainage line that may be in close proximity of storm water drains. 2. No stockpiles or construction materials may be stored or placed in close proximity to storm water drains. 3. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required	**Low**
7.Impact on dust and air quality: The influx of pollutants will occur due to the establishment of the construction camp and the movement of people and vehicles on site. Excavated and stockpiled material that is vulnerable to wind has the potential to contribute to the influx of pollutants in the air.	Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access Roads.	**Medium**	1. Continuous watering of the site should be carried out to prevent dust pollution during windy and dry conditions. 2. A continuous dust monitoring process needs to be undertaken during construction. 3. Speed restriction of 20km/h must be implemented for all construction vehicles. 4. All vehicles transporting friable materials such a sand, rubble etc must be covered by a tarpaulin or wet down. 5. Construction work to be undertaken during weekdays as far as practical.	**Low**
8.Impact on visual and aesthetic quality:	Stockpiled materials; workforce; and construction sites may cause visual impacts in the area.	**Medium**	1. Ensure that no litter, refuse, waste, rubbish, rubble, debris and builders wastes generated on the premises be placed, dumped or deposited on adjacent or surrounding properties including road verges, roads or public places and open spaces during or after the construction period. All waste/litter/rubbish etc must be disposed of at an approved dumping site as approved by the Council. 2. No wastes may remain on the construction site for more than two weeks. 3. Supply sufficient garbage bins throughout the site and empty regularly. 4. Ensure good housekeeping is implemented at all times. 5. Keep the property neat and litter free at all times and maintain the landscaped areas. 6. Indigenous vegetation should be used to create habitats that attract the natural fauna in the area as far as possible 7. The Construction camp must be contained to prevent any visual intrusion and be kept in a clean and orderly state at all times.	**Low**

			8. When vertical structures or surfaces are lit such as building facades or signs, direct the light downwards. 9. Landscaping should be maintained.	
9.Impact on socio-economics: Impact on nearby residential areas.	**Influx of workers in the area may raise concerns from neighbouring residents**	**Medium - positive**	1. All adjacent landowners must be informed of the construction processes prior to commencement of construction activities. 2. Adjacent land owners must be informed timeously of any service stoppages in their areas. 3. Notification must include possible timeframes for stoppages. 4. Consequences of such stoppages must be clearly indicated to all surrounding/affected land owners. 5. Affected land owners must be timeously informed of any/all maintenance of the bulk water services supply which may result in service stoppages to their properties. Again this must include possible timeframes so alternatives can be provided.	**Low - positive**
10.Impacts on traffic and local roads :	1. Traffic will be congested as a result of construction activities. 2. Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access roads.	**Medium**	**Construction phase:** 1. Vehicular movement beyond the property boundaries may not occur during peak hour traffic times (07h30 – 08h30 and 16h00 – 17h00). 2. It must be ensured that a backlog of traffic does not develop at the access points during peak hours through the upgrade to the road system and the implementation of an efficient and effective access control system. 3. Speed restriction of 20km/h must be implemented for all construction vehicles. Implement dust suppression measures (wetting or application of soil binding compound) in all areas that will be affected by construction activities and where dust will be generated **Operational phase:** 1. Roads should be adequately maintained. 2. Adequate signage should be provided and adhered to.	**Low**
11. Health and Safety impacts	Impacts/injuries to humans entering the site unnoticed	**Medium**	1. The construction site must be fenced off and demarcated using danger tape to ensure that no animals or residents enter the area.	**Low**

			2. Safety clothes and equipment must be worn at all times. 3. No fires are allowed at or around the construction site. The contractor must provide gas fired stoves and heaters to the workers	
12.Impact on socio-economics: Economic and employment status will be impacted on due to access and road construction, building construction, paving construction and landscaping.	Local residents are likely to get some of the unskilled labour employment opportunities	**Medium +**	**There are no mitigation measures as the impact is positive.** 1. The construction phase will provide direct temporary employment for locals, and indirect employment through demand for construction materials, and support services, as well as empowerment and skills transfer opportunities. 2. During operation, there will be job opportunities and continued potential for skills transfer.	**Low +**
13.Impact on infrastructure services:	The status of the infrastructure services may be impacted on through the establishment of the site and the construction of roads.	**Low**	**There are no mitigation measures as the impact is positive.** 1. The status of the infrastructure services in the surrounding area will be improved through the establishment of the site and the upgrade of roads in the area. 2. Inspect the site for burst, blocked or leaking water pipe 3. During the operational phase, the sewage system must be inspected for leakages on regular basis and any leakages must be attended to immediately.	**Low**
14.Impacts on unknown cultural and heritage resources	Exposure of unknown heritage features beneath the earth surface	**Medium**	1. Should any archaeological material or human remains be accidentally unearthed during the course of construction, the construction team should be informed 2. Construction personnel must be alert and inform local Council should they come across any features of heritage value and must cease construction activities immediately 3. No heritage feature can be removed, destroyed and/or interfered with on site without the permission of an accredited archaeologist	**Low**

Operational phase impacts: *Impacts during the operational phase are expected to occur during the installation of substation infrastructure (future transformers, lines, feeders, storeroom, and fencing) and during maintenance and repairs of the Substation. The following impacts are anticipated:*

Potential impacts:	Description of Impact	Significance rating of impacts:	Proposed mitigation: Construction and operation phase	Significance rating of impacts after mitigation:
1. Noise and dust pollution	- **Noise and dust may occur during maintenance of the substation** - **noise levels may emanate from transformers and cooling fans**	**Medium to Low**	- Dust suppression and wet spraying should be implemented - Limit maintenance hours to daytime and weekday - Ensure that noise levels are in accordance with SANS 10103 for residential areas by implementing a monitoring programme	**Low**
2. Soil erosion	**Storm water runoff may cause soil erosion outside the boundaries of the substation**	**Medium**	- Regularly inspect all storm water channels - Provide soil conservation measures in areas of susceptible erosion around the substation	**Low**
3. Disruption to local residents	**Power cuts during maintenance may disrupt local people**	**Medium**	- Inform residents if planned power cuts at least 15 -30 days before implementing	**Low**
4. Light pollution	**Potential lighting pollution serving as a nuisance to neighbouring residents.**	**Medium**	- Install lighting in such a manner as to provide - security but which does not constitute 'light - pollution' to the surrounding areas.	**Low**
5. Visual character	**The industrial character and scale of the power line and substation will contrast with the peri-urban, residential character of the landscape**	**Medium**	- Screen planting for a substation is in most cases the most affective but safety precautions are required. - design phase powerline infrastructure and substation to reduce visual impacts	**Low**

Decommissioning phase - *The closure phase for the substation is anticipated to be within 30 - 40 years from development of the facility. Should the facility be decommissioned it is anticipated that the structures will be dismantled and removed and a rehabilitation plan (removal of all hydrocarbons, substation components and provision of recycling plans) approved by the relevant authorities will be implemented.*

Indirect impacts:

- The construction of the access road will result in the direct impact of minimal vegetation clearing when widening the roads.
- Loss of topsoil due to earthworks and foundation establishment for the substation.
- Noise from construction vehicles and equipments and the labourers

Cumulative impacts:
Visual Cumulative impacts will emanate from the substation itself as there are existing distribution powerlines already transecting the area

Proposed Rhombus substation – Alternative) - *Please also refer to the draft EMPr, Specialist assessment and Eskom's minimum standards for vegetation management and erosion control reports for details on other applicable mitigation measures*

Potential impacts:	Description	Significance rating of impacts: (without mitigation)	Proposed mitigation: Construction and operation phase	Significance rating of impacts after mitigation:
1.Impacts on flora	Alternative substation site is located within a CBA 1/ ESA Corridor based on threatened Ecosystem as per NEMBA, 2004 Construction impacts on the endangered flora(Marikana Thornveld) are expected during site clearing	**Moderate**	Contractor with the assistance of the environmental officer must identify and label trees that must not be removed during the construction of the access roads	**Low**
2. Impacts on fauna	There is no anticipated impact on Red or Orange Data species within and around the site	**Low**	No killing of fauna will be allowed on site	**Low**
3. Increased soil erosion:	Loss of fertile topsoil will occur due to the initial vegetation clearing (for access roads purposes if required) only; and construction earthworks may cause increased soil erosion	**Medium**	Construction phase: 1. If at all possible, construction activities should preferably take place during the dry winter months. 2. Stockpiles (if applicable) must be covered in excess during	**Low**

	as well as stormwater runoff.		windy conditions. 3. Clearance of vegetation for access road should be minimized and delayed to minimized exposed areas that might be prone to erosion during heavy rains 4. Dust suppression is necessary for stockpiles older than a month. 5. Stockpiles should not be higher than 2 m to avoid compaction and visual impacts. 6. To prevent erosion of materials stockpiled for a long period of time, the material must be retained in a bermed area. 7. The energy / velocity of storm water runoff should be dissipated using metre drains at appropriate intervals. 8. Grading of the site is required after construction to ensure free flow of runoff and to prevent ponding of water 9. The topsoil must be stockpiled separately and used for rehabilitating around the substation site. Should topsoil remain, the locals should be encouraged to take the soil and place it on their vegetable patches. Operational phase: 4. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required. 5. Litter blocking storm water systems must be removed. 6. Plant cover must be maintained and unnecessary trafficking be avoided at all cost.	
4. Noise impacts	Vehicles transporting materials to and from the site will potentially cause an additional noise burden to adjacent residents (Bethanie) as well as along internal access roads.	**Medium**	**1.** Construction activities to be limited to office hours on weekdays as far as possible**.** **2.** The contractor must ensure that noise levels remain within acceptable limits	**Low**
5.Impacts on ground water: Groundwater contamination due to construction activities.	Hydrocarbon leakages from plant vehicles and poor management of sources of hydrocarbon leakages has a potential to pollute underground water resources	**Medium**	1. Construction vehicles are to be maintained in good working order, to reduce the probability of leakage of fuels and lubricants. 2. All cement mixing must occur on impervious surfaces and within controlled bermed areas.	**Low**

			3. Oil residue must be treated with oil absorbent such as Drizit or similar and this material removed to a licensed waste disposal site. 4. Contractor/s must provide regularly serviced portable chemical toilets for construction workers at a distance no more than 200 m from the place of construction. 5. No materials may be discharged from the construction camps. 6	
6.Impacts on stormwater: The accumulation of stormwater.		**Medium**	1. No stockpiles or construction materials may be stored or placed within any drainage line that may be in close proximity of storm water drains. 2. No stockpiles or construction materials may be stored or placed in close proximity to storm water drains. 3. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required	**Low**
7.Impact on dust and air quality: The influx of pollutants will occur due to the establishment of the construction camp and the movement of people and vehicles on site. Excavated and stockpiled material that is vulnerable to wind has the potential to contribute to the influx of pollutants in the air.	Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access Roads.	**Medium to Low**	1. Continuous watering of the site should be carried out to prevent dust pollution during windy and dry conditions. 2. A continuous dust monitoring process needs to be undertaken during construction. 3. Speed restriction of 20km/h must be implemented for all construction vehicles. 4. All vehicles transporting friable materials such a sand, rubble etc must be covered by a tarpaulin or wet down. 5. Construction work to be undertaken during weekdays as far as practical.	**Low**
8.Impact on visual and aesthetic quality:	Stockpiled materials; workforce; and construction sites may cause visual impacts in the area.	**Medium**	1. Ensure that no litter, refuse, waste, rubbish, rubble, debris and builders wastes generated on the premises be placed, dumped or deposited on adjacent or surrounding properties including road verges, roads or public places and open spaces during or after the construction period. All waste/litter/rubbish etc must be disposed of at an approved dumping site as approved by the Council. 2. No wastes may remain on the construction site for more than two weeks. 3. Supply sufficient garbage bins throughout the site and empty regularly.	**Low**

			4. Ensure good housekeeping is implemented at all times. 5. Keep the property neat and litter free at all times and maintain the landscaped areas. 6. Indigenous vegetation should be used to create habitats that attract the natural fauna in the area as far as possible 7. The Construction camp must be contained to prevent any visual intrusion and be kept in a clean and orderly state at all times. 8. When vertical structures or surfaces are lit such as building facades or signs, direct the light downwards. 9. Landscaping should be maintained.	
9.Impact on socio-economics: Impact on nearby residential areas.	**Influx of workers in the area may raise concerns from neighbouring residents**	**Medium - positive**	1. All adjacent landowners must be informed of the construction processes prior to commencement of construction activities. 2. Adjacent land owners must be informed timeously of any service stoppages in their areas. 3. Notification must include possible timeframes for stoppages. 4. Consequences of such stoppages must be clearly indicated to all surrounding/affected land owners. 5. Affected land owners must be timeously informed of any/all maintenance of the bulk water services supply which may result in service stoppages to their properties. Again this must include possible timeframes so alternatives can be provided.	**Low - positive**
10.Impacts on traffic and local roads :	1. Traffic will be congested as a result of construction activities. 2. Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access roads.	**Medium**	**Construction phase:** 1. Vehicular movement beyond the property boundaries may not occur during peak hour traffic times (07h30 – 08h30 and 16h00 – 17h00). 2. It must be ensured that a backlog of traffic does not develop at the access points during peak hours through the upgrade to the road system and the implementation of an efficient and effective access control system. 3. Speed restriction of 20km/h must be implemented for all construction vehicles. Implement dust suppression measures (wetting or application of soil binding compound) in all areas that will be affected by construction	**Low**

			activities and where dust will be generated **Operational phase:** 1. Roads should be adequately maintained. 2. Adequate signage should be provided and adhered to.	
11. Health and Safety impacts	Impacts/injuries to humans entering the site unnoticed	**Medium**	1. The construction site must be fenced off and demarcated using danger tape to ensure that no animals or residents enter the area. 2. Safety clothes and equipment must be worn at all times. 3. No fires are allowed at or around the construction site. The contractor must provide gas fired stoves and heaters to the workers	**Low**
12.Impact on socio-economics: Economic and employment status will be impacted on due to access and road construction, building construction, paving construction and landscaping.	Local residents are likely to get some of the unskilled labour employment opportunities	**Medium +**	**There are no mitigation measures as the impact is positive.** 1. The construction phase will provide direct temporary employment for locals, and indirect employment through demand for construction materials, and support services, as well as empowerment and skills transfer opportunities. 2. During operation, there will be job opportunities and continued potential for skills transfer.	**Low +**
13.Impact on infrastructure services:	The status of the infrastructure services(water pipeliene, telecomunication cables, gates, etc) may be impacted on through the establishment of the site and the construction of roads.	**Low**	**There are no mitigation measures as the impact is positive.** 1. The status of the infrastructure services in the surrounding area will be improved through the establishment of the site and the upgrade of roads in the area. 2. Insect the site for burst, blocked or leaking water pipe 3. During the operational phase, the sewage system must be inspected for leakages on regular basis and any leakages must be attended to immediately.	**Low**
14.Impacts on unknown cultural and heritage resources	Exposure of unknown heritage features beneath the earth surface	**Medium**	1. The construction team should be made aware of this. Should any archaeological material or human remains be accidentally unearthed during the course of construction 2.Construction personnel must be alert and inform local	**Low**

			Council should they come across any features of heritage value and must cease construction activities immediately 3.No heritage feature can be removed, destroyed and/or interfered with on site without the permission of an accredited archaeologist	
Operational phase impacts: *Impacts during the operational phase are expected to occur during the installation of substation infrastructure (future transformers, lines, feeders, storeroom, and fencing) and during maintenance and repairs of the Substation. The following impacts are anticipated:*				
Potential impacts:	**Description of Impact**	**Significance rating of impacts:**	**Proposed mitigation: Construction and operation phase**	**Significance rating of impacts after mitigation:**
1. Noise and dust pollution	- **Noise and dust may occur during maintenance of the substation** - **noise levels may emanate from transformers and cooling fans**	**Medium to Low**	- Dust suppression and wet spraying should be implemented - Limit maintenance hours to daytime and weekday - Ensure that noise levels are in accordance with SANS 10103 for residential areas by implementing a monitoring programme	**Low**
2. Soil erosion	**Storm water runoff may cause soil erosion outside the boundaries of the substation**	**Medium**	- Regularly inspect all storm water channels - Provide soil conservation measures in areas of susceptible erosion around the substation	**Low**
3. Disruption to local residents	**Power cuts during maintenance may disrupt local people**	**Medium**	- Inform residents if planned power cuts at least 15 -30 days before implementing	**Low**
6. Visual character	**The industrial character and scale of the power line and substation will contrast with the peri-urban, residential character of the landscape**	**Medium**	- Screen planting for a substation is in most cases the most affective but safety precautions are required. - design phase powerline infrastructure and substation to reduce visual impacts	**Low**

Decommissioning phase - *The closure phase for the substation is anticipated to be within 30 - 40 years from development of the facility. Should the facility be decommissioned it is anticipated that the structures will be dismantled and removed and a rehabilitation plan (removal of all hydrocarbons, substation components and provision of recycling plans) approved by the relevant authorities will be implemented.*

Indirect impacts:

- The construction of the access road will result in the direct impact of minimal vegetation clearing when widening the roads.
- Loss of topsoil due to earthworks and foundation establishment for the substation.
- Noise from construction vehicles and equipments and the labourers

Cumulative impacts:

Visual Cumulative impacts will emanate from the substation itself as there are existing distribution powerlines already transecting the area

Operational phase impacts: *Impacts during the operational phase are expected to occur during the installation of substation infrastructure (future transformers, lines, feeders, storeroom, and fencing) and during maintenance and repairs of the Substation. The following impacts are anticipated:*

Potential impacts:	Description of Impact	Significance rating of impacts:	Proposed mitigation: Construction and operation phase	Significance rating of impacts after mitigation:
1. Noise and dust pollution	- **Noise and dust may occur during maintenance of the substation** - **noise levels may emanate from transformers and cooling fans**	**Medium to Low**	- Dust suppression and wet spraying should be implemented - Limit maintenance hours to daytime and weekday - Ensure that noise levels are in accordance with SANS 10103 for residential areas by implementing a monitoring programme	**Low**
2. Soil erosion	**Storm water runoff may cause soil erosion outside the boundaries of the substation**	**Medium**	- Regularly inspect all storm water channels - Provide soil conservation measures in areas of susceptible erosion around the substation	**Low**

3. Disruption to local residents	**Power cuts during maintenance may disrupt local people**	**Medium**	- Inform residents if planned power cuts at least 15 -30 days before implementing	**Low**
7. Visual character	**The industrial character and scale of the power line and substation will contrast with the peri-urban, residential character of the landscape**	**Medium**	- Screen planting for a substation is in most cases the most affective but safety precautions are required. - design phase powerline infrastructure and substation to reduce visual impacts	**Low**

Decommissioning phase - *The closure phase for the substation is anticipated to be within 30 - 40 years from development of the facility. Should the facility be decommissioned it is anticipated that the structures will be dismantled and removed and a rehabilitation plan (removal of all hydrocarbons, substation components and provision of recycling plans) approved by the relevant authorities will be implemented.*

Indirect impacts:

- The construction of the access road will result in the direct impact of minimal vegetation clearing when widening the roads.
- Loss of topsoil due to earthworks and foundation establishment for the substation.
- Noise from construction vehicles and equipments and the labourers

Cumulative impacts:

Visual Cumulative impacts will emanate from the substation itself as there are existing distribution powerlines already transecting the area

Decommissioning phase - *The closure phase for the substation is anticipated to be within 30 - 40 years from development of the facility. Should the facility be decommissioned it is anticipated that the structures will be dismantled and removed and a rehabilitation plan (removal of all hydrocarbons, substation components and provision of recycling plans) approved by the relevant authorities will be implemented.*

Indirect impacts:

- The construction of the access road will result in the direct impact of minimal vegetation clearing when widening the roads.
- Loss of topsoil due to earthworks and foundation establishment for the substation.
- Noise from construction vehicles and equipments and the labourers

Cumulative impacts:

Visual Cumulative impacts will emanate from the substation itself as there are existing distribution powerlines already transecting the area

Decommissioning phase - *The decommissioning phase would entail the dismantling of the powerlines, the construction of access roads for dismantling (if applicable) and the transportation of materials from the sites. It is anticipated that the structures will be dismantled and removed and a rehabilitation plan (removal of all hydrocarbons, tower structures and provision of recycling plans) approved by the relevant authorities will be implemented. However the closure and decommissioning require a separate EIA process and will be conducted as and when closure is required.*

Indirect impacts:

- The construction of the access road to powerlines sites will result in impact, though of a minimal nature - vegetation clearing when widening the roads.
- Loss of topsoil due to earthworks and foundation establishment for the tower structures.
- Noise from construction vehicles and equipments and the labourers

Direct impacts: (Construction phase)

*The substation will be located on a privately owned agricultural farm land (cattle farming) to ensure and no significant impacts are anticipated from this location. It is evident that landowners, whose properties may be affected, will be concerned about the development. It is advisable that Eskom negotiate details of the final power line corridor and tower positions with affected landowners individually (in consultation with ward Councillors) before finalising the design. This will be undertaken as a normal part of the land and/or servitude acquisition process. As indicated, an access road may be required for ease access to the site, although the construction of the road is not a listed activity, the impact assessment of this access road has been undertaken as part of this BA. A geotechnical assessment (**Appendix D**) has been undertaken to identify potential stability issues that may emanate from this development. The impacts are assessed and presented as follows:*

Indirect impacts:

- None

Cumulative impacts:

- None

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as Appendix F.

2. Environmental Impact Statement

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Preferred route – Rhombus Lethabong powerline

The proposed route and Proposed Substation *are the preferred from the environmental perspective as the majority of the alignment occurs within transformed and disturbed site. No significant environmental sensitivities were identified on site.*

With regard to the site for the location of the substation alternative, it has emerged during the Basic Assessment process that the proposed substation Alternative site is located ESA and CBA corridor as identified by the Northwest Biodiversity Assessment. It is therefore a recommendation of the Ecological specialist that the proposed substation site next to the entrance gate Rhovan mine be considered for the location of the substation. The recommended site is disturbed and located next to a mining area. No wetland conditions and vegetation sensitivities were observed on the proposed substation site. Proposed Substation site is also conveniently located next to the mine access road which will which limit the impact of creating new roads, thereby reducing further environmental impacts.

Based on the summary of environmental observations presented, it is a conclusion of this BA that the proposed project will have moderate to low impacts on the bio-physical environment, all of which can be fully mitigated and managed, and where possible prevented. There will be impacts on vegetation, soil, dust and noise generated by the earth moving equipment, waste generated by the influx of contractor's and establishment of the contractor's camps. There will be minimal clearing of vegetation for the purposes of access road construction. Applying for a Water use licence (as the activity is located 500m from a watercourse) and fencing the site to avoid impact on the surrounding natural vegetation are some of the key mitigation measures that must be implemented during construction.

Proposed Substation

It was an opinion of the Basic Assessments and the specialist assessment that the proposed Rhombus substation site be considered/approved for the construction of the substation as the site is already disturbed and located to a mining area. *Mitigation measures to protect the surrounding natural vegetation to the north of the site during the construction of the substation must be implemented.*

Substation Alternative 2

From an ecological perspective (ESA/CBA corridor), Alternative 1 for the Proposed Substation location is not preferred due to the ecological sensitivities that were identified on site. The study site is located ESA and CBA corridor as identified by the Northwest Biodiversity Assessment and should preferably be conserved.

No-go alternative (compulsory)

The No-go option implies that the Project does not proceed, and will thus comprise of Eskom not going ahead with the construction of the proposed power line and substation. Ideally this would be

the preferred alternative as the status quo of the environment remains unchanged, however due to the growing demand for energy and mining activities that will require electricity in the area, this alternative is not feasible. Should Eskom rely on the existing network to supply future demand it is highly likely that present supply will be compromised due to the increased load on the network.

- **Direct impacts**

  - Eskom will not be able to supply sufficient electricity to customers and new developments.
  - Limited development and employment opportunities will be created (i.e. no construction phase).

- **Indirect Impacts**
  - Local suppliers and contractors will not benefit from the business opportunities relating to construction
  - No new business and industrial ventures due to lack of electricity
  - Power outages and uncertain power supply may be experienced in the study area
  - No increase in the economic activity in the area and as a result socio economics will be depressed.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	**YES**	NO

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

This BAR has provided a comprehensive assessment of the potential environmental impacts associated with the proposed Rhombus Lethabong powerline and substation project. These impacts have been identified by the EIA team (including specialists) and I&APs. The key findings of the BA are discussed in this Report. In general, the proposed development will have an impact of low significance provided that there is effective application of the mitigation measures proposed in this BAR and the EMPr. The majority of these impacts are easily mitigated and can be reduced to lower significance through appropriate design and mitigation measures. No unacceptably impacts of unacceptably high significance are foreseen once proper mitigation measures have been implemented. The findings of the specialists that were involved are briefly presented as follows:

- The Ecological specialist (fauna, flora and wetland) concluded that the proposed substation and proposed three powerline routes transects a number of individuals of protected species (Marula (*Sclerocarrya birrea)*, Ironwood (*Combretum imberbe*) and Shepherd's Tree (*Boscia albitrunca) as per the National* Forest Act 84 of 1998. It was a recommendation of the Ecological specialist that of the three options, the preferred power line route is the best route in terms of its environmental impact. The second best route it that of Alternative 2 and the least preferred one is Alternative 1.
- The specialist heritage, visual and Geotech, and agricultural potential did not raise issues of significant concern against the proposed development.
- It is a recommendation of the Geotechnical Engineer that that a detail geotechnical investigation be conducted along the power line route as well as substation sites in order to verify this desk study and to provide site specific appropriate founding solutions. The recurrence interval of mining induced seismic events should be determined and taken into consideration for the design of pylons and the substation.

Accordingly and based on the specialist assessment and various environmental assessment of the conditions, the proposed route (green) and proposed Rhombus substation have emerged as the preferred options from an environmental perspective. It is therefore a recommendation of this Basic Assessment that these alternatives be authorized and the project be granted a positive authorisation.

The preferred and the recommended alternative option in this BAR are based on the minimal impacts of the proposed project on the bio-physical environment to be affected by the project. It is therefore recommended that the environmental authorities authorise the development subject to the following conditions:

- Before Commencement of construction, the Site Contractor prepares an Environmental Protection Plan for the protection of natural areas around the site. The Plan shall cover all

environmental protection works and shall also include descriptions of environmental safeguards and emergency procedures.

- A walk down of the route must take place by a plant ecologist or botanist before the most suitable route is finally surveyed for construction purposes. This is to mark and GPS those individuals of the protected tree species [Marula (*Sclerocarrya birrea)*, Ironwood (*Combretum imberbe*) and Shepherd's Tree (*Boscia albitrunca*)]. This is important for permit purposes as well as to damage or cut the least number of these protected trees. These plants be identified and marked prior to the construction phase;
- Protected trees that may be affected by construction should be marked prior to the construction phase to facilitate the application process to obtain permission from the Department of Agriculture, Forestry and Fisheries for their removal/pruning
- The applicant must apply for a Water use Licence from the Department of Water Affairs in areas where water resources are impacted (streams and wetland crossing) before commencement of construction in those areas;
- The applicant undertake detail geotechnical investigation be conducted along the powerline route as well as substation site in order to verify this desk study and to provide site specific appropriate founding solutions;
- An independent ECO should be present during construction (erection of powerline and stringing of cables) at the site to ensure that the natural vegetation is not damaged
- Compliance with the mitigation measures outlined in this BA report and EMPr;
- Continued consultation and engagement with all relevant stakeholders – especially property owners, neighbouring and local communities, and respective municipalities during labour recruitment and procurement for services and supplies during construction phase;
- Monthly monitoring and evaluation of the construction sites for environmental compliance;
- Eskom shall ensure that adequate protection measures are taken to minimize the potential risk of theft during the construction and operational phase.
- Implementation of the environmental awareness plan to the contractor's during the construction of the powerlines;
- Compliance with all legal requirements in relation to environmental management and conditions of the authorisation issued by DEA.

Is an EMPr attached?	**YES**	NO

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

Nkhensani Khandlhela

NAME OF EAP

_____ _____

SIGNATURE OF EAP DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Locality Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)
- D1: Geotechnical Assessment
- D2: Ecological Assessment (Flora, Fauna & Wetland report)
- D3: Heritage Impact Assessment
- D4: Wetland Assessment
- D5: Agricultural Assessment
- D6: Visual Assessment

Appendix E: Public Participation Process

Appendix F: Impact Assessment and Assessment Methodology

Appendix G: Environmental Management Programme (EMPr)
- Eskom Guideline for the **Prevention and Control of Erosion** on Eskom Distribution North Western Region Land and Servitudes, September 2003.
- Eskom **Land and Biodiversity** Standard, December 2011.
- Eskom **Standard for Bush Clearance and Maintenance of Servitude Routes** Date: May 2000

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest (Declaration contained in specific specialist reports)

Appendix J: Additional Information
- Correspondence with Authorities