# PROPOSED DEVELOPMENT OF THE TAUNUS DIEPKLOOF 132KV OVERHEAD POWERLINE AND TWO 132 KV SUBSTATIONS, JOHANNESBURG, GAUTENG.

.

## FINAL BASIC ASSESSMENT REPORT

**MAY 2016**

**DEA REFERENCE:**

**14/12/16/3/3/1/1531**

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environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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| | |
|---|---|
| **File Reference Number:** | |
| **Application Number:** | |
| **Date Received:** | |

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, 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, 2014 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 **08 December 2014**. 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 in the electronic copy of the report submitted to the competent authority.

## *PROJECT DETAILS*

| | | |
|---|---|---|
| **Title** | : | Environmental Impact Assessment Process<br>Proposed Development of the Taunus Diepkloof 132kV Overhead Power line and Two 132 kV Substations, Johannesburg, Gauteng |
| **Report compiled by** | : | Company Name: Envirolution Consulting<br>Author: Mr Thabang Sekele<br>Postal Address: P.O.Box 1898, Sunninghill, 2157<br>Telephone Number: 0861 44 44 99<br><br>Fax Number: 0861 62 62 22<br>Email: thabang@envirolution.co.za |
| **Client** | : | Eskom Holdings SOC Ltd |
| **Report Status** | : | Final Basic Assessment Report for Authority decision |

**DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)**

| | | | |
|---|---|---|---|
| **Environmental Assessment Practitioner (EAP):** | Envirolution Consulting (Pty) Ltd | | |
| **Contact person:** | Gesan Govender | | |
| **Postal address:** | PO Box 1898, Sunninghill | | |
| **Postal code:** | 2157 | | |
| **Telephone:** | (0861) 444499 | Cell: | (083) 419 8905 |
| **E-mail:** | gesan@envirolution.co.za | Fax: | (086) 162 62 22 |
| **EAP Qualifications** | BSc (Hons) | | |
| **EAP Registrations/ Associations** | Registered with the South African Council for Natural Scientific Professions (No: 400049/12) | | |

**Details of the EAP's expertise to carry out Basic Assessment procedures**

Envirolution Consulting Pty Ltd was contracted Eskom as the independent environmental consultant to undertake the Environmental Basic Assessment process for the proposed project. Envirolution Consulting Pty Ltd is not a subsidiary of or affiliated to Eskom. Furthermore, Envirolution Consulting does not have any interests in secondary developments that may arise out of the authorisation of the proposed project.

Envirolution Consulting is a specialist environmental consulting company providing holistic environmental management services, including environmental impact assessments and planning to ensure compliance with environmental legislation and evaluate the risk of development; and the development and implementation of environmental management tools Envirolution Consulting benefits from the pooled resources, diverse skills and experience in the environmental field held by its team.

The Envirolution Consulting team have considerable experience in environmental impact assessments and environmental management, and have been actively involved in undertaking environmental studies, for a wide variety of projects throughout South Africa, including those associated with linear developments.

The EAPs from Envirolution Consulting who are responsible for this project are (refer to **Appendix I** for CVs):

- Gesan Govender – The principle environmental assessment practitioner (EAP) for this project is a registered Professional Natural Scientist and holds an Honours Degree in Botany. He has over 15 years of experience within the field of environmental management. His key focus is on strategic

environmental assessment and advice; management and co-ordination of environmental projects, which includes integration of environmental studies and environmental processes into larger engineering-based projects and ensuring compliance to legislation and guidelines; compliance reporting; the identification of environmental management solutions and mitigation/risk minimising measures; and strategy and guideline development. He is currently responsible for the project management of EIAs for several diverse projects across the country.

- Mr. Thabang Sekele forms part of the project team and acts as the Project Manager for all phases of the project. Thabang holds a BA (Environmental Management) from University of Johannesburg Thabang's key focus is on strategic environmental assessment and advice; management and co-ordination of environmental projects, which includes integration of environmental studies and environmental processes into larger engineering-based projects and ensuring compliance to legislation and guidelines; environmental auditing and compliance reporting; the identification of environmental management solution and mitigation/risk minimising measures; environmental auditing, monitoring and reporting compliance. Thabang is currently an Environmental Consultant at Envirolution Consulting (Pty) Ltd. He is currently involved in several EIAs energy projects across the country

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# SECTION A: ACTIVITY INFORMATION

| Has a specialist been consulted to assist with the completion of this section? | YES✔ | NO |
|---|---|---|

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

## 1. PROJECTDESCRIPTION

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

**1.1 Background Information**

Eskom Holdings (SOC) Ltd (hereafter referred to as "Eskom") is submitting an application to the Department of Environmental Affairs (DEA) for the proposed development of a 132kV power line from the existing Taunus substation to the existing Diepkloof substation and two new substations. Both the proposed new substations will be located within the boundaries of the West Rand District Municipality on Farm Zuurbekom 297 IQ and are proposed to have a capacity of 132kV.The length of the power line will be approximately 40 km and the footprint of both the proposed substations will be 100 m x 100 m (1 hectare). The proposed project will be located south of Soweto in within the City of Johannesburg Metropolitan and another portion within the Westonaria Local Municipality which are both located in Gauteng Province. The Westonaria Local Municipality falls within the West Rand District Municipality (Please refer to **Figure 1** and **Figure 2** and for a detailed map **Appendix A**).

The objective of the project is to reduce the network constraints as well as to improve the quality of supply in the City of Johannesburg Metropolitan Municipality and the West Rand District Municipality .It is envisaged that the proposed line and substations will reinforce the supply and improve supply reliability to all existing and future customers in the area.

The Taunus substation is located on the farm Zuurbekom 297 IQ and lies just east of the R559, whilst the Diepkloof substation is situated on the farm Diepkloof 319 IQ, lying north of the Chris Hani Road (M68). The sites for the two proposed substations are located on the farm Zuurbekom 297 IQ west of the R558.

An extensive power line network is already present in most parts of the study area. The network is more intricate near the existing substations due to a convergence of numerous power lines. It is to be noted that the proposed 132kV servitude will use the existing servitude and will run parallel to other existing servitudes for the majority of the route. It is only on a few occasions that the proposed power line will deviate off the existing power line servitude.

The following farms, main suburbs/areas and roads form part of the study area that could be affected by the proposed powerline, including the alternative alignments:

- Zuurbekom 297 IQ;
- West Rand Agricultural Holdings;
- Doornkop 239 IQ;

- Olifantsvlei 316 IQ;
- Nufcor;
- Rivasdale 562IR;
- Klipriviersoog 299IQ;
- Klipriviersoog Estate, Misgund 322IQ;
- Devland Ext 1 and 27;
- Lenasia Ext 13;
- Rietfontein 301IQ;
- Goldev 449IQ;
- Goudkoppie 317IQ;
- Planvakte 291IQ;
- Waterpan 292 IQ;
- Syferfontein 293IQ;
- Diepkloof 319IQ;
- Johannesburg Waste Water Treatment Works (Bushkoppies, Goudkoppies and Olifantsvlei)
- JRA &Dept of Public Works (R553, N12, R554, M68,M10)
- Olifantsvlei Nature reserve;
- Devland City parks;
- Sasol Gas pipeline;
- KFC Business area;
- Bara Mall;
- Transnet Freight Rail;
- Rand Water in Zuurbekom;
- Landfill site near Devland;
- Devland and its Extensions;

The proposed development for which application is being made therefore entails the following:

- The construction of two new 132 kV substations each with a footprint of 1 hectare.
- The construction of a 132 kV 40 km overhead power line from Taunus substation to Diepkloof substation.

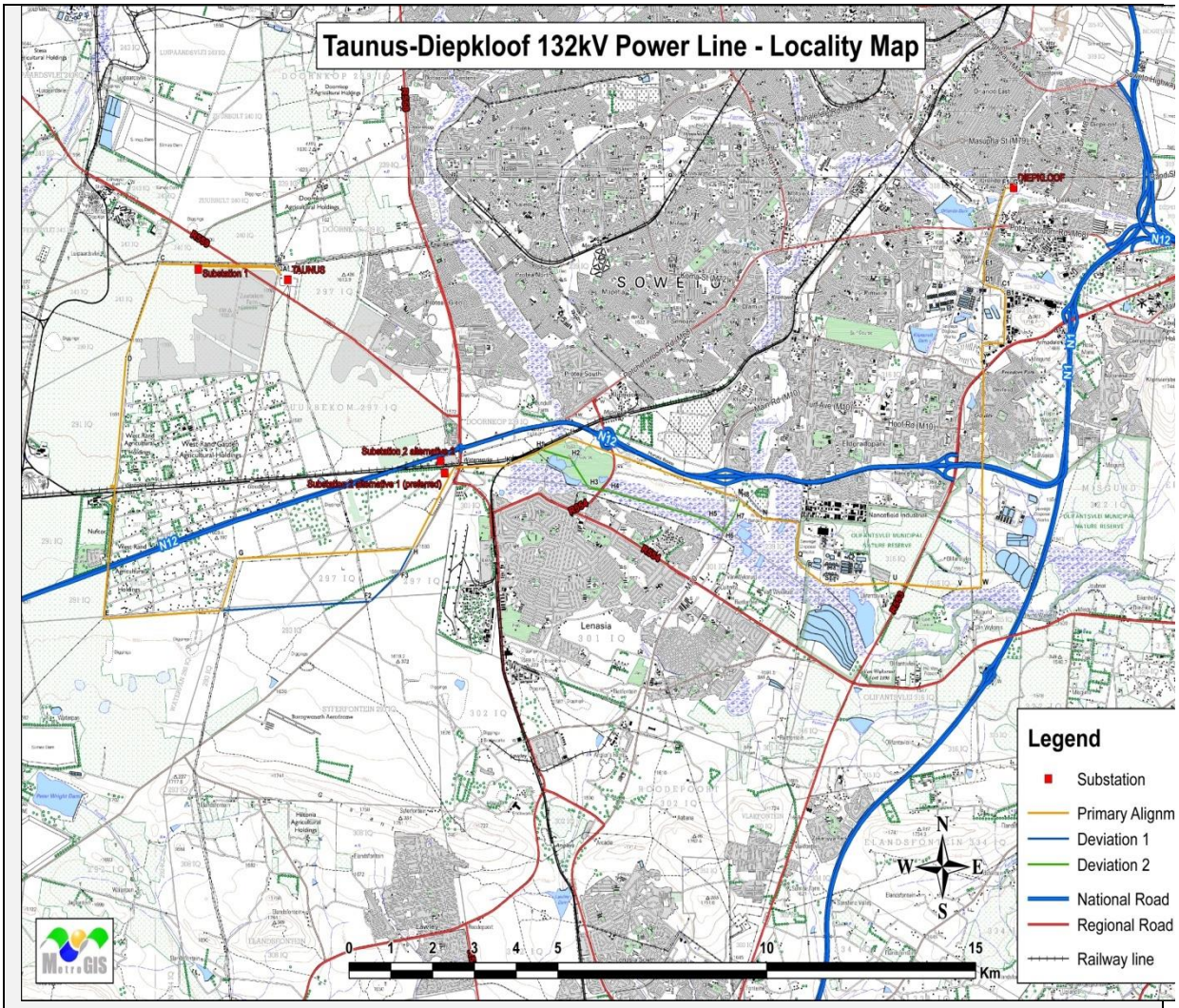


**Figure 1:** Map indicating the locality of the study area. (Please note that a larger A3 size map is included as **Appendix A1** for an easier view)

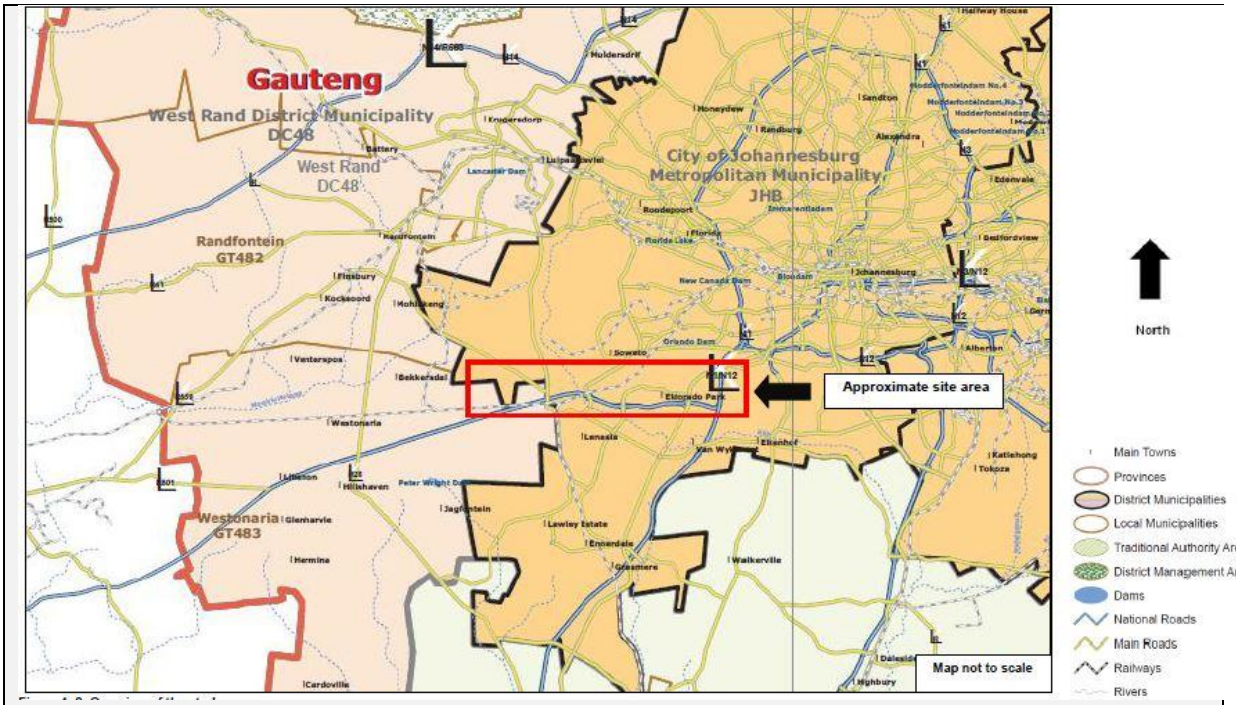


**Figure 2:** Overview of the study area

The three route alternative corridors for the construction of the 132Kv proposed power line are as follows:

Based on a pre-feasibility analysis undertaken by Eskom Holdings (Pty) Ltd, three technically feasible routes have been identified as alternatives for the construction of the 132kV proposed power line (refer to Figure 1). These are described as follows:

### Primary Alignment (Preferred option)

The proposed 132kV line will leave the Taunus substation situated on the farm Zuurbekom 297 IQ and will follow an existing 132 kV servitude heading across the R559 in a westerly direction. It then heads south on the western boundary of the West Rand Garden Agricultural holdings after which it crosses the N12 and deviates in an easterly direction. It crosses the farm Zuurbekom 297 IQ and continues east traversing Olifantsvlei 316 IQ adjacent to the N12 thereafter crossing the Klip River and running just south of the Nancefield Industrial Area. The line thereafter runs north, crossing the N12, the R553 and the Chris Hani Road (M68) before connecting to the Diepkloof Substation. This power line will transverse farms Zuurbekom 297IQ, Doornkop 239IQ, Olifantsvlei 316IQ, Rivasdale 562IR, Klipriviersoog 299IQ, Klipriviersoog Estate, Misgund 322IQ, Devland Ext 1 and 27, Lenasia Ext 13, Rietfontein 301IQ, Goldev 449IQ, Goudkoppie 317IQ, Planvakte 291IQ, Waterpan 292 IQ, Syferfontein 293IQ, West Rand AH and Diepkloof 319IQ. This route is approximately 40700m in length.

### Deviation 1 Alignment (Blue)

Deviation 1 is located to the south of the West Rand Agricultural Holdings and traverses the farm

Zuurbekom 297 IQ. It runs approximately 1 km south of the primary alignment for this section of the line. This route is approximately 41300m in length.

### Deviation 2 Alignment (Green)

Deviation 2 is located within the Klip River moist grasslands (wetland) north ofLenasia. It is located south of N12 and the south of the primary alignment in the area of the Moroka Bypass on the N12. This route is approximately 41500m in length. The position of all the alternatives is shown on the map in **Figure 1.**

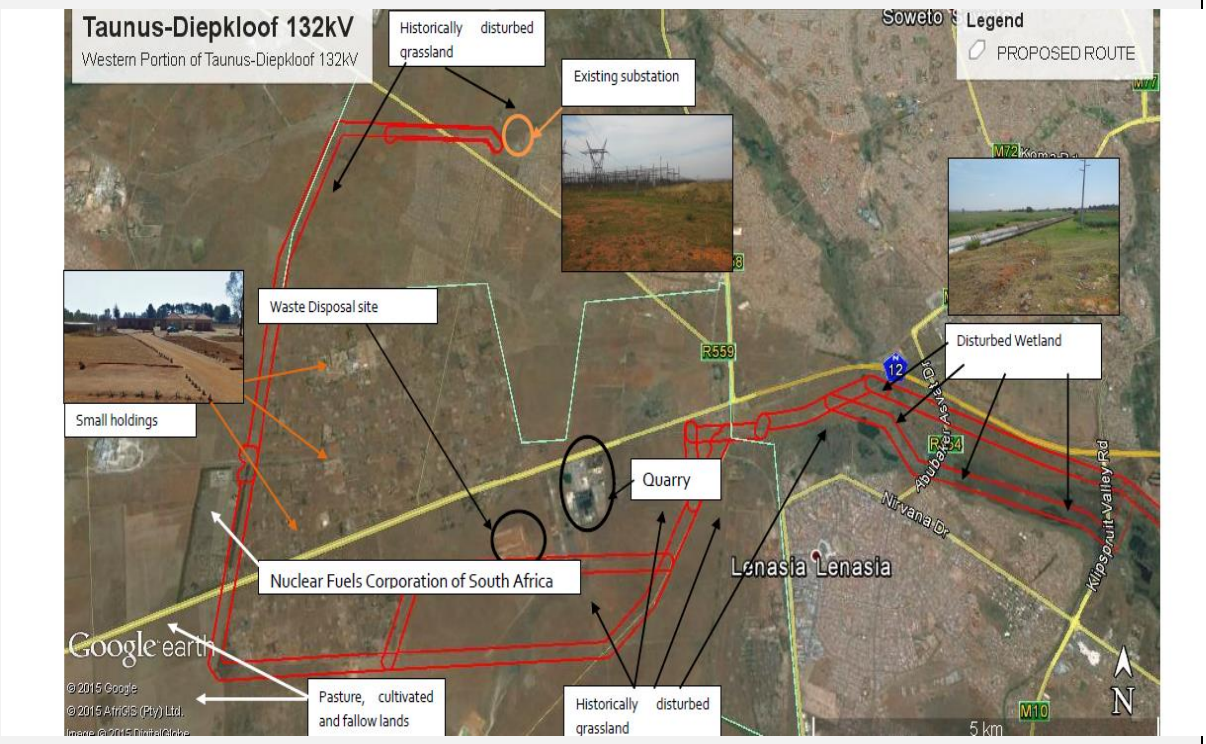


**Figure 2**: Land uses and route plan along the western portion of the Taunus Diepkloof 132 kV power line.

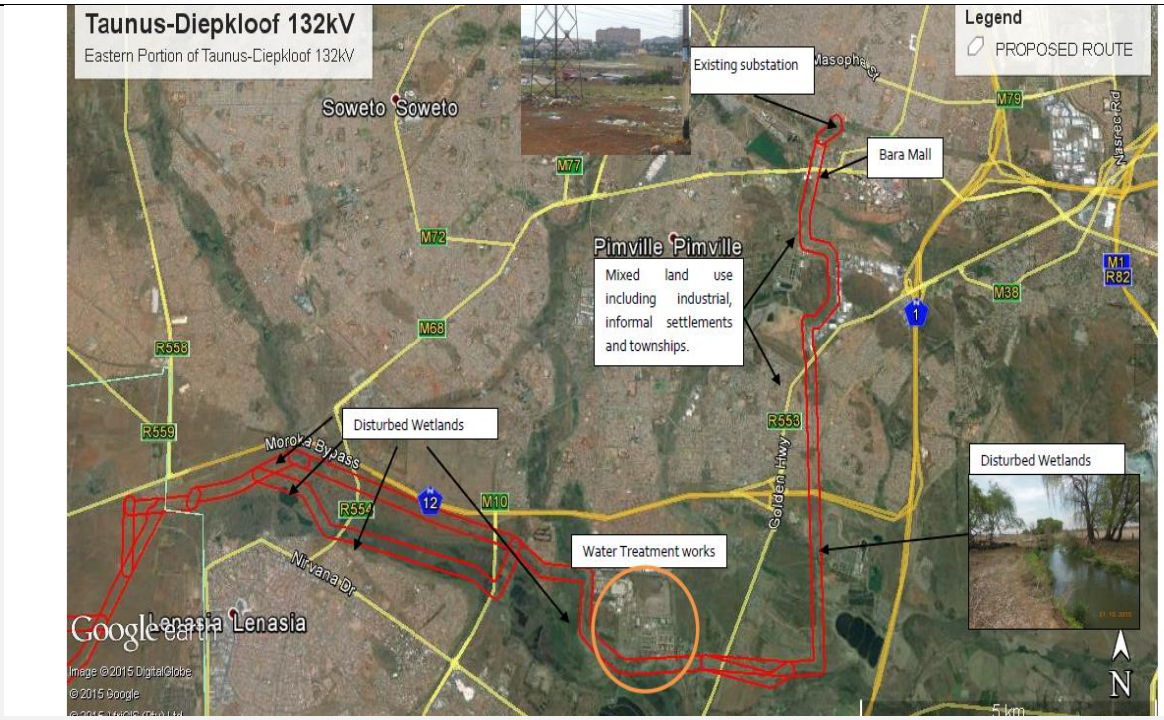


**Figure 3**: Land uses and route plan along the eastern portion of the Tanus Diepkloof 132 kV power line.

**Proposed Substations**

As already has been mentioned, the proposed development will also include the construction of two substations (Substation 1 and Substation 2).

- **Substation 1**

A site of about 1 ha (100 m x 100 m) located approximately 2 km west of the existing Taunus substation has been identified for the construction of the Substation 1 on **Portion 1 of Farm Zuurbekom 297 IQ.** No site alternatives were investigated for the location of substation 1 due to limited land availability in the area where it is proposed to be located, as the project site is located in an area that is urbanised and the area is rapidly expanding in terms of residential development and land is most likely planned for this residential expansion by its owners and would likely result in prolonged land negotiations and servitude acquisitions with the township developers.On assessment this one alternative was deemed feasible and viable as it is likely to have no land owner issues.

- **Substation 2 (Alternative site A and B)**

Two alternative sites of about the same size have been identified and proposed for the location of Substation 2. These substation alternative sites will be located west of Taunus Substation. Alternative site A (**preferred**) is located south of the railway line, south of the Rand Water pump station. Alternative Site B is located between the N12 Highway and the railway line, west of the Rand Water pump station. Both the alternative sites are located on **Portion 38 Farm Zuurbekom 297 IQ.**The area in which Substation 2 (Alternative A-Preferred) is located, is a nearly flat area and is covered in the

majority by grass and blue gum trees. A small excavation is situated along the southern boundary with a dirt road running east to west alongside it. Substation (Alternative site B) is located on a flat area covered largely by grass with an existing dirt road traversing its northern corner. No wetland or riparian areas are recorded with 500 m of this site. The proposed locations can easily be accessed via established roads. The proposed alternatives sites are very close to each other and thus exhibiting similar natural characteristics. No wetland or riparian areas are recorded with 500 m of the Substation 2 site.

### 1.2 Project Motivation

A request for future energy supply has prompted Eskom to evaluate their infrastructure in the area and look at alternatives to meet future energy demand in the area. The proposed project aims to strengthen the network capacity as well as to improve the quality of supply in the area. High energy demand activities e.g. mining are prominent in the area. Currently a large amount of pressure is placed on the existing substations and it is unlikely that it have the capacity to meet future demands.

### 1.3 Need for the Proposed Development

The existing 88kV and 132kV networks are unable to cater for future load growth in the area. The existing network that supply the Johannesburg South areas are becoming overloaded following the increasing pressure from residential and commercial development. Therefore a new MVA source (20MVA load) is required in the vicinity of the RWB Zuurbekom just south of the N12, another new MVA 11 kV source required adjacent to Pimville in order to remove existing load capacity from Moroka. In order to improve reliability, a backup supply is also required for the new Calcined Products substation. These proposed developments in Soweto will connect Taunus with new source, support existing networks by deloading lines currently strained, will make available bulk capacity on the south side of Soweto and will further make Soweto competitive for development.

Local benefits of the proposed development include benefits to the local economy through job creation in the construction phase as well as during the operational phase of the development. The construction for the proposed powerline is estimated to last for approximately two years and further estimate about six weeks per kilometre construction time. During the construction phase of the development, local labour (where applicable) will be sourced and where possible socially responsible local service providers will be used in order to benefit the maximum amount of people.

### 1.4 Infrastructural description

The powerline will be a double circuit twin – Tern which means that the towers will be Lattice 247 ABC. The number of pylons required is dependent on the number of bend points that will be encountered. Examples of the double-circuit towers are attached in **Appendix C.** Details regarding the number and the type of towers and other support infrastructures associated with the power line will be confirmed during the detail design phase and following the approval of the proposed development.

Currently it is proposed that a combination of a suspension tower (Lattice 247), steel monopole structure and H poles will be used to support various sections of the power lines.

Steel Monopoles as support structures for the 132kV line are self-supporting structures that will pose less visual impact as they incur a smaller footprint, when compared to the larger pylons. A monopole steel pole may be used is some sections of the new 132kV line. Clearance between phases on the same side of the pole structure is normally around 2.0m for this type of design, and the clearance on strain structures is 1.8m. The length of the stand-off insulators is likely to be 1.5m. The disadvantage of these however is that they are more expensive than the other available choices of pylon and they have a bigger footprint due to a larger foundation area.

The construction of the substations is expected to consist of the following sequential phases:

- Establishment of construction camp/s;
- Establishment of an access road if required;
- Clearance and levelling of the 100 m x 100 m footprint;
- Erection of a perimeter fence; and
- Installation of isolators, current transformers, circuit breakers, busbars, voltage transformers, power transformers, lighting posts and floodlighting.

**1.5 Environmental Setting**

The environmental sensitivities on site were evaluated by various specialists. The information pertaining to the biophysical environment (geotechnical conditions, soils, drainage and ecology) has been supplemented with the results of the Specialist Geotechnical, Ecological (Flora and Wetland) and Agricultural Assessments.

The climate of the area can be described as typical of the highveld, with cool to cold, dry winters and moist, warm to hot summers. Most of the rainfall (84.4%) falls between October and March, and frost is common, especially in the lower-lying parts. Geotechnically, both proposed substations sites are underlain by “dolomite, chert and remnants of chert breccia of the Rooihoogte Formation” of the Malmani Subgroup, Chuniespoort Group, Transvaal Supergroup. Specific geotechnical conditions of the study area are contained in the geotechnical report attached as **Appendix D1**.

**1.6 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, Avifauna, Heritage and Geotechnical Assessments were undertaken during the Basic Assessment and their reports are attached as Appendices to this BAR.

## 1.7 Required services

### 1.7.1 Access Routes

For construction purposes most areas along the route can be reached via the existing public and farm roads. The use of roads on landowner property is subject to the Environmental Management Programme (EMPr) and will be determined based on discussions with landowners during the negotiation process.

Stormwater will be managed according to the Eskom Guidelines for Erosion Control and Vegetation Management as well as the EMPr that has been compiled for the construction and operational phase.

### 1.7.2 Construction Site Camps

Normally the power line 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.

### 1.7.3 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 by the appointed service provider.

### 1.7.4 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.

### 1.7.5 Electricity

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

### 1.7.6 Construction Process

Generally, the construction of the power line 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**.

**1.7.7 Operation Phase.**

The proposed power line will require routine maintenance work throughout the operation phase. The servitude of 31m will be registered (a right of way) along the length of the power line. During this operation phase vegetation within the servitude will require management if it occurs, only if it impacts on the maintenance of the power line. Minimal maintenance will also be required at the substation.

**1.7.8 Decommissioning Phase.**

The infrastructure will be decommissioned once it has reached the end of its economic life or is no longer required. If economically feasible/desirable the generic decommissioning activities would comprise the site preparations, disassembly of the individual components and removal from site and rehabilitation. However, it must be noted that, decommissioning and closure phase has not been considered as part of this application as the end use of the site and required decommissioning activities are not known at this time. If decommissioning phase is considered in future, the developer will undertake the required actions as prescribed by the legislation at the time and comply with all relevant requirements administered by any relevant authority and competent authority at that time.

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

| R983 Listing 1 Activity 11 (i) | Description of project activity |
|---|---|
| ***The development of facilities or infrastructure for the transmission and distribution of electricity –***<br><br>***(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts.*** | ***The proposed development will be constructed outside the urban area and will transmit up to 132kilovolts of power but less than 275 kilovolts*** |
| R983 Listing 1 Activity 27 | Description of project activity |
| ***The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is*** | ***The proposed development requires the clearance of indigenous vegetation of more than 1 hectare but less than 20 hectares.*** |

| | |
|---|---|
| ***required for- (i) the undertaking of a linear activity*** | |
| R983 Listing 1 Activity 12 (xii) | Description of project activity |
| ***The development of –***<br><br>***(xii) infrastructure or structures with a physical footprint of 100 square metres or more.***<br><br>***where such a development occurs-***<br><br>***(a) within a watercourse or (c) within the 32 metres of a watercourse, measure d from the edge of a watercourse.*** | ***Structures associated with the power line (pylon footings) exceeding 100m$^2$ in extent will be constructed within 32 metres of the edge of the watercourse.*** |

## 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 Appendix 1 (3)(h), Regulation 2014.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.

**a) Site alternatives**

As already has been mentioned, the proposed development will include the construction of two substations (Substation 1 and Substation 2).

**Substation 1 (Proposed)**

Only one feasible site has been identified for this substation. Substation 1 is located on **Portion 1 of Farm Zuurbekom 297 IQ** approximately 2 km from the existing Taunus substation. The site is an open vacant land within disturbed grasslands predominantly transformed by past cultivation activities. No site alternative has been considered for the location of substation 1 due to limited land availability in the area. Therefore only one site was deemed feasible

**Substation 2 (Proposed)**

Two alternative sites of the same size have been identified and proposed for the location of Substation 2 (Preferred and Alternative sites) These substation alternative sites will be located west of Taunus Substation. Alternative site A (**Preferred**) is located south of the railway line, south of the Rand Water pump station. Alternative Site B is located between the N12 Highway and the railway line, west of the Rand Water pump station. Both the alternative sites are located on **Portion 38 Farm Zuurbekom 297 IQ.** The area in which Substation 2 (Alternative site A-Preferred) is located, is nearly flat and is covered in the majority by grass and blue gum trees. A small excavation is situated along the southern boundary with a dirt road running east to west alongside it. Substation 2 (Alternative site B) is located on a flat area covered largely by grass with an existing dirt road traversing its northern corner. No wetland or riparian areas are recorded with 500 m of the Substation 2 Alternative A and B.. The proposed locations can easily be accessed via established roads. The proposed alternatives sites are very close to each other and thus exhibiting similar natural characteristics. These two site alternatives are also assessed in this report.

**SUBSTATION 1**

| **Substation 1** | | |
|---|---|---|
| Description | Lat (DDMMSS) | Long (DDMMSS) |
| The construction of the proposed substation presents optimal grid connection in relation to the proposed power line 132KV. | 26°15'59.13"S | 27°45'41.31"E |
| Alternative 2 | | |
| Description | Lat (DDMMSS) | Long (DDMMSS) |
| | | |
| Alternative 3 | | |
| Description | Lat (DDMMSS) | Long (DDMMSS) |
| | | |

**SUBSTATION 2**

| **Alternative Site A (preferred alternative)** | | |
|---|---|---|
| Description | Lat (DDMMSS) | Long (DDMMSS) |
| The construction of the proposed substation presents optimal grid connection in relation to the proposed power line 132KV. | 26°18'14.44"S | 27°48'47.97"E |

| Alternative Site B | | |
|---|---|---|
| Description | Lat (DDMMSS) | Long (DDMMSS) |
| The construction of the proposed substation presents optimal grid connection in relation to the proposed power line 132KV. The alternative substation is located approximately 100 m from the preferred site. | 26°18'06.28"S | 27°48'40.49"E |
| | | |
| Description | Lat (DDMMSS) | Long (DDMMSS) |
| | | |

In the case of linear activities:

**POWERLINES**

**Primary Alignment (Preferred option)**

The proposed 132kV line will leave the Taunus substation situated on the farm Zuurbekom 297 IQ heading across the R559 in a westerly direction. It then heads south on the western boundary of the West Rand Garden Agricultural holdings after which crosses the N12 and deviates in an easterly direction. It crosses the farm Zuurbekom 297 IQ and continues east traversing Olifantsvlei 316 IQ adjacent to the N12 thereafter crossing the Klip River and running just south of the Nancefield Industrial Area. The line thereafter runs north, crossing the N12, the R553 and the Chris Hani Road (M68) before connecting to the Diepkloof Substation. This power line will transverse farms Zuurbekom 297IQ, Doornkop 239IQ, Olifantsvlei 316IQ, Rivasdale 562IR, Klipriviersoog 299IQ, Klipriviersoog Estate, Misgund 322IQ, Devland Ext 1 and 27, Lenasia Ext 13, Rietfontein 301IQ, Goldev 449IQ, Goudkoppie 317IQ, Planvakte 291IQ, Waterpan 292 IQ, Syferfontein 293IQ, West Rand AH and Diepkloof 319IQ

**Deviation 1 Alignment (Blue)**

Alternative 1 is located to the south of the West Rand Agricultural Holdings and traverses the farm Zuurbekom 297 IQ. It runs south of the primary alignment for this section of the line.

**Deviation 2 Alignment (Green)**

Deviation 2 is located to the south of the Klip River near Lenasia. It is located south of N12 and the south of the primary alignment in the area of the Moroka Bypass on the N12.

| **Alternative:** | **Latitude (S):** | **Longitude (E):** |
|---|---|---|
| **Alternative S1 (preferred)** | | |
| • Starting point of the activity | 26°16'06.06"S | 27°46'43.53"E |
| • Middle/Additional point of the activity | 26°19'04.20"S | 27°49'37.00"E |
| • End point of the activity | 26°15'06.46"S | 27°56'04.45"E |
| **Alternative S2 (if any) (Deviation 1)** | | |
| • Starting point of the activity | 26°19'38.23"S | 27°46'46.66"E |
| • Middle/Additional point of the activity | 26°19'35.13"S | 27°47'49.37"E |

| | | |
|---|---|---|
| • End point of the activity | 26°19'02.70"S | 27°48'22.58"E |

**Alternative S3 (if any) (Deviation 2)**

| | | |
|---|---|---|
| • Starting point of the activity | 26°17'59.95"S | 27°49'54.44"E |
| • Middle/Additional point of the activity | 26°18'30.92"S | 27°51'23.17"E |
| • End point of the activity | 26°18'22.48"S | 27°52'21.69"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.

A table has been attached as Appendix J1 with all the proposed power line coordinates

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 of this form.

**b) 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

| Alternative 1 |
|---|
| |
| Alternative 2 |
| |
| Alternative 3 |
| |

Technology alternatives

The choice of technology will be determined in consultation with Eskom and the relevant contractors, and does not significantly affect the environmental impact of the proposed development in any way. In all likelihood, use will be made of monopole structures for the proposed power line, which is preferable over the existing self-supporting lattice tower structures. This will however be dictated by the site-specific conditions. The power line and substation must be constructed according to the authorised standards for a power line approved by Eskom Holdings SoC Ltd.

| |
|---|
| Alternative 1 (preferred alternative) |
| |
| |
| 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 proposed power lines 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 activities that will require electricity in the area, this alternative is not preferred.

This option is assessed as the "No go alternative" in this basic assessment report.

**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):**

**SUBSTATION 1**

| **Alternative:** | **Size of the activity:** |
|---|---|
| Alternative A1[1] (preferred site alternative) | 10000m² |
| Alternative A2 (if any) | |
| Alternative A3 (if any) | |

**SUBSTATION 2**

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

| **Alternative:** | **Size of the activity:** |
|---|---|
| Alternative A1[2] (Preferred Site) | 10000m$^2$ |
| Alternative A2(Alternative Site) | 10000m$^2$ |
| Alternative A3 (if any) | |

or, for linear activities:

**POWERLINE**

| **Alternative:** | **Length of the activity:** |
|---|---|
| Alternative A1 (preferred Route) | 40700m |
| Alternative A2 (if any) | 41300m |
| Alternative A3 (if any) | 41500m |

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

| **Alternative:** | **Size of the site/servitude:** |
|---|---|
| Alternative A1 (preferred activity alternative) | 31m |
| Alternative A2 (if any) | 31m |
| Alternative A3 (if any) | 31m |

## 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:

| |
|---|
| Power line and substation sites can be accessed using already existing access roads and tracks; however upgrading of some access roads leading to some of the sites may be required to allow easy movement of construction machinery. |

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).

A Locality map has been included as part of this report as **Appendix A**

## 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 50metres 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 DWS);
- 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.

Sensitivity maps have been included as part of this report as **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.

| |
|---|
| Colour photographs are enclosed within **Appendix B** of this report |

## 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.

| |
|---|
| Facility Illustrations are enclosed within **Appendix C** |

## 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 |
| The proposed routes and substations span over privately owned agricultural, residential smallholdings and industrial land. Once the proposed overhead line and substations have been constructed, limited impacts are expected. Eskom will acquire servitudes and affected property owners will be permitted to use areas underneath the lines for activities such as mining. Other activities, except the construction of buildings and tall structures and growing of trees, may also continue below the lines. | | | |
| **2. Will the activity be in line with the following?** | | | |
| **(a) Provincial Spatial Development Framework (PSDF)** | YES✔ | NO | Please explain |
| The Gauteng Employment, Growth and Development Strategy (2009) states that the infrastructure network of the Province is a strategic, socio-economic and bulk infrastructure investment and includes: transport and logistics (including roads, rail and air), Information and Communication and Technologies, schools, hospitals, clinics, libraries, universities (if applicable), **electricity services** (energy), water reticulation services, sewage and sanitation services, waste management services, and so forth. Thus the provision of electrical infrastructure is in line with SDF. | | | |
| **(b) Urban edge / Edge of Built environment for the area** | YES | NO✔ | Please explain |
| The proposed distribution lines fall outside the 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 |
| Critical services needed in the City of Johannesburg Metropolitan Municipality 2012/16 IDP and the Westonaria Municipality 2014/15include bulk supply of electricity which includes transmission, distribution and where applicable, generation . The objective of these new power lines and substation is to strengthen the current network capacity as well as to improve the quality of supply in the surrounding areas. The proposed substation needs to be constructed to accommodate new loads in the area. The upgrading of the city's electricity network has therefore become a strategic priority, especially the substations and transmission lines.<br><br>The proposed project entails electricity infrastructure, which is compatible with the City of Johannesburg Metropolitan Municipality 2012/16 IDP and the Westonaria Municipality 2014/15 of which has service delivery and infrastructure development objective. | | | |
| **(d) Approved Structure Plan of the Municipality** | YES | NO✔ | Please explain |
| No Structure plan has been developed for the Local Municipalities (LM). According to the LM IDP, both municipalities aim at ensuring that all citizens have access to basic services such as electricity. This project will assist in addressing such issues in the local municipalities as it will facilitate the provision of reliable electricity especially to the mining industries that are essential for the country`s economic growth. | | | |
| **(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 |
| The City of Johannesburg Metropolitan Municipality and the Westonaria Municipality do not have an Environmental Management Framework as a development guiding tool in its jurisdiction. The Gauteng biodiversity plan was therefore referred to in this regard. According to the Gauteng Conservation Plan the majority of the area surrounding the proposed site is of least threatened ecosystem.<br>The proposed project will have minimal environmental impacts, as the majority of the site is highly disturbed by past anthropogenic activities. The proposed project will not compromise the existing environmental management priorities. Then addition the long term developmental and sustainability goals coupled with increased economic activity and overarching benefits to both the region and the country in terms of power supply justifies the project. | | | |
| **(f) Any other Plans (e.g. Guide Plan)** | YES✔ | NO | Please explain |
| The Gauteng Department of Agriculture and Rural Development's Strategic Plan which intends to Create decent work and building of a growing inclusive economy, provide quality education and skills development, better health care for all, stimulating rural development and food security for all, intensify the fight against crime and corruption, build cohesive and sustainable communities, strengthen the development state and good governance | | | |

| | | | |
|---|---|---|---|
| **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✔ | NO | Please explain |
| The proposed development is in line with the National Development Plan, Johannesburg Metropolitan Municipality and the Westonaria Municipality IDP and SDPs, which relate to the provision of infrastructure such as electricity supply. Therefore, the proposed project is in line with the land use associated with the activity being applied for. | | | |
| **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✔ | NO | Please explain |
| The objective of the project is to reduce the network constraints as well as to improve the quality of supply in areas in the City of Johannesburg Metropolitan Municipality and the West Rand District Municipality. It is envisaged that the proposed line and substations will reinforce the supply and improve supply reliability to all existing and future customers in the area. The existing 88kV and 132kV networks are unable to cater for future load growth in the area. The existing network that supply the Johannesburg South areas are becoming overloaded following the increasing pressure from residential and commercial development. | | | |
| **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✔ | NO | Please explain |
| The construction of the substation and power line infrastructure will not place additional pressure on the local area or Municipality during construction or operation. It is anticipated that the required services including water and electricity will be sourced from the municipality during the construction phase. In addition, the proposed project is development of a new overhead 132 kV Taunus Diepkloof distribution power line and two 132 kV substations. . It will during operation provide additional electricity capacity needed 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✔ | NO | Please explain |
| The proposed project is to be developed by a ESKOM a parastal company. It therefore falls within the infrastructure planning of the municipality. The construction of the substation and power line infrastructure will not place additional pressure on both the City of Johannesburg Metropolitan and Westonaria Local municipalities the Municipality's infrastructure during construction or operation. The project will not have any implications for the municipalities but will assist them in their infrastructural planning priorities through increased electricity capacity | | | |
| **7. Is this project part of a national programme to address an issue of national concern or importance?** | YES✔ | NO | 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 will transverse on some privately land, the locations of the sites were selected such that the overall project iswithin or in close proximityto the centre of the load demand. | | | |
| **9. Is the development the best practicable environmental option for this land/site?** | YES✔ | NO | Please explain |
| A fair amount of the proposed route and substations are situated on and/or near privately owned agricultural area. Once in place, the powerline is unlikely to significantly disrupt agricultural activities. Eskom will acquire all servitudes, affected property owners will be permitted to use areas underneath the lines for farming or other activities other than the construction of buildings and tall structures and growing of tall trees. | | | |
| **10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?** | YES✔ | NO | Please explain |
| The specialist studies undertaken as part of this Basic Assessment conclude that the proposed routes and construction of the new substations will have low environmental impacts. The potential benefit of the proposed power line and substations to the area lies in the stimulation of the local economy through a reliable electricity supply, which will increasingly benefit the provision of services. Furthermore the objective of the proposed power line and substation is to strengthen the network capacity as well as to improve the quality of supply in the area. The benefits of the project are considered to outweigh the negative impacts. | | | |

| | | | |
|---|---|---|---|
| **11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?** | YES | NO✔ | Please explain |
| The proposed routes arein part adjacent to the existing electricity network supply. No new precedent will be created. | | | |
| **12. Will any person's rights be negatively affected by the proposed activity/ies?** | YES | NO✔ | Please explain |
| The proposed development of a new overhead 132 kV Taunus Diepkloof distribution power line and two 132 kV substations will not negatively affect any person's rights. The servitude rights for the line will be acquired by Eskom and financial compensation will be paid where applicable. | | | |
| **13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?** | YES | NO✔ | Please explain |
| The proposed project takes place in an area outside the urban edge. The urban edge will not be compromised. | | | |
| **14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?** | YES✔ | NO | Please explain |
| The project will conform to the objectives of the following SIPS:<br><br><u>SIP 6: Integrated Municipal Infrastructure Project</u><br>Develop a national capacity to assist the 23 least resourced districts (17 million people) to address all the maintenance backlogs and upgrades required in water, **electricity** and sanitation bulk infrastructure.<br><br><u>SIP 10: Electricity Transmission and Distribution for all</u><br>Expand the transmission and distribution network to address historical imbalances, provide access to electricity for all and support economic development. Align the 10-year transmission plan, the services back log, the national broadband roll-out and the freight rail line development to leverage off regulatory approvals, supply chain and project development capacity. | | | |
| **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. | | | |

| **17. How does the project fit into the National Development Plan for 2030?** | Please explain |
|---|---|
| The following NDP sections area relevant: Elements Of A Decent Standard Of Living – provision of Electricity<br><br>Women And The Plan<br>Access to safe drinking water, electricity and quality early childhood education, for example, could free women from doing unpaid work and help them seek jobs<br><br>Due to a reduction in capital spending from effect, South Africa has missed a generation of capital investment in roads, rail, ports, electricity, water, sanitation, public transport and housing. To grow faster and in a more inclusive manner, the country needs a higher level of capital spending.<br><br>Chapter 4: Economic Infrastructure<br>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.<br>Action 20 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.<br><br>Actions<br>21. Revise national electrification plan and ensure 90 percent grid access by 2030 (with balance met through off-grid technologies). | |
| **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 impactsand promote compliance with the principles of environmental management. | |
| **19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.** | |
| Avifauna, vegetation,fauna, heritage, geotechnical, visual, and wetland specialists were appointed to investigate potential environmental 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 stakeholders were identified and involved throughout the Basic Assessment process and their comments will be 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 (NEMA), No. 107 of 1998. | In terms of Section 24(1) of NEMA, the potential impact on the environment associated with these listed activities must be considered, investigated, assessed and reported on to the competent authority (the decision-maker) charged by NEMA with granting of the relevant environmental authorisation.<br><br>A Basic Assessment process is required to be undertaken for the proposed project. | Department of Environmental Affairs | 1998 |
| National Water Act No 36 of 1998. | The Primary Alignment and Deviation 2 is within 500 m of a watercourse | Department of Water Affairs and Sanitation | 1998 |
| National Environmental Management Waste Act No 59 of 2008 | No waste license activities are applicable to this project. The developer will however be required to store and manage waste in accordance with the requirements of this Act and associated Standards. | Department of Environmental Affairs | 2008 |
| National Heritage Resources Act No. 25 of 1999 | Under section 38. (1) of the NHRA any person who intends to construct a powerline or other linear development exceeding 300m in length must notify the responsible heritage resources agency of its intention.<br><br>As the proposed linear development exceeds 300m in length, a Heritage Assessment has been undertaken as part of this Basic Assessment (refer to Appendix D). No identified heritage sites were reported on site. However, should any heritage sites be unearthed during excavations, a permit would be required to be obtained from SAHRA. | South African Heritage Resources Agency (SAHRA)<br>The Provincial Heritage Resources Authority Gauteng (PHRAG) | 1999 |

| | | | |
|---|---|---|---|
| National Environmental Management: Air Quality Act (Act No 39 of 2004) | Measures in respect of dust control (S32) and National Dust Control Regulations of February 2014. Measures to control noise (S34) - no regulations promulgated yet.<br><br>No permitting or licensing requirements arise from this legislation. However, National, provincial and local ambient air quality standards (S9 - 10 & S11) to be considered.<br><br>Measures in respect of dust control (S32) and the National Dust Control Regulations of February 2014. | Department of Environmental Affairs | 2004 |

## 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? | Could not be determined at this stage $m^3$ | |

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

| |
|---|
| Construction rubble/ solid waste will be temporarily stored on site in designated waste skips and then removed by an appropriate waste contractor appointed by the main construction contractor to an approved landfill site. This will be managed through the EMPr. Should any hazardous waste be produced, it shall be disposed of appropriately at a registered waste disposal site. Records of the type and quantity of waste disposed of at the waste disposal site will be kept on site. |

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

| |
|---|
| General waste removed from site will be disposed of at the Goudkopies landfill site in Devland which is the nearest registered landfill. Safe disposal certificates must be obtained and kept on site for the duration of the construction phase. |

| Will the activity produce solid waste during its operational phase? | **YES** ✔ | NO |
|---|---|---|

| If YES, what estimated quantity will be produced per month? | Unknown $m^3$ |
|---|---|

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

| |
|---|
| Waste produced during the operational phase will be primarily from maintenance and domestic waste from employees (site security guards and other). Waste produced will be managed according to the requirements of the EMPr, which will include proper disposal of waste at a registered site as well as recycling were feasible. A record of waste generated and disposed of will be kept and managed accordingly to encourage waste reduction. |

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

| |
|---|
| Goudkopies landfill site in Devland. |

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

| |
|---|
| Waste that does not fit into the municipal waste stream will be disposed of at a registered hazardous waste disposal site while recyclable and reusable will be treated as such. |

*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? | YES | **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? | YES | **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? | YES | **NO✔** |

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

| Will the activity produce effluent that will be treated and/or disposed of at another facility? | YES | **NO✔** |
|---|---|---|

If YES, provide the particulars of the facility:

| | | | |
|---|---|---|---|
| **Facility name:** | | | |
| **Contact person:** | | | |
| **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:

| |
|---|
| |

**c) Emissions into the atmosphere**

| | | |
|---|---|---|
| Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities? | YES | 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 of Taunus Diepkloof powerline and associated substations, dust and vehicular emissions are expected to 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✔ |

Describe the noise in terms of type and level:

| |
|---|
| Short term noise impacts are anticipated during the construction phase of the project for Taunus Diepkloof power line and associated substations.<br><br>It is however, anticipated that the noise will be localised and contained within the construction site and its immediate surroundings. No noise will be generated during the operational phase of the development. |

## 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.

Note: A Water Use License Application will be submitted to Department of Water Affairs and Sanitation (DWS) after the Basic Assessment Report (this report) has been reviewed and the project granted Environmental Authorisation by DEA.

## 14. ENERGY EFFICIENCY

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

| |
|---|
| N/A |

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

| |
|---|
| N/A |

## 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 Band indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

| **A – Primary Alignment and Deviation 1** |
|---|

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 ✔ | NO |
|---|---|

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

**Property description/physical address:**

| | |
|---|---|
| **Province** | Gauteng Province |
| **District Municipality** | City of Johannesburg Metropolitan Municipality and West Rand District Municipality |
| **Local Municipality** | City of Johannesburg Metropolitan Municipality and Westonaria Local Municipality |
| **Ward Number(s)** | City of Johannesburg Metropolitan Municipality: Ward 24, 25, 28, and 30.<br>Westonaria Local Municipality: Ward 16 |
| **Farm name and number** | Zuurbekom 297-IQ Portion: 1,15,38,39,40,41,R,76,79.<br><br>RivasdalePortion: 1,2,3,4,5,6,7,8,9,10,11,12,13,14,29,30,31,32,33,34,35,50,51,52,95,96,97,112,113,114,158,159,174,203,204.<br><br>Klipriviersoog 299-IQ Portion: 16,21,30,42,43,53,57,58,88,90,96,100,115,208,209,212,224.<br><br>Klipriviersoog Estate Portion: 7<br>Misgund 322-IQ Portion: 3,5,127<br>Devland EXT.1 Portion: 181,187,221,236,250,277,292<br>Devland EXT.27 Portion: 1118,1119,11120<br>Olifantsvlei 316-IQ Portion: 2,32<br>Diepkloof 319-IQ Portion: 16,24,134,153<br>DiepklooF EXT.4 Portion: 24792,24793<br>Diepkloof Portion: 24097<br>Goldev 449-IQ Portion: 449-IQ<br>Lenasia EXT.13 Portion:12214,12215<br>Goudkoppie 317-IQ Portion: 317-IQ<br>Rietfontein 301-IQ Portion: 129<br>Panvlakte 291-IQ Portion: R,1<br>Waterpan 292-IQ Portion: 1,32<br>Syferfontein 293-IQ Portion: R<br>West Rand AH Portion: 551<br><br>(Please refer to **Appendix J2** for the full list of farm names and portion numbers) |
| **Portion number** | Please see above |
| **SG Code** | Please refer to **Appendix J2** for the full list of SG Codes along with affected properties map. |

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, Open space, Residential, Business, Industrial, Municipal and Commercial |

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

**Power lines**
Indicate the general gradient of the site.

**Alternative S1: (Primary Alignment-Proposed)**

| 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 S2 (Deviation 1):**

| 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

**Power lines**

**(Primary Alignment-Proposed) and Deviation 1**
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 | |
| 2.10 At sea | | | | | |

## 3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

**Power lines**

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

| | **Alternative S1 (Primary Alignment): Proposed** | | **Alternative S2 (Deviation 1):** | | Alternative S3 | |
|---|---|---|---|---|---|---|
| Shallow water table (less than 1.5m deep) | YES ✔ | NO | YES | NO✔ | YES | NO |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Dolomite, sinkhole or doline areas | YES ✔ | NO | | YES ✔ | NO | | YES | NO |
| Seasonally wet soils (often close to water bodies) | YES ✔ | NO | | YES | NO✔ | | YES | NO |
| Unstable rocky slopes or steep slopes with loose soil | YES | NO ✔ | | YES | NO✔ | | 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%) | YES | NO ✔ | | YES | NO✔ | | YES | NO |
| Any other unstable soil or geological feature | YES | NO ✔ | | YES | NO✔ | | YES | N |
| An area sensitive to erosion | YES ✔ | NO | | YES | NO✔ | | 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.

## 4. GROUNDCOVER

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).

**Power lines**

**Primary Alignment (Proposed)**

| | | | | |
|---|---|---|---|---|
| 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✔ |

**Deviation 1**

| | | | | |
|---|---|---|---|---|
| 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.

## 5. SURFACE WATER

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

**Primary Alignment (Proposed)**

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

**Deviation 1**

| | | | |
|---|---|---|---|
| Perennial River | YES | NO✔ | UNSURE |
| Non-Perennial River | YES | NO✔ | UNSURE |
| Permanent Wetland | YES | NO✔ | UNSURE |
| Seasonal Wetland | YES | NO✔ | UNSURE |
| Artificial Wetland | YES | 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.

According to the wetland specialist report, six wetland areas were found to intersect with the proposed power line between the Taunus substation and the existing Diepkloof substation. One of the wetlands found on the Primary Alignment route is found to be a very important regional wetland which form part of the Critically Endangered Klip River Grassland ecosystem. Large areas of this wetland is still intact (seasonal and temporary zones present) with *Phragmitesaustralis* although downstream study area included extensive canalisation and collapse of the stream bank. The wetland specialist also found that Alternative alignment one (Deviation 1) does not cross any wetlands and is therefore favourable.

## 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:

**Power lines**
**Primary Alignment (Proposed) and Deviation 1**

| | | |
|---|---|---|
| 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 | 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? Specify and explain:

**Power lines**
**Primary Alignment (Proposed)and Deviation 1**

A railway line has been identified that interacts with the Primary Alignment. The Primary Alignment will cross the railway line at the western side of West Rand Agricultural Holdings and will run parallel at the extent of between the R558 and the Lenasia golf course. No intense impacts are anticipated. Eskom shall notify Transnet and/or PRASA prior commencing work that will affect the railway.

The N12 motor way is within 500 m of the Primary Alignment, slight traffic delays can be anticipated by construction vehicles during the stringing of the line during the construction period. Motorists travelling on the local network and specifically the N12 Highway, will have an intermittent visual experience of the power line and will be most aware of its presence when it crosses the route they travel on. Their visual exposure will be of a very short duration but frequent motorists will be exposed to the impact regularly, thereby increasing the viewer incidence.

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:

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:

**Power lines**
**Primary Alignment (Proposed) and Deviation 1**

A BP filling station is present to the south of the R553 crossing. No intense impacts are anticipated during the construction and operation of the power line.

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

**Primary Alignment (Proposed)**

| | | |
|---|---|---|
| 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✔ |

**Deviation 1**

| | | |
|---|---|---|
| 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.

## 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 | |
| Two ruins of what might have been farm labourer homesteads. Bricks and cement bricks were used in construction of possible two and three structure features respectively. No information on its date of construction is known. A detailed Heritage Impact Assessment report is attached as **Appendix D3** | | |

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:

| |
|---|
| N/A |

| | | |
|---|---|---|
| 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

### 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:

**City of Johannesburg Metropolitan Municipality:**The unemployment level in the City of Joburg municipality is at 23.1% in 2010/11. Regional analysis shows that Region D had thehighest level of unemployment (42.7%) followed by Regions G (28.1%), F (26.2%) and A (15.7%).Regions E, B and C have the lowest rates of unemployment at 2.3%, 9.2% and 11.7% respectively (City of Johannesburg 2012/16 IDP).

**Westonaria Local Municipality:**
In 2011 the unemployment rate in the Westonaria Local Municipality was at 29.5%

Economic profile of local municipality:

**City of Johannesburg Metropolitan Municipality:**The city of Johannesburg is the commercial and economic hub of South Africa and contributes 47%of the provincial economy. Growth Value Added (GVA) is a reflection of economic growth activitywith the City achieving a fairly high GVA growth prior to 2007. Between 2007 and 2009 this growth dipped – a clear indication of the global economic crisis at the time. Recent projected figures anticipate GVA growth for the City of Johannesburg reaching 4.5% by 2014 (City of Johannesburg 2012/16 IDP).Some 25% of Johannesburg residents live in abject poverty (largely in the southern part of the City), and in informal settlements that lack proper roads or electricity or any kind of direct municipal services. Another 40% live in inadequate housing, with insufficient municipal services. The poor are largely black (72%), earning less than R25 000 per annum (City of Johannesburg Economic Development, 2008).

**Westonaria Local Municipality:**
According to the Westonaria Local Municipality IDP 2014/15, 28% of employed people are employed by the formal sector, while the informal sector accounts for 8% in 2011. Households who earn between R38 201 - R76 400 are at 20.2% in 2011 which is the largest percentage, while those that earn R4 801 – R9 600 are at 7.8%.

Level of education:

**City of Johannesburg Metropolitan Municipality:**
The legacy of apartheid still characterises levels of education across the racial groups with the Black population still showing lower levels of education particularly in the matric and tertiary education categories (City of Johannesburg Economic Development, 2008). Currently, 34,7% of the total population (age 20+) in Johannesburg have received a senior certificate and 19,2% have received higher education (Stats SA).

**Westonaria Local Municipality:**

Distribution of population aged 20 years and older by level of education attained & gender

| | 2011 | | |
|---|---|---|---|
| | **Male** | **Female** | **Total** |
| **No schooling** | 2702 | 1963 | 5665 |
| **Some primary** | 7277 | 4263 | 11540 |
| **Complete Primary** | 3024 | 2101 | 5125 |
| **Some secondary** | 17028 | 13243 | 30271 |
| **Std 10/Grade 12** | 10958 | 8850 | 19808 |
| **Higher** | 2103 | 1905 | 4008 |
| **Total** | **43094** | **32324** | **75418** |
| | | | |

**b) Socio-economic value of the activity**

| | | |
|---|---|---|
| What is the expected capital value of the activity on completion? | Unknown at this stage | |
| What is the expected yearly income that will be generated by or as a result of the activity? | Unknown at this 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 at this stage | |
| What is the expected value of the employment opportunities during the development and construction phase? | Unknown at this stage | |
| What percentage of this will accrue to previously disadvantaged individuals? | Unknown at this stage | |
| How many permanent new employment opportunities will be created during the operational phase of the activity? | Unknown at this stage | |
| What is the expected current value of the employment opportunities during the first 10 years? | Unknown, these assessments are done late in the process, during construction and operational phase | |
| What percentage of this will accrue to previously disadvantaged individuals? | Unknown, these assessments are done late in the process, during construction and operational phase | |

**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) Indicatethe 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) | The vegetation specialist indicated that as per the Gauteng Conservation Plan (C-plan), Critical Biodiversity Area: Important areas, as well as Ecological Support Areas (ESAs) are present along the eastern extent of the proposed powerline route.<br>It must be noted that ESAs provide vital connections between areas of high or critical biodiversity importance and are therefore not necessarily good condition or primary vegetation; nonetheless it plays an important role in maintaining biodiversity.<br>Overall, as per the Gauteng Conservation Plan (C-plan), CBA: Important areas, as well as Ecological Support Areas (ESAs) are present along the eastern extent of the proposed powerline route. The Important areas are set aside as it likely comprises primary vegetation and include sensitive landscape features such as wetlands. ESAs provide vital connections between areas of high or critical biodiversity importance and are therefore not necessarily good condition or primary vegetation, nonetheless it plays an important role in maintaining biodiversity. These areas also coincide with the Klipriviersberg Highveld Grassland Ecosystem. A portion of the proposed powerline will traverse the Olifantsvlei Municipal Nature Reserve, under the management of City of Johannesburg Metropolitan Municipality. Also, a small portion of the Kliprivierberg which is classified as a Class 3 ridge will be traversed. These ridges provide habitat for a wide variety of faunal and floral species. |
| | | | | |
| | | | | |

**b) Indicateand describe the habitat condition on site**

| Habitat Condition | Percentage of habitat | Description and additional Comments and Observations |
|---|---|---|

| | condition class (adding up to 100%) | (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc). |
|---|---|---|
| Natural | 2% | Very little or no pure natural habitat conditions were observed. |
| Near Natural (includes areas with low to moderate level of alien invasive plants) | 8% | Due to the transformed state of this group, a high number of alien invasive species were recorded. |
| Degraded (includes areas heavily invaded by alien plants) | 30% | Some historically cultivated land with red soils were observed south of the N12 on the western portion of the Tanus-Diepkloof 132 kV line. The vegetation specialist indicated that at the time of the site visit, the grass cover was poor, consisting mainly of the pioneer species Cynodondactylon (couch grass). The forb layer was dominated by the weed Tagetesminuta (khaki weed). |
| Transformed (includes cultivation, dams, urban, plantation, roads, etc) | 60% | Historic aerial images (Google Earth, 2015), as well as topographic maps indicated that cultivation took place within grasslands along western and half of the southern portion of the Taunus-Diepkloof 132kV line. Other transformations are evident in the majority of the proposed powerline route in the form of built up areas, service infrastructure, roads, etc.<br><br>Large parcels of land were historically ploughed and planted as pasture. The pasture comprised Eragrostiscurvula. Within the Eragrostis-pasture, indigenous grasses such as Hyparrheniahirta (common thatching grass) were also recorded, with a limited number of indigenous forbs that colonised the pasture. Invasive weeds included Tagetesminuta (khaki weed) and Bidenspilosa (black jack). |

**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 unchanneled wetlands, flats, seeps pans, and artificial wetlands) | | | Estuary | | Coastline | |
| | Endangered ✔ | | | | | | | |
| | Vulnerable✔ | | | | | | | |
| | Least Threatened | YES✔ | NO | UNSURE | YES | NO✔ | YES | NO ✔ |

**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 majority of the proposed powerline and substation localities are situated in the Grassland Biome. The Grassland Biome experience summer rainfall and dry winters with frost (and fire), which are unfavourable to tree growth. Therefore, grasslands comprise mainly of grasses and plants with perennial underground storage organs, for example bulbs and tubers and *suffrutex* species. In some grassland areas, the surface topography (e.g. rocky hills and protected valleys) creates habitats that are favourable to shrublands and trees. The Grassland Biome comprises a number of vegetation types of which three (3) types (Soweto Highveld Grassland, Tsakane Clay Grassland and Carletonville Dolomite Grassland) are traversed by the proposed power line route. The proposed Substation 1 locality, as well as the two alternatives for Substation 2, are proposed to be situated within the same Carletonville Dolomite Grassland vegetation type.

The proposed powerline also transveres the Andesite Mountain Bushveld and Eastern Temperate Freshwater Wetland that are found in the Savanna and Azonal Biomes respectively. The Andesite Mountain Bushveld comprises of dense, medium-tall thorny bushveld with a well-developed grass layer on hill slopes – undulating landscape while the Eastern Temperate Freshwater Wetland occurs in flat landscapes or shallow depressions filled with water. The water bodies contain aquatic zones and outer parts with hygrophilous vegetation of temporary flooded grasslands in which the Kliprivier flood plain is situated.

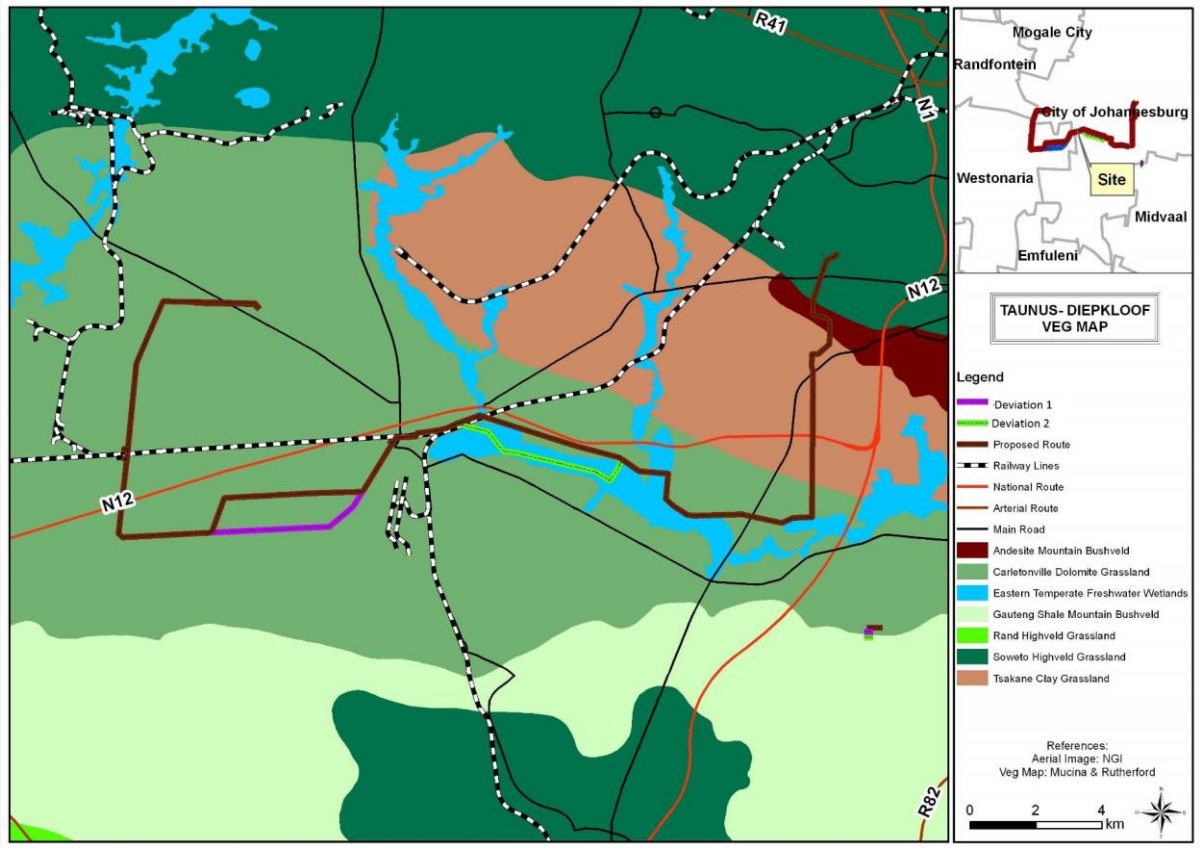


**Figure 4:**National vegetation types that are traversed by the proposed 132 Taunus-Diepkloof powerline route.

It must be noted that the Soweto Highveld Grassland, Tsakane Clay Grassland and Eastern Temperate Freshwater Wetland are classified as being endangered. The Carletonville Dolomite Grassland and Andesite Mountain Bushveld are classified as being vulnerable and least threatened respectively.

Section B Copy No. (e.g. A): **B – Deviation 2**

**Power line Alternative. This power line occurs slightly**

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 ✔ | NO |
|---|---|

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** | Gauteng Province |
| **District Municipality** | City of Johannesburg Metropolitan Municipality |
| **Local Municipality** | City of Johannesburg Metropolitan Municipality |
| **Ward Number(s)** | Ward 10 |
| **Farm name and number** | Klipriviersoog 299-IQ Portion: RE/19,RE/21,RE/30,96,100,115,209<br><br>Lenasia EXT 13 Portion: 12214,12215 |
| **Portion number** | Please refer above |
| **SG Code** | Please refer to **Appendix J2** for the full list of SG Codes along with affected properties map. |

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:**

| |
|---|
| River, Wetland, Recreation, Open space |

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.

**Deviation 2:**

| | | | | | | |
|---|---|---|---|---|---|---|
| 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 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 |

## 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 | |
| 2.10 At sea | | | | | |

## 12. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

| | **Deviation 2:** | | Alternative S2 (if any): | | Alternative S3 (if any): | |
|---|---|---|---|---|---|---|
| Shallow water table (less than 1.5m deep) | YES ✔ | NO | YES | NO | YES | NO |
| Dolomite, sinkhole or doline areas | YES | NO ✔ | YES | NO | YES | NO |
| Seasonally wet soils (often close to water bodies) | YES ✔ | NO | YES | NO | YES | NO |
| Unstable rocky slopes or steep slopes with loose soil | YES | NO ✔ | YES | NO | 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%) | YES | NO ✔ | YES | NO | YES | NO |
| Any other unstable soil or geological feature | YES | NO ✔ | YES | NO | YES | NO |
| An area sensitive to erosion | YES ✔ | NO | YES | NO | 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. GROUNDCOVER

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 |

Deviation 2 travels for approximately 5 km along the middle ofthe flood plain section of the Kliprivier wetland that lies north of Lenasia. There is a golf course present on this alignment. This area is characterised by a well-defined stream channel, gently sloped and characterized by floodplain features such as oxbow depressions andnatural levees and the alluvial (by water) transport and deposition ofsediment, usually leading to a net accumulation of sediment.

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 | YES✔ | NO | UNSURE |
| Non-Perennial River | YES | NO✔ | UNSURE |
| Permanent Wetland | YES✔ | NO | UNSURE |
| Seasonal Wetland | YES | NO✔ | UNSURE |
| Artificial Wetland | YES | 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.

| |
|---|
| According to the wetland specialist report, six wetland areas were found to intersect with the proposed powerline between the Taunus substation and the existing Diepkloof substation. One of the wetlands on which Deviation 2 travels in the middle of, is a Very Important regional wetland which forms part of the Critically Endangered Klip River Grassland ecosystem which is the habitat for red and orange listed plants and birds and also red and orange listed or priority invertebrates. Large areas of the wetland is still intact (seasonal and temporary zones present) with Phragmitesaustralis although downstream study area included extensive canalisation and collapse of the stream bank. The wetland is however impacted on by mining pollution, sewage, increased stormwater from urban and informal settlement areas, trampling -humans & animals (grazing), hard surfaces, exotic vegetation |

## 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 |
| 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? Specify and explain:

| |
|---|
| N/A |

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:

| |
|---|
| N/A |

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 | |
| N/A | | |

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:

| |
|---|
| N/A |

| | | |
|---|---|---|
| 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:

| |
|---|
| **City of Johannesburg Metropolitan Municipality:** The unemployment level in the City of Joburg municipality is at 23.1% in 2010/11. Regional analysis shows that Region D had the highest level of |

unemployment (42.7%) followed by Regions G (28.1%), F (26.2%) and A (15.7%).Regions E, B and C have the lowest rates of unemployment at 2.3%, 9.2% and 11.7% respectively (City of Johannesburg 2012/16 IDP).

Economic profile of local municipality:

**City of Johannesburg Metropolitan Municipality:** The city of Johannesburg is the commercial and economic hub of South Africa and contributes 47%of the provincial economy. Growth Value Added (GVA) is a reflection of economic growth activity with the City achieving a fairly high GVA growth prior to 2007. Between 2007 and 2009 this growth dipped – a clear indication of the global economic crisis at the time. Recent projected figures anticipate GVA growth for the City of Johannesburg reaching 4.5% by 2014 (City of Johannesburg 2012/16 IDP). Some 25% of Johannesburg residents live in abject poverty (largely in the southern part of the City), and in informal settlements that lack proper roads or electricity or any kind of direct municipal services. Another 40% live in inadequate housing, with insufficient municipal services. The poor are largely black (72%), earning less than R25 000 per annum (City of Johannesburg Economic Development, 2008).

Level of education:

**City of Johannesburg Metropolitan Municipality:**
The legacy of apartheid still characterises levels of education across the racial groups with the Black population still showing lower levels of education particularly in the matric and tertiary education categories (City of Johannesburg Economic Development, 2008). Currently, 34,7% of the total population (age 20+) in Johannesburg have received a senior certificate and 19,2% have received higher education (Stats SA).

**b) Socio-economic value of the activity**

| | | |
|---|---|---|
| What is the expected capital value of the activity on completion? | Unknown at this stage | |
| What is the expected yearly income that will be generated by or as a result of the activity? | Unknown at this 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 at this stage | |
| What is the expected value of the employment opportunities during the development and construction phase? | Unknown at this stage | |
| What percentage of this will accrue to previously disadvantaged individuals? | Unknown at this stage | |
| How many permanent new employment opportunities will be created during the operational phase of the activity? | Unknown at this stage | |

| | |
|---|---|
| What is the expected current value of the employment opportunities during the first 10 years? | Unknown, these assessments are done late in the process, during construction and operational phase |
| What percentage of this will accrue to previously disadvantaged individuals? | Unknown, these assessments are done late in the process, during construction and operational phase |

## 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) | The vegetation specialist indicated that as per the Gauteng Conservation Plan (C-plan), Critical Biodiversity Area: Important areas, as well as Ecological Support Areas (ESAs) are present along the eastern extent of the proposed power line route of which Deviation 2 is a part of.<br>It must be noted that ESAs provide vital connections between areas of high or critical biodiversity importance and are therefore not necessarily good condition or primary vegetation; nonetheless it plays an important role in maintaining biodiversity.<br>The Deviation 2 area is characterised by a well-defined stream channel, gently sloped and characterized by floodplain features such as oxbow depressions and natural levees and the alluvial (by water) transport and deposition of sediment, usually leading to a net accumulation of sediment. This wetland area can be classified as Moist Grassland, of which is of high sensitivity, taking into account that the vegetation is important in maintaining the functionality thereof and that all watercourses are protected by national legislation. The moist grassland is also situated within an Important area of the Gauteng C-plan. Although vegetation associated with some of the moist grasslands were disturbed with a degree of alien vegetation, the vegetation is highly functional in preventing soil erosion and degradation of surrounding vegetation, as well as downstream watercourses. |

**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 | 70% | The majority of the Deviation 2 route is underlain by Moist Grassland, of which is of high sensitivity, taking into account that the vegetation is important in maintaining the functionality thereof and that all watercourses are protected by national legislation. The moist grassland is also situated within an Important area of the Gauteng C-plan. Although vegetation associated with some of the moist grasslands were disturbed with a degree of alien vegetation, the vegetation is highly functional in preventing soil erosion and degradation of surrounding vegetation, as well as downstream watercourses.<br><br>Large areas of wetland is still intact (seasonal and temporary zones present) with *Phragmitesaustralis.* The wetland is regionally impacted upon by mining pollution, sewage, increased stormwater from urban and informal settlement areas, trampling -humans & animals (grazing), hard surfaces, exotic vegetation. |
| Near Natural (includes areas with low to moderate level of alien invasive plants) | 20% | Moderate levels of alien invasive plants can be found within in the golf course area of which Deviation 2 transverses. The Giant Reed *Arundodonax*, invasive plant species were recorded. |
| Degraded (includes areas heavily invaded by alien plants) | 2% | Very little evidence of degraded conditions found. |
| Transformed (includes cultivation, dams, urban, plantation, roads, etc) | 8% | A golf course is noted on the western extent of Deviation 2 of which is bordered to the east by the R554. There is a small unnamed informal settlement on the northern banks of the Klip River comprising of less than five (5) dwellings. |

**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✔<br>Endangered ✔<br>Vulnerable✔<br>Least Threatened | Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands) | | | Estuary | | Coastline | |
| | | YES✔ | NO | UNSURE | YES | NO✔ | YES | NO ✔ |

**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 vegetation specialist indicated that as per the Gauteng Conservation Plan (C-plan), Critical Biodiversity Area: Important areas, as well as Ecological Support Areas (ESAs) are present along the eastern extent of the proposed power line route of which Deviation 2 is a part of.

It must be noted that ESAs provide vital connections between areas of high or critical biodiversity importance and are therefore not necessarily good condition or primary vegetation; nonetheless it plays an important role in maintaining biodiversity.

The Deviation 2 area is characterised by a well-defined stream channel, gently sloped and characterized by floodplain features such as oxbow depressions and natural levees and the alluvial (by water) transport and deposition of sediment, usually leading to a net accumulation of sediment. This wetland area can be classified as Moist Grassland, of which is of high sensitivity, taking into account that the vegetation is important in maintaining the functionality thereof and that all watercourses are protected by national legislation. The moist grassland is also situated within an Important area of the Gauteng C-plan. Although vegetation associated with some of the moist grasslands were disturbed with a degree of alien vegetation, the vegetation is highly functional in preventing soil erosion and degradation of surrounding vegetation, as well as downstream watercourses.

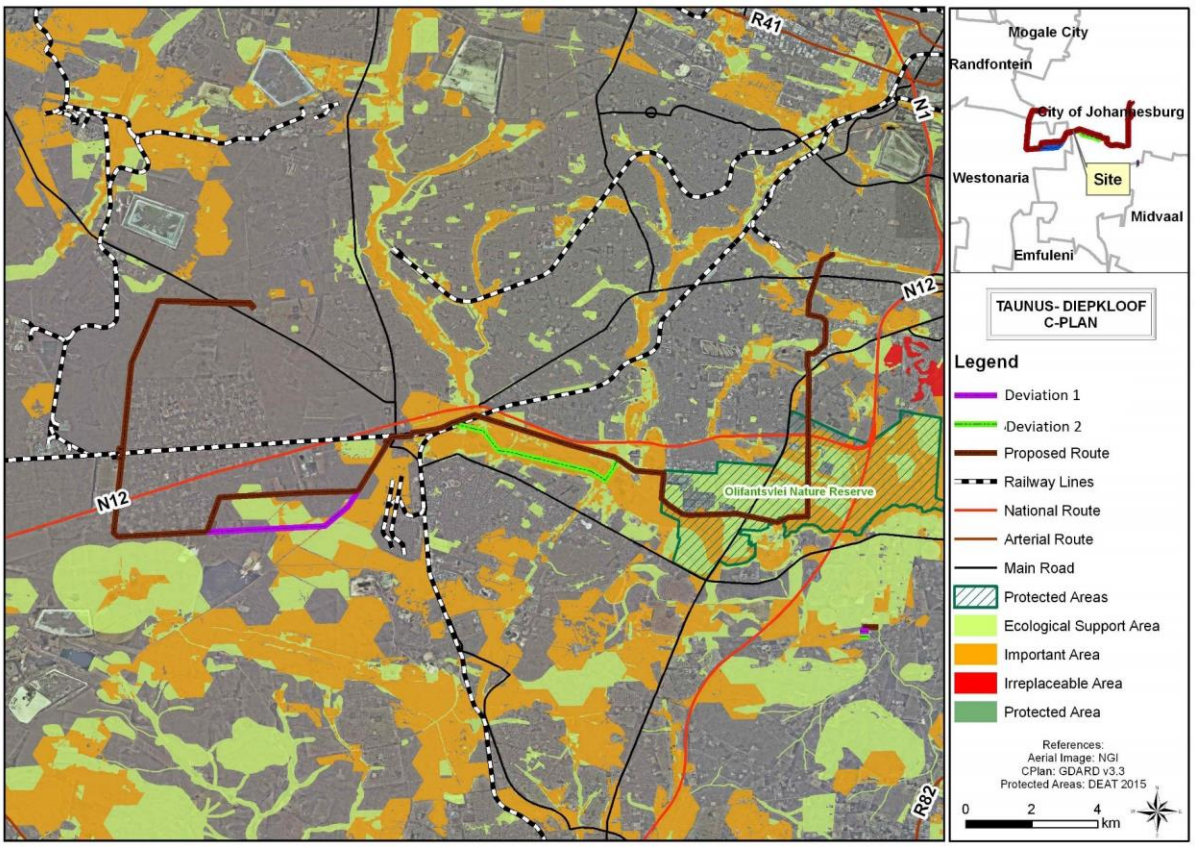


**Figure 5:**The proposed power line development in relation to the Gauteng Conservation plan (GDARD, 2011).

The above figure indicates how Deviation 2 transverses an important area. This area is also classified as a Critical Area.

Section B Copy No. (e.g. A): **Substation 1 and 2**

**Note: Substation 1 and Substation 2 are approximately 7 km apart and are situated in a similar receiving environment and will thus be assessed collectively.**

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

7. Has a specialist been consulted to assist with the completion of this section?

| YES ✔ | NO |
|---|---|

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** | Gauteng Province |
| **District Municipality** | West Rand District Municipality |
| **Local Municipality** | Westonaria Local Municipality |
| **Ward Number(s)** | Ward 16 |
| **Farm name and number** | Zuurbekom 297-IQ Portion: 1,38<br><br>(Please refer to **Appendix J2** for the full list of farm names and portion numbers) |
| **Portion number** | Please see above |
| **SG Code** | T0IQ00000000029700001<br>T0IQ00000000029700038 |

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, Residential, Municipal. |

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✔ |
|---|---|

## 19. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Substation 1
**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 |

Alternative S2 (

| | | | | | | |
|---|---|---|---|---|---|---|
| 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 |

Substation 2
**Alternative Site A (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 |

**Alternative Site B S2**

| | | | | | | |
|---|---|---|---|---|---|---|
| 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 |

## 20. LOCATION IN LANDSCAPE

**All Substations**

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 | |
| 2.10 At sea | | | | | |

## 21. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

| | **All three Substation sites** | | Alternative S2 (if any): | | Alternative S2 (if any):) | |
|---|---|---|---|---|---|---|
| Shallow water table (less than 1.5m deep) | YES | NO ✔ | YES | NO | YES | NO |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Dolomite, sinkhole or doline areas | YES ✔ | NO | | YES | NO | | YES | NO |
| Seasonally wet soils (often close to water bodies) | YES | NO ✔ | | YES | NO | | YES | NO |
| Unstable rocky slopes or steep slopes with loose soil | YES | NO ✔ | | YES | NO | | 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%) | YES | NO ✔ | | YES | NO | | YES | NO |
| Any other unstable soil or geological feature | YES | NO ✔ | | YES | NO | | YES | NO |
| An area sensitive to erosion | YES | NO ✔ | | YES | NO | | 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.

## 22. GROUNDCOVER

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).

**Substation 1**

| | | | | |
|---|---|---|---|---|
| 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 |

**Substation 2 (Alternative Site A and Alternative Site B)**

| | | | | |
|---|---|---|---|---|
| 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.

## 23. SURFACE WATER

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

**Substation 1 and Substation 2 (Site Alternative A and Site Alternative B))**

| | | | |
|---|---|---|---|
| Perennial River | YES | NO✔ | UNSURE |
| Non-Perennial River | YES | NO✔ | UNSURE |
| Permanent Wetland | YES | NO✔ | UNSURE |
| Seasonal Wetland | YES | NO✔ | UNSURE |
| Artificial Wetland | YES | 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.

| |
|---|
| |
| |
| |
| |
| |
| |

## 24. 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:

**Substation 1**

| | | |
|---|---|---|
| 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 | 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) |

**Substation 2 Alternative A**

| | | |
|---|---|---|
| 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 | 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) |

**Substation 2 Alternative B**

| | | |
|---|---|---|
| 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 | 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? Specify and explain:

A railway line has been identified in close proximity with the Substation 2 alternatives. Substation Alternative B is closer to the railway. Eskom shall notify Transnet and/or PRASA prior commencing work that will affect the railway.

The N12 motor way is within 500 m of both the Substation 2 alternatives, slight traffic delays can be anticipated by construction vehicles turning into the substation site during the construction period. There will also be visual impacts for motor users of the N12 motorway especially if Substation 2 alternative 2 is selected. Motorists travelling on the N12 motorway, will have an intermittent visual experience of the substation.

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:

| |
|---|
| N/A |

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:

All three Substation Sites Substation 1 and Substation 2 **(Site Alternative A and Site Alternative B))**

| | | |
|---|---|---|
| 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.

## 25. 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 | |
| Two ruins of what might have been farm labourer homesteads, however these ruins are not within 500 m of the proposed substations. Bricks and cement bricks were used in construction of possible two and three structure features respectively. No information on its date of construction is known. A detailed Heritage Impact Assessment report is attached as **Appendix D3** | | |

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:

| |
|---|
| N/A |

| | | |
|---|---|---|
| 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.

## 26. 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:

**City of Johannesburg Metropolitan Municipality:** The unemployment level in the City of Joburg municipality is at 23.1% in 2010/11. Regional analysis shows that Region D had the highest level of unemployment (42.7%) followed by Regions G (28.1%), F (26.2%) and A (15.7%).Regions E, B and C have the lowest rates of unemployment at 2.3%, 9.2% and 11.7% respectively (City of Johannesburg 2012/16 IDP).

Economic profile of local municipality:

**City of Johannesburg Metropolitan Municipality:**The city of Johannesburg is the commercial and economic hub of South Africa and contributes 47%of the provincial economy. Growth Value Added (GVA) is a reflection of economic growth activitywith the City achieving a fairly high GVA growth prior to 2007. Between 2007 and 2009 this growthdipped – a clear indication of the global economic crisis at the time. Recent projected figuresanticipate GVA growth for the City of Johannesburg reaching 4.5% by 2014 (City of Johannesburg 2012/16 IDP). Some 25% of Johannesburg residents live in abject poverty (largely in the southern part of the City), and in informal settlements that lack proper roads or electricity or any kind of direct municipal services. Another 40% live in inadequate housing, with insufficient municipal services. The poor are largely black (72%), earning less than R25 000 per annum (City of Johannesburg Economic Development, 2008).

Level of education:

**City of Johannesburg Metropolitan Municipality:**
The legacy of apartheid still characterises levels of education across the racial groups with the Black population still showing lower levels of education particularly in the matric and tertiary education categories (City of Johannesburg Economic Development, 2008). Currently, 34,7% of the total population (age 20+) in Johannesburg have received a senior certificate and 19,2% have received higher education (Stats SA).

### b) Socio-economic value of the activity

| | | |
|---|---|---|
| What is the expected capital value of the activity on completion? | Unknown at this stage | |
| What is the expected yearly income that will be generated by or as a result of the activity? | Unknown at this 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 at this stage | |

| | |
|---|---|
| What is the expected value of the employment opportunities during the development and construction phase? | Unknown at this stage |
| What percentage of this will accrue to previously disadvantaged individuals? | Unknown at this stage |
| How many permanent new employment opportunities will be created during the operational phase of the activity? | Unknown at this stage |
| What is the expected current value of the employment opportunities during the first 10 years? | Unknown, these assessments are done late in the process, during construction and operational phase |
| What percentage of this will accrue to previously disadvantaged individuals? | Unknown, these assessments are done late in the process, during construction and operational phase |

## 27. 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)**

Both proposed substations fall outside any CBA or ESA areas.

| **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) | |
| | | | | |
| | | | | |

**b) Indicate and describe the habitat condition on site**

| **Habitat Condition** | **Percentage of habitat condition class (adding** | **Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries,** |
|---|---|---|

| | up to 100%) | grazing, harvesting regimes etc). |
|---|---|---|
| Natural | 2% | Very little or no pure natural habitat conditions were observed. |
| Near Natural (includes areas with low to moderate level of alien invasive plants) | 8% | Due to the transformed state of this area, a high number of alien invasive species were recorded. |
| Degraded (includes areas heavily invaded by alien plants) | 30% | Some historically cultivated land with red soils were observed south of the N12 on the western portion of the Tanus-Diepkloof 132 kV line of which included the location for Substation 2. The vegetation specialist indicated that at the time of the site visit, the grass cover was poor, consisting mainly of the pioneer species Cynodondactylon (couch grass). The forb layer was dominated by the weed Tagetesminuta (khaki weed). |
| Transformed (includes cultivation, dams, urban, plantation, roads, etc) | 60% | Historic aerial images (Google Earth, 2015), as well as topographic maps indicated that cultivation took place within grasslands along western and half of the southern portion of the Taunus-Diepkloof 132kV lineline of which included the location for Substation 1 and 2.<br><br>Large parcels of land were historically ploughed and planted as pasture (more especially Substation 1). The pasture comprised Eragrostiscurvula. Within the Eragrostis-pasture, indigenous grasses such as Hyparrheniahirta (common thatching grass) were also recorded, with a limited number of indigenous forbs that colonised the pasture. Invasive weeds included Tagetesminuta (khaki weed) and Bidenspilosa (black jack). |

**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 unchanneled wetlands, flats, seeps pans, and artificial wetlands) | | | Estuary | | Coastline | |
| | Endangered | | | | | | | |
| | Vulnerable | | | | | | | |
| | Least Threatened ✔ | YES | NO✔ | UNSURE | YES | NO✔ | YES | NO ✔ |

**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 majority of substation localities are situated in the Grassland Biome. The Grassland Biome experience summer rainfall and dry winters with frost (and fire), which are unfavourable to tree growth. Therefore, grasslands comprise mainly of grasses and plants with perennial underground storage organs, for example bulbs and tubers and suffrutex species. In some grassland areas, the surface topography (e.g. rocky hills and protected valleys) creates habitats that are favourable to shrublands and trees. The Grassland Biome comprises a number of vegetation types of which three (3) types (Soweto Highveld Grassland, Tsakane Clay Grassland and Carletonville Dolomite Grassland) are traversed by the proposed powerline route. The proposed Substation 1 locality, as well as the two alternatives for Substation 2 are proposed to be situated within the same Carletonville Dolomite Grassland vegetation type.

It must be noted that the Soweto Highveld Grassland, Tsakane Clay Grassland and Eastern Temperate Freshwater Wetland are classified as being endangered. The Carletonville Dolomite Grassland and Andesite Mountain Bushveld are classified as being vulnerable and least threatened respectively. However it must be noted that both the proposed substations fall outside of Gauteng C-Plan CBA or ESA

# SECTION C: PUBLIC PARTICIPATION

## 1. ADVERTISEMENT AND NOTICE

| **Publication name** | Sowetan Newspaper and Randfontein Herald Newspaper | |
|---|---|---|
| **Date published** | 05 November 2015 | |
| **Site notice position** | **Latitude** | **Longitude** |
| | 26°16.198'S | 27°46.829'E |
| | 26°15.985'S | 27°46.829'E |
| | 26°15.850'S | 27°45.062'E |
| | 26°17.547'S | 27°44.596'E |
| | 26°18.586'S | 27°44.483'E |
| | 26°19.737'S | 27°45.069'E |
| | 26°18.061'S | 27°48.720'E |
| | 26°19.547'S | 27°54.611'E |
| | 26°19.361'S | 27°54.230'E |
| | 26°18.037'S | 27°55.687'E |
| | 26°17.767'S | 27°55.564'E |
| | 26°16.049'S | 27°55.961'E |
| | 26°15.606'S | 27°55.813'E |
| | 26°15.146'S | 27°55.932'E |
| | 26°15.053'S | 27°55.961'E |
| | 26°15.09'S | 27°56.042'E |
| **Date placed** | 02 November 2015 | |

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 41(2)(e) and 41(6) of GN 733.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

| **Title, Name and Surname** | **Affiliation/ key stakeholder status** | **Contact details (tel number or e-mail address)** |
|---|---|---|
| Ms Carla Hudson | Wildlife and Environment Society of South Africa (WESSA) | info@wessanorth.co.za |
| Ms Girly Mbongwe | PRASA | gmbongwe@prasa.com |
| Ms Cynthia Nong | Transnet | Cynthia.Nong@transnet.net |
| Mr Alfred Levin | Township Realtors | alf@trsa.co.za |
| Ms Natalie Koneight | Rand Water | nkoneigh@randwater.co.za |
| Mr Bruce Van Der Heuvel | Sasol | vandenheuvel@sasol.com |
| Mr GrobieGrobler | Mid Vaal Water Company | grobbie@midvaalwater.co.za |
| Mr XoloMasondo | Bara Mall | masondo@conprop.co.za |
| | BP Gararge | 082 318 6083 |

| | | |
|---|---|---|
| Ms Tania Barbarovich | Cosmopolitan Projects (Pty) Ltd | taniab@cosmopro.co.za |
| Ms Janine Bothma | SANRAL | Bothmaj@nra.co.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 |
|---|---|
| Gift Mabasa<br>City of Johannesburg Metropolitan Municipality-<br><br>Noted. Please Kindly register the EISD of the COJ as an interested and affected part. Please send a hard copy of the report to the attention of the following officials, Nozipho Maduse and Siphokazi Ncume at 118 Jorrisen Str, Traduna building floor 6, Braamfontein. | Dear Gift,<br><br>This email serves to notify you that the EISD of the COJ has been registered as an interested and affected party on Envirolution's database for the mentioned project. Once completed the DBAR will be made available to the Department. |
| Tanya Barbarovich<br>Cosmopolitan Projects (Pty) Ltd –<br><br>Please register our company as Interested and Affected Party. | You have been registered on our project database and you will be kept informed of the progress of the project |
| Mr. Simon Ellenson<br>Olifantsvlei occupant –<br><br>I don't oppose this development; however, can you inform me if the power lines will transverse over my house? | For mostly safety reasons Eskom avoids traversing power lines over tall buildings and trees. |

| | |
|---|---|
| Mr. Simon Ellenson<br>Olifantsvlei occupant –<br><br>Att: Thabang Sekele<br><br>We are the occupants of farm Olifntsvlei 316IQ, the remaining portion after the now Olifantsvlei elementary development. We are farming with livestock – ie. cattle, pigs and goats.<br><br>We are not in opposition of the Taunus Diepkloof 132 kV power line, but would request more clarity as to where the power line will be erected in relation to the farming sheds, buildings and existing dwelling house.<br><br>Thank you also for clarifying the location of the sub-stations to be erected. | Thank you for your enquiry.<br><br>For mostly safety reasons Eskom avoids traversing power lines over tall buildings and trees. It must also be noted that before the construction of the power line begins, Eskom will conduct a final field survey to identify the existing ground situations and acquire servitude rights for the final position of the power line and also determine where they will place pylons. Financial compensation will be paid where applicable in acquiring servitude rights.<br><br>Kindly find the attached locality map of the proposed Taunus-Diepkloof power line to provide more clarity on the approximate route plan. |
| Mr Andrew Salomon<br>SAHRA: Heritage Officer –<br><br>Considering that no significant archaeological heritage resources occur within the study area, the SAHRA Archaeology, Paleontology and Meteorites (APM) Unit has no objections to this proposed development. | Comment noted. |
| Peleka Mashele<br>Rand Water: Pipeline Protection Manager –<br><br>Thanks for the Info. The other substation is about 12m away from our pipelines but then overall of it your proposal does affect Rand Water. | Noted. I will motivate that Eskom liaise with Rand Water before construction of the substation in order to protect the pipelines in the Final Basic Assessment Report. |

Although the position of Substation 2 Alternative A is approximately 12 m away from the Rand Water pipelines, it is advised that Eskom engage with Rand Water in regards to pipeline protection before construction.

## 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 |
|---|---|---|---|---|---|
| West Rand District Municipality. Environmental Department | Mr Musa Zwane | 011 411 5125 | | mzane@wrdm.gov.za | |
| Westonaria Local Municipality | Ms Tumi Rankulu | 011 411 5219/17 | | krankholu@wrdm.gov.za | |
| Department of Water Affairs and Sanitation ( DWAS) | Mr Vongani Mhinga | 012 392-1503 | 012 392 1486 | MhingaV@dwa.gov.za | |
| Department of Public Transport, Roads and Works | Mr Dennis Emmet | 012 326 2447 | | Dennis.emmet@gauteng.gov.za | |
| Gauteng Department of Agriculture & Rural Development | Mr Boniswa Belot | 011 355 1212 | | Boniswa.Belot@gauteng.gov.za | |
| Johannesburg Roads Agency | Ms Grace Lebepe | | | glebepe@jra.org.za | |
| SAHRA | Mr A Salomon | | | asalomon@sahra.org.za | |
| City of Joburg : Director: Environmental Impact Management, | Ms Nozipho Maduse (Lebo Molefe) | | | lebomol@joburg.org.za | |
| Westonaria Local Municipality | Mr Vusi Madi | 011 278 3143 | | vmadi@westonaria.gov.za | |
| Region D: Ward 24 | Cllr Willie Dlamini | 072 116 9712 | | williedh@joburg.org.za | |
| Westonaria | Ms Gladys Khoza | 011 411 5000 | | gkhoza@wrdm.gov.za | |

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

| Proof of notification is enclosed within **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.

| |
|---|
| A project database is enclosed within **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, 2014and 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 IDENTIFIEDIMPACTS ANDPROPOSED 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.

| **PLANNING AND DESIGN PHASE** | | | |
|---|---|---|---|
| **Activity** | **Impact summary** | **Significance** | **Proposed mitigation** |
| **Proposed Taunus Diepkloof powerline (Primary Alignment, Deviation 1, Deviation 2) and two substations** | | | |
| | ***Direct impacts:*** A direct impact as a result of good planning and design is protecting the environment but still providing a good product / service for the Krugersdorp area in terms of reliable electricity supply. | Positive Impact | The proposed Project implementation as well as suggested design measures and mitigation measures must be monitored. |
| | ***Indirect impacts:*** An indirect impact as a result of proper planning and design is saving on costs in the long term but also ensuring that the proposed Project has a better success rate and is more sustainable. | Positive Impact | The proposed Project implementation as well as suggested design measures and mitigation measures must be monitored. |
| | ***Cumulative impacts:***<br>None | N/A | N/A |

A summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the construction phase of the proposed power line and alternative route and expansion of the substation are provided below.

Primary Alignment and Deviation 1 occur in the same environment and will therefore be assessed together

| **Construction Phase: Primary Alignment and Deviation 1 -** Please also refer to the EMPr, Specialist assessments and Eskom's minimum standards for vegetation management and erosion control reports for details on other applicable mitigation measures. | | | | |
|---|---|---|---|---|
| **Activity** | **Impact summary** | **Significance rating of impacts: (without mitigation)** | **Proposed mitigation** | **Significance rating of impacts after mitigation:** |
| **1. Impacts on flora** | ***Direct impacts:***<br>• Clearing of and damage to vegetation in construction footprint for towers, access roads, construction camps, vehicle / machinery traffic, trampling by workers (stepping on small plants).<br>• Removal of vegetation in | **Medium** | 1. The work area (e.g. area to be disturbed) in the moist grassland and mountain bushveld must be kept to a minimum.<br>2. A pre-construction walk-through of the final power line route must be done to ensure that sensitive habitats are avoided and that species of conservation concern can be identified and relocated. The declining Boophone distichia must be relocated to suitable habitats outside of the | **Moderate to Low** |

| | | | | |
|---|---|---|---|---|
| | proximity to the moist grassland, without proper rehabilitation or failure of rehabilitation.<br><br>• Construction of the preferred route will destroy the one Boophonedistichia (poison bulb) individual. | | development footprint. The Provincial Authority must be consulted prior to removal and translocation of the species.<br>3. A temporary fence or demarcation must be erected around the construction area (include the servitude, construction camps, areas where material is stored and the actual footprint of the development) to prevent access to adjacent, vegetated environs.<br>4. Prohibit vehicular or pedestrian access into natural areas beyond the demarcated boundary of the construction area (particularly to the moist grassland).<br>5. No activities should take place during rainy events and at least 2 days afterwards.<br>6. Maintain site demarcations in position until the cessation of construction work.<br>7. Where possible, construction activities must be restricted to previously disturb (Secondary grasslands) and transformed areas.<br>8. Some pylons need to be places within the sensitive rocky grassland/moist grassland. However, all other construction | |

| | | | | |
|---|---|---|---|---|
| | | | related activities in these areas must be limited to absolutely necessary.<br>9. The Declining Boophonedistichia (poison bulb) should be relocated to suitable habitat outside of the disturbed footprint or within a substation locality where it can be monitored. This should be discussed with the GDARD, prior to removal.<br>10. The ECO should be notified if any bulbous species are uncovered. The species should be identified by a suitably qualified person, who will also advise to correct action to be taken.<br>11. After construction, the land must be cleared of rubbish, surplus materials, and equipment, and all parts of the land must be left in a condition as close as possible to that prior to construction. | |
| | ***Indirect impacts:***<br><br>• Soils will be exposed to erosion during rainfall events.<br>• Increased stormwater runoff.<br>• Loss of insect and other | **Medium** | As detailed above | **Low** |

| | | | | |
|---|---|---|---|---|
| | fauna habitat. | | | |
| | ***Cumulative impacts:***<br>• The clearance or loss of flora lessens the contribution to the ecosystem function.<br>• Increase in sedimentation of watercourses. | **VeryLow** | As detailed above | **Negligible** |
| **2. Impact on fauna** | ***Direct Impacts:***<br>• Lines and their supporting poles/pylons intrude into previously open space but have a small terrestrial footprint.<br>• Habitat loss and degradation by means of vegetation/tree clearance and heavy motor vehicle usage over the study site and adjacent land will expose the soils. It is predicted that can be ameliorated. | **Low** | 1. The contractor/contractors must ensure that no animals are disturbed, trapped, hunted or killed during the construction phase. Conservation-orientated clauses should be built into contracts for construction personnel, complete with penalty clauses for non-compliance.<br>2. As far as possible, restrict construction activities to the development site.<br>3. Education of the construction staff about the value of wildlife and environmental sensitivity. | **Very Low** |
| | ***Indirect Impacts:***<br>• Loss of conservation- | **Very Low** | As detailed above | **Negligible** |

| | | | | |
|---|---|---|---|---|
| | significant taxa and/or changes in community structure.<br><br>• Increased habitat fragmentation & loss of connectivity.<br><br>• Increased anthropogenic encroachment | | | |
| | ***Cumulative Impacts:***<br><br>• No loss of ecosystem function is anticipated. | **None** | As detailed above | **None** |
| **3. Impact on avifauna** | ***Direct Impacts:***<br><br>• Electrocutions of red data species<br>• Bird collisions, particularly red data species<br>• Habitat Destruction.<br>• Disturbance to breeding birds. | **Low** | 1. Installation of Double Loop Bird Flight Diverters five metres apart, alternating black and white.<br>2. The sections of the power line route indicated on the Sensitivity Map (see Appendix B) of the Avifaunal Report must be marked with Double Loop Bird Flight Diverters must be applied to the earth wire of the line, five meters apart, alternating black and white.<br>3. The construction activities must be strictly limited to the construction footprint.<br>4. Eskom's environmental guidelines for the construction of power lines, | **Very Low** |

| | | | | |
|---|---|---|---|---|
| | | | which is designed to minimise the impact on the environment must be adhered to. | |
| | ***Indirect Impacts:***<br><br>• A change of directions for birds<br>• Birds moving and settling away from construction areas.<br>• Noise from construction activities frightening the birds. | **Very Low** | As detailed above | **Negligible** |
| | ***Cumulative Impacts:***<br>In combination with other power lines and substation in the area, an additional barrier would be created for birds resulting in possible further displacement and or adjustment of flight paths for species that use the area as a flight corridor | **None** | N/A | N/A |
| **5. Impact on Wetlands and other water courses** | ***Direct Impacts:***<br><br>Changing the quantity and fluctuation properties of the watercourse. | **Medium** | 1. No activities should take place in the watercourses and associated buffer zone (30 m from the edge of the watercourse). Where the above is unavoidable, only the necessary footprint and additional access roads can be considered. This is subjected to authorization by means of a water use license. | **Low** |

| | | | | |
|---|---|---|---|---|
| | | | 2. Construction in and around watercourses must be restricted to the dryer winter months.<br>3. A temporary fence or demarcation must be erected around the works area to prevent access to sensitive environs. The works areas generally include the servitude, construction camps, areas where material is stored and the actual footprint of infrastructure.<br>4. Prevent pedestrian and vehicular access into the wetland and buffer areas.<br>5. Consider the various methods for stringing cables and select whichever method(s) that will have the least impact on watercourses.<br>6. Plan watercourse crossings to take place at pre-determined points such as where the wetland width (and thus area to be impacted) is the smallest.<br>7. Demarcate the wetlands and buffer zones to limit disturbance, clearly mark these areas as no-go areas.<br>8. Weed control in buffer zone.<br>9. Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant | |

| | | | | |
|---|---|---|---|---|
| | | | from activities within and adjacent to the construction camp and work areas.<br>10. After construction, the land must be cleared of rubbish, surplus materials, and equipment, and all parts of the land shall be left in a condition as close as possible to that prior to use. | |
| | ***Indirect Impacts:***<br><br>• Changing the amount of sediment entering water resource and associated change in turbidity (increasing or decreasing the amount)<br><br>• Alteration of water quality – increasing the amounts of nutrients (phosphate, nitrite, nitrate)<br><br>• Alteration of water quality – toxiccontaminants<br><br>• Changing the physical structure within a water resource (habitat) | **Medium** | As detailed above | **Low** |
| | ***Cumulative Impacts:*** | **Medium** | As detailed above | **Low** |

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| | Habitat and ecological degradation in the area. | | | |
| **6. Impact on soil** | ***Direct Impacts:***<br><br>The removal of surface vegetation, whether natural or disturbed, will expose the soils, which in rainy events could wash down into proximate moist grasslands, causing sedimentation. | **High** | 1. Do not allow erosion to develop on a large scale before taking action.<br>2. Where possible, no construction / activities should be undertaken within the moist grasslands. The extent of wetland conditions should be verified by a wetland specialist and no activities should take place within these areas without a Water Use License granted by the Department of Water and Sanitation (DWS) for these activities.<br>3. Make use of existing roads and tracks where feasible, rather than creating new routes through vegetated areas.<br>4. Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction / earthworks in that area.<br>5. Remove only the vegetation where essential for construction and do not allow any disturbance to the adjoining natural vegetation cover. The grassland can be removed as sods and re-established after construction is | **Low** |

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| | | | completed.<br>6. Colonisation of the disturbed areas by plants species from the surrounding natural vegetation must be monitored to ensure that vegetation cover is sufficient within one growing season. If not, then the areas need to be rehabilitated with a grass seed mix containing species that naturally occur within the study area.<br>7. Protect all areas susceptible to erosion (especially the sloped rocky grassland) and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction camp and work areas.<br>8. Existing access roads must be used where possible to avoid impacts on surrounding vegetation. Appropriate erosion control measures must be implemented. | |
| | ***Indirect Impacts:***<br><br>• Exposure of the soil to erosion and subsequent sedimentation of proximate moist grassland. | **Medium** | As detailed above | **Low** |

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| | • Seeds from proximate alien invasive plant species will spread easily into these eroded soils.<br>• Limited vegetation growth/cover<br>• Increased storm water run off | | | |
| | ***Cumulative Impacts***<br>• Potential degradation of wetlands.<br>• Habitat fragmentation of aquatic fauna. | **Low** | As detailed above | **Very Low** |
| **7. Noise Impacts** | ***Direct impacts:***<br>• Noise created by construction vehicles and machinery during construction activities. | **Low** | 1. Construction activities to be limited to office hours on weekdays as far as possible.<br>2. The contractor must ensure that noise levels remain within acceptable limits.<br>3. Prevent the generation of a disturbing or nuisance noises.<br>4. Ensure acceptable noise levels at surrounding stakeholders and potentially sensitive receptors.<br>5. Ensuring compliance with the Noise Control Regulations. | **Very Low** |

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| | | | 6. 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. No noise will be generated during the operational phase of the development. | |
| | ***Indirect impacts:***<br><br>• Noise may drive away fauna species that may potentially occur in the area. | **Medium** | As detailed above | **Low** |
| | ***Cumulative impacts:*** | **None** | None | **None** |

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| | None | | | |
| **8. Impacts on ground water** | ***Direct impacts:***<br><br>• Hydrocarbon leakages from plant vehicles and poor management of sources of hydrocarbon leaking to the ground. | **Medium** | 1. Construction vehicles are to be maintained in good working order, to reduce the probability of leakage of fuels and lubricants.<br>2. All cement mixing must occur on impervious surfaces and within controlled bermed areas.<br>3. Oil spillages must be treated with oil absorbent such as Drizit or similar and this material removed to a licensed waste disposal site.<br>4. Contractor/s must provide regularly serviced portable chemical toilets for construction workers ata distance no more than 200 m from the place of construction.<br>5. No materials may be discharged to watercourses and resources from the construction camps.<br>6. All hydrocarbons must be stored in a proper bunded facility. | **Low** |
| | ***Indirect impacts:***<br><br>• Leakages leading to pollute underground water resources.<br><br>• Contaminated soils | **Low** | As detailed above | **Very Low** |

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| | washing away to drainage lines and watercourses. | | | |
| | ***Cumulative impacts:***<br><br>• Polluted groundwater resources<br>Pollution in nearby watercourses. | **Very Low** | As detailed above | **Negligible** |
| **8. Impacts on storm water** | ***Direct impacts:***<br><br>Flooding and ponding of low level areas. | **Medium** | 1. A storm water management plan must be implemented during construction to prevent deterioration of the moist grasslands and the watercourses.<br>2. No stockpiles or construction materials may be stored or placed within any drainage lines that may be in close proximity of storm water drains.<br>3. No stockpiles or construction materials may be stored or placed in close proximity to storm water drains.<br>4. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required. | **Low** |
| | ***Indirect impacts:***<br><br>• Transporting of pollutants to watercourses and | **Low** | | **Very Low** |

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| | sensitive areas.<br>• Sediment runoff into watercourses and catchments. | | | |
| | ***Cumulative impacts:***<br><br>Degradation of the water quality of rivers and other water bodies. | **Medium** | | **Low** |
| **9. Impact on air quality** | ***Direct impacts:***<br><br>• The generation of dust from movement of Construction machinery and heavy vehicles. | **Medium** | 1. Continuous watering of the site should be carried out to prevent dust pollution during windy and dry condition.<br>2. A continuous dust monitoring process needs to be undertaken during construction.<br>3. Speed restriction of 20km/h must be implemented for all construction vehicles.<br>4. All vehicles transporting friable materials such a sand, rubble etc must be covered by a tarpaulin or wet down. | **Low** |
| | ***Indirect impacts:***<br><br>• Likely to generate dust which is likely travel and to be perceptible by adjacent residents. Trucks may potentially distribute dust along | **Low** | As detailed above | **Very Low** |

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| | internal access | | | |
| | ***Cumulative impacts:***<br><br>• Overall rise in dust levels around the study site. | **Very Low** | As detailed above | **Negligible** |
| **10. Impact on visual and aesthetic quality** | ***Direct impacts:***<br><br>Temporary presence of construction camps and material stockyards as well as disturbances and activities within and around the power line servitude and<br>the substation sites. | **Medium to Low** | 1. Locate construction camps and stock yards in the least visible areas.<br>2. Make use of the natural screening capacity of the site by placing these facilities in the lower lying areas of the study area or adjacent a dense vegetation patch with sufficient height to conceal these project components.<br>3. The screening capacity of the site can be temporarily enhanced through the erection of a 2 m high shade cloth fence around the construction camp and substation site during construction. The colour of the shade cloth should be similar to that of the adjacent vegetation, i.e. a light brown or green.<br>4. Keep the construction camp neat and tidy at all times. Remove any waste products from the site or contain it in an enclosed area out of the sight from viewers. | **Low** |

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| | | | 5. Retain as much of the existing vegetation as possible, specifically existing mature trees that contributes to the natural screening capacity of the study area. | |
| | ***Indirect impacts:***<br><br>None | **N/A** | **N/A** | **N/A** |
| | ***Cumulative impacts:***<br><br>None | **N/A** | **N/A** | **N/A** |
| **11. Health and Safety** | ***Direct impacts:***<br><br>Impacts/injuries to residents and construction workers 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.<br>2. Safety clothes and equipment must be worn at all times.<br>3. No fires are allowed at or around the construction site. The contractor must provide gas firedstoves and heaters to the workers. | **Low** |
| | ***Indirect impacts:*** | **N/A** | **N/A** | **N/A** |
| | ***Cumulative impacts:*** | **N/A** | **N/A** | **N/A** |
| **12. Impact on socio-economics** | ***Direct impacts:***<br><br>• The construction phase will provide direct | **Low positive** | **Proposed enhancement:**<br><br>1. A local employment policy to be adopted by the developer to | **Medium positive** |

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| | temporary employment for locals, and indirect employment through demand for construction materials, and support services, as well as empowerment and skills transfer opportunities. | | maximise the project opportunities being made available to the local community.<br>2. Contractor must opt to utilize local businesses as suppliers. | |
| | ***Indirect impacts:***<br>• Stimulation of local economy.<br>• Improved living conditions of locals. | **Low positive** | | **Medium positive** |
| | ***Cumulative impacts:***<br>• Increased economic activity and growth. | **Low positive** | | **Medium positive** |
| **13. Impacts on heritage resources** | ***Direct impacts:***<br>No impacts are expected on any cultural-historical aspects during the construction of the proposed development as no such features occur on site. It must also be noted that sometimes such features (such as graves) occur beneath ground and could accidentally be exhumed during earthworks. | **Very Low** | 1. Identified homestead ruins on site should be isolated by barricading the area with during construction of the power line.<br>2. Should any archaeological material or human remains be accidentally unearthed during the course of construction, the ECO on site should be informed, who will further contact an accredited archaeologist to assist with mitigation measures<br>3. Construction personnel must be | **Negligible** |

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| | | | alert and inform local Council should they come across any features of heritage value and must cease construction activities immediately.<br>4. No heritage feature can be removed, destroyed and/or interfered with on site without the permission of an accredited archaeologist. | |
| | ***Indirect impacts:***<br><br>None | **N/A** | **N/A** | **N/A** |
| | ***Cumulative impacts:***<br><br>None | **N/A** | None | **N/A** |
| **Operation Phase:** Impacts during the operational phase are expected to occur during maintenance and repairs of the Power lines. The following impacts are anticipated: | | | | |
| **1. Noise and dust pollution** | ***Direct impacts:***<br><br>Noise from moving vehicles and machinery and dust from plant/machinery eg. Moving Cherry pickers along the gravel access roads may occur during maintenance of the substation. | **Low** | 1. Dust suppression and wet spraying should be implemented.<br>2. Limit maintenance hours to daytime and weekday.<br>3. Ensure that noise levels are to an acceptable limit. | **Very Low** |
| | ***Indirect impacts:*** | None | None | None |

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| | None | | | |
| | ***Cumulative impacts:***<br><br>None | None | None | None |

| **Construction Phase: Deviation 2 -** Please also refer to the EMPr, Specialist assessments and Eskom's minimum standards for vegetation management and erosion control reports for details on other applicable mitigation measures. | | | | |
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| **Activity** | **Impact summary** | **Significance rating of impacts: (without mitigation)** | **Proposed mitigation** | **Significance rating of impacts after mitigation:** |
| **1. Impacts on flora** | ***Direct impacts:***<br><br>• Clearing of and damage to vegetation in construction footprint for towers, access roads, construction camps, vehicle / machinery traffic, trampling by workers (stepping on small plants).<br><br>• Removal of vegetation in proximity to the moist grassland, without proper rehabilitation or failure of | **Medium** | 1. The work area (e.g. area to be disturbed) in the moist grassland and mountain bushveld must be kept to a minimum.<br>2. A pre-construction walk-through of the final power line route must be done to ensure that sensitive habitats are avoided and that species of conservation concern can be identified and relocated. The declining Boophone distichia must be relocated to suitable habitats outside of the development footprint. The | **Moderate to Low** |

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| | rehabilitation.<br><br>• Construction of the preferred route will destroy the one Boophonedistichia (poison bulb) individual. | | Provincial Authority must be consulted prior to removal and translocation of the species.<br>3. A temporary fence or demarcation must be erected around the construction area (include the servitude, construction camps, areas where material is stored and the actual footprint of the development) to prevent access to adjacent, vegetated environs.<br>4. Prohibit vehicular or pedestrian access into natural areas beyond the demarcated boundary of the construction area (particularly to the moist grassland).<br>5. No activities should take place during rainy events and at least 2 days afterwards.<br>6. Maintain site demarcations in position until the cessation of construction work.<br>7. Where possible, construction activities must be restricted to previously disturb (Secondary grasslands) and transformed areas.<br>8. Some pylons need to be places within the sensitive | |

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| | | | rocky grassland/moist grassland. However, all other construction related activities in these areas must be limited to absolutely necessary.<br>9. The Declining Boophonedistichia(poison bulb) should be relocated to suitable habitat outside of the disturbed footprint or within a substation locality where it can be monitored. This should be discussed with the GDARD, prior to removal.<br>10. The ECO should be notified if any bulbous species are uncovered. The species should be identified by a suitably qualified person, who will also advise to correct action to be taken.<br>11. After construction, the land must be cleared of rubbish, surplus materials, and equipment, and all parts of the land must be left in a condition as close as possible to that prior to construction. | |
| | ***Indirect impacts:***<br><br>• Soils will be exposed to | **Medium** | As detailed above | **Low** |

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| | erosion during rainfall events.<br>• Increased stormwater runoff.<br>• Loss of insect and other fauna habitat. | | | |
| | ***Cumulative impacts:***<br>• The clearance or loss of flora lessens the contribution to the ecosystem function.<br>• Increase in sedimentation of watercourses. | **VeryLow** | As detailed above | **Negligible** |
| **4. Impact on fauna** | ***Direct Impacts:***<br>• Lines and their supporting poles/pylons intrude into previously open space but have a small terrestrial footprint.<br>• Habitat loss and degradation by means of vegetation/tree clearance and heavy motor vehicle usage over the study site and adjacent land will expose the soils. It is predicted that can be | **Low** | 1. The contractor/contractors must ensure that no animals are disturbed, trapped, hunted or killed during the construction phase. Conservation-orientated clauses should be built into contracts for construction personnel, complete with penalty clauses for non-compliance.<br>2. As far as possible, restrict construction activities to the development site.<br>3. Education of the construction staff about the value of wildlife and environmental sensitivity. | **Very Low** |

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| | ameliorated. | | | |
| | ***Indirect Impacts:***<br>• Loss of conservation-significant taxa and/or changes in community structure.<br>• Increased habitat fragmentation & loss of connectivity.<br>• Increased anthropogenic encroachment | **Very Low** | As detailed above | **Negligible** |
| | ***Cumulative Impacts:***<br>• No loss of ecosystem function is anticipated. | **None** | As detailed above | **None** |
| **4. Impact on avifauna** | ***Direct Impacts:***<br>• Electrocutions of red data species<br>• Bird collisions, particularly red data species<br>• Habitat Destruction.<br>• Disturbance to breeding birds. | **Low** | 1. Installation of Double Loop Bird Flight Diverters five metres apart, alternating black and white.<br>2. The sections of the power line route indicated on the Sensitivity Map (see Appendix B) of the Avifaunal Report must be marked with Double Loop Bird Flight Diverters must be applied to the earth wireof the line, five meters apart, alternating black and white. | **Very Low** |

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| | | | 3. The construction activities must be strictly limited to the construction footprint.<br>4. Eskom's environmental guidelines for the construction of power lines, which is designed to minimise the impact on the environment must be adhered to. | |
| | ***Indirect Impacts:***<br><br>• A change of directions for birds<br>• Birds moving and settling away from construction areas.<br>• Noise from construction activities frightening the birds. | **Very Low** | As detailed above | **Negligible** |
| | ***Cumulative Impacts:***<br>In combination with other power lines and substation in the area, an additional barrier would be created for birds resulting in possible further displacement and or adjustment of flight paths for species that use the area as a flight corridor | **None** | N/A | N/A |
| **5. Impact on Wetlands and other** | ***Direct Impacts:***<br><br>Changing the quantity and | **Medium** | 1. No activities should take place in the watercourses and associated buffer zone (30 m from the edge | **Low** |

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| **water courses** | fluctuation properties of the watercourse. | | of the watercourse). Where the above is unavoidable, only the necessary footprint and additional access roads can be considered. This is subjected to authorization by means of a water use license.<br>2. No activities should take place in the watercourses and associated buffer zone. Where the above is unavoidable, only the necessary footprint and additional access roads can be considered. This is subjected to authorization by means of a water use license.<br>3. Construction in and around watercourses must be restricted to the dryer winter months.<br>4. A temporary fence or demarcation must be erected around the works area to prevent access to sensitive environs. The works areas generally include the servitude, construction camps, areas where material is stored and the actual footprint of infrastructure.<br>5. Prevent pedestrian and vehicular access into the wetland and buffer areas.<br>6. Consider the various methods for stringing cables and select whichever method(s) that will have | |

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| | | | the least impact on watercourses.<br>7. Plan watercourse crossings to take place at pre-determined points such as where the wetland width (and thus area to be impacted) is the smallest.<br>8. Demarcate the wetlands and buffer zones to limit disturbance, clearly mark these areas as no-go areas.<br>9. Weed control in buffer zone.<br>10. Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction camp and work areas.<br>11. After construction, the land must be cleared of rubbish, surplus materials, and equipment, and all parts of the land shall be left in a condition as close as possible to that prior to use. | |
| | ***Indirect Impacts:***<br><br>• Changing the amount of sedimententering water resource and associated change in turbidity (increasing or decreasing the amount) | **Medium** | As detailed above | **Low** |

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| | • Alteration of water quality – increasingthe amounts of nutrients (phosphate, nitrite, nitrate)<br><br>• Alteration of water quality – toxiccontaminants<br><br>• Changing the physical structure within a water resource (habitat) | | | |
| | ***Cumulative Impacts:***<br><br>Habitat and ecological degradation in the area. | **Medium** | As detailed above | **Low** |
| **12. Impact on soil** | ***Direct Impacts:***<br><br>The removal of surface vegetation, whether natural or disturbed, will expose the soils, which in rainy events could wash down into proximate moist grasslands, causing sedimentation. | **High** | 1. Do not allow erosion to develop on a large scale before taking action.<br>2. Where possible, no construction / activities should be undertaken within the moist grasslands. The extent of wetland conditions should be verified by a wetland specialist and no activities should take place within these areas without a Water Use License was granted by the Department of Water and Sanitation (DWS) for these activities.<br>3. Existing access roads must be used where possible to avoid | **Low** |

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| | | | impacts on surrounding vegetation. Appropriate erosion control measures must be implemented.<br>4. Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction / earthworks in that area.<br>5. Remove only the vegetation where essential for construction and do not allow any disturbance to the adjoining natural vegetation cover. The grassland can be removed as sods and re-established after construction is completed.<br>6. Colonisation of the disturbed areas by plants species from the surrounding natural vegetation must be monitored to ensure that vegetation cover is sufficient within one growing season. If not, then the areas need to be rehabilitated with a grass seed mix containing species that naturally occur within the study area.<br>7. Protect all areas susceptible to erosion (especially the sloped rocky grassland) and ensure that there is no undue soil erosion resultant from activities within and | |

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| | | | adjacent to the construction camp and work areas. | |
| | ***Indirect Impacts:***<br><br>• Exposure of the soil to erosion and subsequent sedimentation of proximate moist grassland.<br><br>• Seeds from proximate alien invasive plant species will spread easily into these eroded soils.<br><br>• Limited vegetation growth/cover<br><br>• Increased storm water run off | **Medium** | As detailed above | **Low** |
| | ***Cumulative Impacts***<br><br>• Potential degradation of wetlands.<br>• Habitat fragmentation of aquatic fauna. | **Low** | As detailed above | **Very Low** |
| **8. Noise Impacts** | ***Direct impacts:***<br><br>• Noise created by construction vehicles and | **Low** | 1. Construction activities to be limited to office hours on weekdays as far as possible.<br>2. The contractor must ensure that | **Very Low** |

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| | machinery during construction activities. | | noise levels remain within acceptable limits.<br>3. Prevent the generation of a disturbing or nuisance noises.<br>4. Ensure acceptable noise levels at surrounding stakeholders and potentially sensitive receptors.<br>5. Ensuring compliance with the Noise Control Regulations.<br>6. 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. No noise will be generated during the operational phase of the development. | |

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| | ***Indirect impacts:***<br><br>• Noise may drive away fauna species that may potentially occur in the area. | **Medium** | As detailed above | **Low** |
| | ***Cumulative impacts:***<br><br>None | **None** | None | **None** |
| **7. Impacts on ground water** | ***Direct impacts:***<br><br>• Hydrocarbon leakages from plant vehicles and poor management of sources of hydrocarbon leaking to the ground. | **Medium** | 1. Construction vehicles are to be maintained in good working order, to reduce the probability of leakage of fuels and lubricants.<br>2. All cement mixing must occur on impervious surfaces and within controlled bermed areas.<br>3. Oil spillages must be treated with oil absorbent such as Drizit or similar and this material removed to a licensed waste disposal site.<br>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.<br>5. No materials may be discharged to watercourses and resources from the construction camps.<br>6. All hydrocarbons must be stored | **Low** |

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| | | | in a proper bunded facility. | |
| | ***Indirect impacts:***<br><br>• Leakages leading to pollute underground water resources.<br><br>• Contaminated soils washing away to drainage lines and watercourses. | **Low** | As detailed above | **Very Low** |
| | ***Cumulative impacts:***<br><br>• Polluted groundwater resources<br>Pollution in nearby watercourses. | **Very Low** | As detailed above | **Negligible** |
| **8. Impacts on storm water** | ***Direct impacts:***<br><br>Flooding and ponding of low level areas. | **Medium** | 1. A storm water management plan must be implemented during construction to prevent deterioration of the moist grasslands and the watercourses.<br>2. No stockpiles or construction materials may be stored or placed within any drainage lines that may be in close proximity of storm water drains.<br>3. No stockpiles or construction materials may be stored or placed in close proximity to storm water drains. | **Low** |

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| | | | 4. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required. | |
| | ***Indirect impacts:***<br><br>• Transporting of pollutants to watercourses and sensitive areas.<br>• Sediment runoff into watercourses and catchments. | **Low** | | **Very Low** |
| | ***Cumulative impacts:***<br><br>Degradation of the water quality of rivers and other water bodies. | **Medium** | | **Low** |
| **9. Impact on air quality** | ***Direct impacts:***<br><br>• The generation of dust from movement of Construction machinery and heavy vehicles. | **Medium** | 1. Continuous watering of the site should be carried out to prevent dust pollution during windy and dry condition.<br>2. A continuous dust monitoring process needs to be undertaken during construction.<br>3. Speed restriction of 20km/h must be implemented for all construction vehicles.<br>4. All vehicles transporting friable materials such a sand, rubble etc must be covered by a tarpaulin or | **Low** |

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| | | | wet down. | |
| | ***Indirect impacts:***<br><br>• Likely to generate dust which is likely travel and to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access | **Low** | As detailed above | **Very Low** |
| | ***Cumulative impacts:***<br><br>• Overall rise in dust levels around the study site. | **Very Low** | As detailed above | **Negligible** |
| **10. Impact on visual and aesthetic quality** | ***Direct impacts:***<br><br>Temporary presence of construction camps and material stockyards as well as disturbances and activities within and around the power line servitude and<br>the substation sites. | **Medium to Low** | 1. Locate construction camps and stock yards in the least visible areas.<br>2. Make use of the natural screening capacity of the site by placing these facilities in the lower lying areas of the study area or adjacent a dense vegetation patch with sufficient height to conceal these project components.<br>3. The screening capacity of the site can be temporarily enhanced through the erection of a 2 m high shade cloth fence around the construction camp and substation site during construction. The | **Low** |

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| | | | colour of the shade cloth should be similar to that of the adjacent vegetation, i.e. a light brown or green.<br>4. Keep the construction camp neat and tidy at all times. Remove any waste products from the site or contain it in an enclosed area out of the sight from viewers.<br>5. Retain as much of the existing vegetation as possible, specifically existing mature trees that contributes to the natural screening capacity of the study area. | |
| | ***Indirect impacts:***<br><br>None | **N/A** | **N/A** | **N/A** |
| | ***Cumulative impacts:***<br><br>None | **N/A** | **N/A** | **N/A** |
| **13. Health and Safety** | ***Direct impacts:***<br><br>Impacts/injuries to residents and construction workers 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.<br>2. Safety clothes and equipment must be worn at all times.<br>3. No fires are allowed at or around the construction site. The contractor must provide gas fired stoves and heaters to the workers. | **Low** |

| | | | | |
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| | ***Indirect impacts:*** | **N/A** | **N/A** | **N/A** |
| | ***Cumulative impacts:*** | **N/A** | **N/A** | **N/A** |
| **14. Impact on socio-economics** | ***Direct impacts:***<br>• 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. | **Low positive** | **Proposed enhancement:**<br>1. A local employment policy to be adopted by the developer to maximise the project opportunities being made available to the local community.<br>2. Contractor must opt to utilize local businesses as suppliers. | **Medium positive** |
| | ***Indirect impacts:***<br>• Stimulation of local economy.<br>• Improved living conditions of locals. | **Low positive** | | **Medium positive** |
| | ***Cumulative impacts:***<br>• Increased economic activity and growth. | **Low positive** | | **Medium positive** |
| **15. Impacts on heritage resources** | ***Direct impacts:***<br>No impacts are expected on any cultural-historical aspects during the construction of the proposed | **Very Low** | 1. Identified homestead ruinson site should be isolated by barricading the area with during construction of the power line.<br>2. Should any archaeological | **Negligible** |

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| | development as no such features occur on site. It must also be noted that sometimes such features (such as graves) occur beneath ground and could accidentally be exhumed during earthworks. | | material or human remains be accidentally unearthed during the course of construction, the ECO on site should be informed, who will further contact an accredited archaeologist to assist with mitigation measures<br>3. Construction personnel must be alert and inform local Council should they come across any features of heritage value and must cease construction activities immediately.<br>4. No heritage feature can be removed, destroyed and/or interfered with on site without the permission of an accredited archaeologist. | |
| | ***Indirect impacts:***<br><br>None | **N/A** | **N/A** | **N/A** |
| | ***Cumulative impacts:***<br><br>None | **N/A** | None | **N/A** |
| **Operation Phase:** Impacts during the operational phase are expected to occur during maintenance and repairs of the Power lines. The following impacts are anticipated: | | | | |
| **2. Noise and dust pollution** | ***Direct impacts:***<br><br>Noise from moving vehicles and machinery and dust from | **Low** | 1. Dust suppression and wet spraying should be implemented.<br>2. Limit maintenance hours to daytime and weekday.<br>3. Ensure that noise levels are to an | **Very Low** |

| | | | | |
|---|---|---|---|---|
| | plant/machinery eg. Moving Cherry pickers along the gravel access roads may occur during maintenance of the substation. | | acceptable limit. | |
| | ***Indirect impacts:***<br><br>None | None | None | None |
| | ***Cumulative impacts:***<br><br>None | None | None | None |

| **Construction Phase: Substation 1 and Substation 2 (Alternative Site A (Preferred) & B)-**Please also refer to the EMPr, Specialist assessments and Eskom's minimum standards for vegetation management and erosion control reports for details on other applicable mitigation measures. | | | | |
|---|---|---|---|---|
| **Activity** | **Impact summary** | **Significance rating of impacts: (without mitigation)** | **Proposed mitigation** | **Significance rating of impacts after mitigation:** |
| **1. Impacts on flora** | ***Direct impacts:***<br><br>• Clearing of and damage to vegetation in construction footprint for towers, access roads, construction camps, vehicle / machinery | **Medium** | 1. A temporary fence or demarcation must be erected around the construction area (include the servitude, construction camps, areas where material is stored and the actual footprint of the development) to prevent | **Moderate to Low** |

| | | | | |
|---|---|---|---|---|
| | traffic, trampling by workers (stepping on small plants).<br><br>• Construction of the preferred route will destroy the one Boophonedistichia (poison bulb) individual. | | access to adjacent, vegetated environs.<br>2. A pre-construction walk-through of the final substation positions must be done to ensure that sensitive habitats are avoided and that species of conservation concern can be identified and relocated. The declining Boophone distichia must be relocated to suitable habitats outside of the development footprint. The Provincial Authority must be consulted prior to removal and translocation of the species.<br>3. Prohibit vehicular or pedestrian access into natural areas beyond the demarcated boundary of the construction area (particularly to the moist grassland).<br>4. No activities should take place during rainy events and at least 2 days afterwards.<br>5. Maintain site demarcations in position until the cessation of construction work.<br>6. Where possible, construction activities must be restricted to previously disturb (Secondary grasslands) and transformed | |

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| | | | areas.<br>7. The Declining Boophonedistichia (poison bulb) should be relocated to suitable habitat outside of the disturbed footprint or within a substation locality where it can be monitored. This should be discussed with the GDARD, prior to removal.<br>8. The ECO should be notified if any bulbous species are uncovered. The species should be identified by a suitably qualified person, who will also advise to correct action to be taken.<br>9. After construction, the land must be cleared of rubbish, surplus materials, and equipment, and all parts of the land must be left in a condition as close as possible to that prior to construction. | |
| | ***Indirect impacts:***<br><br>• Soils will be exposed to erosion during rainfall events.<br>• Increased stormwater runoff. | **Medium** | As detailed above | **Low** |

| | | | | |
|---|---|---|---|---|
| | • Loss of insect and other fauna habitat. | | | |
| | ***Cumulative impacts:***<br>• The clearance or loss of flora lessens the contribution to the ecosystem function. | **VeryLow** | As detailed above | **Negligible** |
| **2. Impact on fauna** | ***Direct Impacts:***<br>• Habitat loss and degradation by means of vegetation/tree clearance and heavy motor vehicle usage over the study site and adjacent land will expose the soils. It is predicted that can be ameliorated. | **Low** | 1. The contractor/contractors must ensure that no animals are disturbed, trapped, hunted or killed during the construction phase. Conservation-orientated clauses should be built into contracts for construction personnel, complete with penalty clauses for non-compliance.<br>2. As far as possible, restrict construction activities to the development site.<br>3. Education of the construction staff about the value of wildlife and environmental sensitivity. | **Very Low** |
| | ***Indirect Impacts:***<br>• Loss of conservation-significant taxa and/or changes in community | **Very Low** | As detailed above | **Negligible** |

| | | | | |
|---|---|---|---|---|
| | structure.<br><br>• Increased habitat fragmentation & loss of connectivity.<br><br>• Increased anthropogenic encroachment | | | |
| | ***Cumulative Impacts:***<br><br>• No loss of ecosystem function is anticipated. | **N/A** | As detailed above | **N/A** |
| **3. Impact on avifauna** | ***Direct Impacts:***<br><br>• Habitat loss and degradation by means of vegetation/tree clearance. | **Low** | 1. The contractor/contractors must ensure that no animals are disturbed, trapped, hunted or killed during the construction phase. Conservation-orientated clauses should be built into contracts for construction personnel, complete with penalty clauses for non-compliance.<br>2. As far as possible, restrict construction activities to the development site.<br>3. Education of the construction staff about the value of wildlife and environmental sensitivity | **Very Low** |
| | ***Indirect Impacts:*** | **Very Low** | As detailed above | **Negligible** |

| | | | | |
|---|---|---|---|---|
| | • Habitat fragmentation | | | |
| | ***Cumulative Impacts:***<br><br>None | **N/A** | **N/A** | **N/A** |
| **4. Impact on soil** | ***Direct Impacts:***<br><br>The removal of surface vegetation, whether natural or disturbed, will expose the soils, to soil erosion | **High** | 1. Do not allow erosion to develop on a large scale before taking action.<br>2. • Existing access roads must be used where possible to avoid impacts on surrounding vegetation. Appropriate erosion control measures must be implemented.<br>3. Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction / earthworks in that area.<br>4. Remove only the vegetation where essential for construction and do not allow any disturbance to the adjoining natural vegetation cover. The grassland can be removed as sods and re-established after construction is completed.<br>5. Colonisation of the disturbed | **Low** |

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| | | | areas by plants species from the surrounding natural vegetation must be monitored to ensure that vegetation cover is sufficient within one growing season. If not, then the areas need to be rehabilitated with a grass seed mix containing species that naturally occur within the study area.<br>6. Protect all areas susceptible to erosion and area around the construction camp and work areas. | |
| | ***Indirect Impacts:***<br><br>• Exposure of the soil to erosion and subsequent sedimentation of proximate moist grassland.<br><br>• Seeds from proximate alien invasive plant species will spread easily into these eroded soils.<br><br>• Limited vegetation growth/cover<br><br>• Increased storm water | **Medium** | As detailed above | **Low** |

| | | | | |
|---|---|---|---|---|
| | run off | | | |
| | ***Cumulative Impacts***<br><br>• Potential degradation of wetlands.<br>• Habitat fragmentation of aquatic fauna. | **Low** | As detailed above | **Low+** |
| **5. Noise Impacts** | ***Direct impacts:***<br><br>• Noise created by construction vehicles and machinery during construction activities. | **Medium** | 1. Construction activities to be limited to office hours on weekdays as far as possible.<br>2. The contractor must ensure that noise levels remain within acceptable limits.<br>3. Prevent the generation of a disturbing or nuisance noises.<br>4. Ensure acceptable noise levels at surrounding stakeholders and potentially sensitive receptors.<br>5. Ensuring compliance with the Noise Control Regulations.<br>6. In order to minimise the impacts of noise during the construction phase, construction activities should be restricted to between 07H00 and 17H00 Monday toFriday. This is required in order to avoid noise and lighting disturbances outside | **Low** |

| | | | | |
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| | | | 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. No noise will be generated during the operational phase of the development. | |
| | ***Indirect impacts:***<br><br>An additional noise burden to nearby residents along the alignments. | **Medium** | As detailed above | **Low** |
| | ***Cumulative impacts:***<br><br>None | **N/A** | **N/A** | **N/A** |
| **6. Impacts on ground water** | ***Direct impacts:***<br><br>• Pollution of the underground water resources by hydrocarbons or pollutants like cement | **Medium** | 1. Construction vehicles are to be maintained in good working order, to reduce the probability of leakage of fuels and lubricants.<br>2. All cement mixing must occur on impervious surfaces and | **Low** |

| | | | | |
|---|---|---|---|---|
| | due to mismanagement of hazardous material on site leading to soil pollution.<br><br>• Contaminated soils washing away to drainage lines and watercourses | | within controlled bermed areas.<br>3. Oil spillages must be treated with oil absorbent such as Drizit or similar and this material removed to a licensed waste disposal site.<br>4. Contractor/s must provide regularly serviced portable chemical toilets for construction workers ata distance no more than 200 m from the place of construction.<br>5. No materials may be discharged to watercourses and resources from the construction camps.<br>6. All hydrocarbons must be stored in a proper bunded facility. | |
| | ***Indirect impacts:***<br><br>• Pollutants are carried by stormwater via infiltration to underground aquifers.<br><br>• underground water resources.<br><br>• Nearby communities | **Very Low** | As detailed above | **Negligible** |

| | | | | |
|---|---|---|---|---|
| | falling sick due to polluted water | | | |
| | ***Cumulative impacts:***<br><br>• Degraded groundwater resources | **Medium** | As detailed above | **Low** |
| **7. Impacts on storm water** | ***Direct impacts:***<br><br>Flooding and ponding of low level areas. | **Medium** | 1. A storm water management plan must be implemented during construction.<br>2. No stockpiles or construction materials may be stored or placed within any drainage lines that may be in close proximity of storm water drains.<br>3. No stockpiles or construction materials may be stored or placed in close proximity to storm water drains.<br>4. The storm water system especially discharge points must be inspected and damaged areas must be repaired if required. | **Low** |
| | ***Indirect impacts:***<br><br>• Transporting of pollutants to watercourses and sensitive areas. | **Low** | As detailed above | **Very Low** |

| | | | | |
|---|---|---|---|---|
| | • Sediment runoff into watercourses and catchments. | | | |
| | ***Cumulative impacts:***<br><br>Degradation of the water quality of rivers and other water bodies. | **Low** | As detailed above | **Negligible** |
| **8. Impact on air quality** | ***Direct impacts:***<br><br>• The generation of dust from movement of Construction machinery and heavy vehicles. | **Medium** | 1. Continuous watering of the site should be carried out to prevent dust pollution during windy and dry condition.<br>2. A continuous dust monitoring process needs to be undertaken during construction.<br>3. Speed restriction of 20km/h must be implemented for all construction vehicles.<br>4. All vehicles transporting friable materials such a sand, rubble etc must be covered by a tarpaulin or wet down. | **Low** |
| | ***Indirect impacts:***<br><br>• Likely to generate dust which is likely travel and to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access | **Low** | As detailed above | **Very Low** |

| | | | | |
|---|---|---|---|---|
| | ***Cumulative impacts:***<br><br>• Overall rise in dust levels around the study site. | **Very Low** | As detailed above | **Negligible** |
| **9. Impact on visual and aesthetic quality** | ***Direct impacts:***<br><br>Temporary presence of construction camps and material stockyards as well as disturbances and activities within and around the substation sites. | **Medium to Low** | 1. Locate construction camps and stock yards in the least visible areas.<br>2. Make use of the natural screening capacity of the site by placing these facilities in the lower lying areas of the study area or adjacent a dense vegetation patch with sufficient height to conceal these project components.<br>3. The screening capacity of the site can be temporarily enhanced through the erection of a 2 m high shade cloth fence around the construction camp and substation site during construction. The colour of the shade cloth should be similar to that of the adjacent vegetation, i.e. a light brown or green.<br>4. Keep the construction camp neat and tidy at all times. Remove any waste products from the site or contain it in an enclosed area out of the sight from viewers.<br>5. Retain as much of the existing | **Low** |

| | | | | |
|---|---|---|---|---|
| | | | vegetation as possible, specifically existing mature trees that contributes to the natural screening capacity of the study area. | |
| | ***Indirect impacts:***<br><br>None | **N/A** | **N/A** | **N/A** |
| | ***Cumulative impacts:***<br><br>None | **N/A** | **N/A** | **N/A** |
| **10. Health and Safety** | ***Direct impacts:***<br><br>Impacts/injuries to residents and construction workers 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.<br>2. Safety clothes and equipment must be worn at all times.<br>3. No fires are allowed at or around the construction site. The contractor must provide gas fired stoves and heaters to the workers. | **Low** |
| | ***Indirect impacts:*** | **None** | None | **None** |
| | ***Cumulative impacts:*** | **N/A** | **N/A** | **N/A** |
| **11. Impact on socio-economics** | ***Direct impacts:***<br><br>• The construction phase will provide direct temporary employment for locals, and indirect | **Low positive** | **Proposed enhancement:**<br><br>1. A local employment policy to be adopted by the developer to maximise the project opportunities being made available to the local | **Medium positive** |

| | | | | |
|---|---|---|---|---|
| | employment through demand for construction materials, and support services, as well as empowerment and skills transfer opportunities. | | community.<br>2. Contractor must opt to utilize local businesses as suppliers. | |
| | ***Indirect impacts:***<br><br>• Stimulation of local economy.<br>• Improved living conditions of locals. | **Low positive** | As detailed above | **Medium positive** |
| | ***Cumulative impacts:***<br><br>• Increased economic activity and growth. | **Low positive** | As detailed above | **Medium positive** |
| **12. Impacts on unknown cultural and heritage resources** | ***Summary***<br><br>No identified heritages objects where reported on site however due to the nature of some of the objects occurring below ground could not have been identified during site assessment these maybe exhumed during excavation | **Very Low** | 1. It is recommended that the two homestead ruins should be isolated by fencing it off with danger tape during construction of the power line.<br>2. If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the South African Heritage Resources Agency (SAHRA) so that systematic and professional investigation/ excavation can be undertaken. | **Negligible** |

| | | | | |
|---|---|---|---|---|
| | | | 3. Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they unearth such objects.<br>4. Construction personnel must be alert and inform local Council should they come across any features of heritage value and must cease construction activities immediately.<br>5. No heritage feature can be removed, destroyed and/or interfered with on site without the permission of an accredited archaeologist. | |
| | ***Indirect impacts:***<br>None | **N/A** | **N/A** | **N/A** |
| | ***Cumulative impacts:***<br><br>Irreplaceable loss of archaeological heritage resources | **N/A** | **N/A** Mitigations as detailed above | **N/A** |
| | ***Indirect impacts:***<br>• Loss of vegetation<br>• Increase in erosion potential | **Medium** | As detailed above | **Low** |
| | ***Cumulative impacts:*** | **None** | None | **None** |

| | | | | |
|---|---|---|---|---|
| | None | | | |
| **Operation Phase:** Impacts during the operational phase are expected to occur during maintenance and repairs of the Substation. The following impacts are anticipated: | | | | |
| **5. Noise and dust pollution** | ***Direct impacts:***<br><br>Noise and dust may occur during maintenance of the substation. | **Low** | 1. Dust suppression and wet spraying should be implemented.<br>2. Limit maintenance hours to daytime and weekday.<br>3. Ensure that noise levels are to an acceptable limit. | **Very Low** |
| | ***Indirect impacts:***<br><br>None | None | None | None |
| | ***Cumulative impacts:***<br><br>None | None | None | None |
| **Decommissioning phase for the proposed development -** The decommissioning phase will not be assessed in this report as the closure and decommissioning require a separate EIA process which will be conducted as and when closure is required. | | | | |

**The NO GO Alternative**

| Potential Impact | Description of impact | Significance rating of impacts before mitigation | Proposed Mitigation | Significance rating of impacts after mitigation |
|---|---|---|---|---|
| **NO GO ALTERNATIVE** | | | | |
| This is the option of not constructing the proposed power line and substations. This option will result in limited or no impacts occurring on the biophysical environment (i.e. biodiversity, soils), and will result in no or low visual impact. However, this will result in the situation where the Energy Facility cannot be constructed to aid in the problematic electrical issues in the area. This will result in a lost opportunity for development in the area, an unhappy community, | | | | |

| Potential Impact | Description of impact | Significance rating of impacts before mitigation | Proposed Mitigation | Significance rating of impacts after mitigation |
|---|---|---|---|---|
| continuous strain on the existing inadequate energy infrastructure in the area which are currently operating below demand and from a cumulative point of view this will result in inadequate energy supply production within the country which would have negative impacts at a national level. The no-go option is therefore not preferred. | | | | |
| | ***Direct impacts:*** | | | |
| | Lost opportunity for energy production within the already strained study area | High | Implementation of the proposed project is a mitigation in this regard | |
| | ***Indirect impacts:*** | | | |
| | N/A | N/A | N/A | |
| | ***Cumulative impacts:*** | | | |
| | N/A | N/A | N/A | |

A complete impact assessment in terms of Regulation 19(3) of GN 733 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.

**Substation 1 and Substation 2 (Alternative Site A & B)**

This section provides a summary of the environmental assessment and conclusions drawn for the proposed two substations and three power line alternatives. In doing so, it draws on the information gathered as part of the Basic Assessment process and the knowledge gained by the environmental consultants during the course of the process and presents an informed opinion of the environmental impacts associated with the proposed project.

With regards to the construction of the proposed two substations, it is the opinion of this basic assessment and the specialists that no significant far reaching impacts will occur as a result of their construction. It must be noted that where Substation 1 and Substation 2 Alternative Sites A&B are proposed to be constructed no watercourse or any protected species has been recorded to occur neither on site nor within 500 m from the boundary of the sites. The vegetation groups identified within proposed substation sites already have significantly high levels of disturbance present due to past anthropogenic activities. The development of the substations on identified sites will not pose any significant threat to the vegetation and is supported from a vegetation perspective. The overall impacts on the ecological receiving environment for both site 1 where substation 1 is proposed and Alternatives Sites A (Preferred) & Alternative Site B where Substation 2 is proposed are minimal .Geotechnically, Substation 1 and Substation 2 (Alternative Site A) are preferred provided that normal construction methods are employed where foundations should be placed below the residual chert gravel. A detailed dolomite assessment is recommended by the geotechnical engineer before development takes place. Mitigation measures recommended by the specialists and the EMP must be implemented.

## Powerlines

**Alternative A (Primary Alignment) (preferred alternative)**

Certain elements and/or factors have been taken into account when assessing the impact of the proposed activity on the environment. Based on the findings of the studies undertaken during the Basic Assessment there have been no environmental fatal flaws identified in terms of the construction and operation of the proposed Taunus Diepkloof overhead powerline.

| Element/Factor | Observation/Comments |
|---|---|
| Flora impact | From a vegetation perspective, it was found that the major vegetation groups identified during the survey along this alignment all vegetation had significantly high levels of disturbance present. The wetland or moist grassland comprised mainly of dense stands of *Phragmitesaustralis*. |

| | |
|---|---|
| | Also, this alignment does not pose any significant threat to the vegetation and are supported from a vegetation perspective. The Primary Alignment and Deviation 1 are considered as a feasible option if all of the mitigation measures and recommendations are adhered to. |
| Fauna and habitat Impact | No threatened species are expected to be fatally impacted upon by the proposed alignment. |
| Wetland Impact | This Primary alignment travels along the northern side of the Kliprivier wetland and is not expected to have fatal impacts provided that mitigation measures are implemented. |
| Avifauna Impact | The steel monopole structure that is used for 132kV lines is not regarded as a major electrocution threat. The proposed power lines could pose a limited collision threat to Red Data species. The electrocution and collision threat can be mitigated through the installation of Double Loop Bird Flight Diverters from Medium before mitigation to Low after mitigation. |
| Heritage and Cultural Impact | The two ruins of what might have been farm labourer ruins which are within 500 m of this Primary alignment. During construction this site should be isolated by fencing it off with danger tape. No other objects of heritage and cultural significance were found within 500 m alignment. |
| Groundwater and sub-surface | The Geotechnical specialist concluded that the Primary alignment unlikely to present any major geological or geotechnical problems. It is however important to establish at an early stage of a more detailed investigation whether the area has been undermined, particularly to shallow depth, and also carry out a dolomite stability assessment. |
| Visual and/or aesthetic elements | Without mitigation, the new power line will be a weak visual element but its addition will change the baseline conditions of the study area and intrude on certain views. Alignment along existing power lines is more accepted than following a new alignment and is the ultimate mitigation. This will cause the least visual change based on the baseline setting. |
| Possible degradation and long-term effects on the environment. | No long term effect on the environment is expected. Mitigation measures should be employed to ensure no significant degradation of the environment. |
| Pollution released into the environment | The proposed activity is not expected to result in long term pollution of the environment. Mitigation measures are proposed to ensure pollution is restricted to short term localised effects |

**Alternative B (Deviation 1)**

| Element/Factor | Observation/Comments |
|---|---|
| Flora impact | From a vegetation perspective, it was found that the major vegetation groups identified during the survey along this alignment all vegetation had significantly high levels of disturbance present. The wetland or moist grassland comprised mainly of dense stands of *Phragmitesaustralis*. Also, this alignment does not pose any significant threat to the vegetation and are supported from a vegetation perspective. The Primary Alignment and Deviation 1 are considered as feasible options if all of the mitigation measures and recommendations are adhered to. |
| Fauna and habitat Impact | No threatened species are expected to be fatally impacted upon by the proposed alignment. |
| Watercourse Impact | No watercourse is recorded with in 500 m of this alignment. |
| Avifauna Impact | The steel monopole structure that is used for 132kV lines is not regarded as a major electrocution threat. The proposed power lines could pose a limited collision threat to Red Data species. The electrocution and collision threat can be mitigated through the installation of Double Loop Bird Flight Diverters. |
| Heritage and Cultural Impact | The two ruins of what might have been farm labourer ruins which are within 500 m of this alignment. During construction this site should be isolated by fencing it off with danger tape. No other objects of heritage and cultural significance were found within 500 m alignment. |
| Groundwater and sub-surface | The Geotechnical specialist concluded that the alignment unlikely to present any major geological or geotechnical problems. It is however important to establish at an early stage of a more detailed investigation whether the area has been undermined, particularly to shallow depth, and also carry out a dolomite stability assessment. |
| Visual and/or aesthetic elements | Without mitigation, the new power line will be a weak visual element but its addition will change the baseline conditions of the study area and intrude on certain views. Alignment along existing power lines is more accepted than following a new alignment and is the ultimate mitigation. This will cause the least visual change based on the baseline setting. |
| Possible degradation and long- | No long term effect on the environment is expected. Mitigation |

| | |
|---|---|
| term effects on the environment. | measures should be employed to ensure no significant degradation of the environment. |
| Pollution released into the environment | The proposed activity is not expected to result in long term pollution of the environment. Mitigation measures are proposed to ensure pollution is restricted to short term localised effects |

**Alternative C (Deviation 2)**

| Element/Factor | Observation/Comments |
|---|---|
| Flora Impacts | The greatest impact of the proposed development on vegetation is expected to occur in the disturbed moist grasslands and wetland group (KlipRivier wetland) of which is classified as being high sensitivity. This alignment is not preferred. |
| Fauna and habitat Impact | The habitat of the recorded Endangered African Marsh Harrier and other species will be fragmented upon by the development of Deviation 2. |
| Wetland Impacts | One of the wetlands (Klip Rivier) on which Deviation 2 travels in the middle of, is a Very Important regional wetland which forms part of the Critically Endangered Klip River Grassland ecosystem which is the habitat for red and orange listed plants and birds such as the Maccoa Duck and Greater Flamingo and also red and orange listed or priority invertebrates with *Phragmitesaustralis* present along this route. |
| Avifauna | The Endangered African Marsh Harrier was recorded in this alignment and is expected to be impacted on by developments on this route. Other threatened riparian and wetland species may also occur along this linear watercourse, in addition to its ecological importance as a corridor for dispersal movements of wetland species.This route is thus not preferred. |
| Heritage and Cultural Impact | No objects of heritage and cultural significance were found within 500 m alignment. |
| Groundwater and sub-surface | The Geotechnical specialist concluded that the alignment unlikely to present any major geological or geotechnical problems. It is however important to establish at an early stage of a more detailed investigation whether the area has been undermined, particularly to shallow depth, and also carry out a dolomite stability assessment. |
| Visual and/or aesthetic elements | Without mitigation, the new power line will be a weak visual element but its addition will change the baseline conditions of the study area and intrude on certain views. Alignment along |

| | |
|---|---|
| | existing power lines is more accepted than following a new alignment and is the ultimate mitigation. This will cause the least visual change based on the baseline setting. |
| Possible degradation and long-term effects on the environment. | Possible long term effect on the environment can be expected. Mitigation measures should be employed to ensure no significant degradation of the environment. |

Overall, the Primary Alignment is most preferred in terms of overall environmental impacts. From an ecological perspective this option is also most preferred as it does not pose any significant threat to the vegetation and faunal life. Deviation 1 is also preferred as it too has less ecological impacts; however this line is slightly longer and slightly less feasible than the Primary alignment; however there is no fatal flaw if this alternative is authorised as well. Therefore, the Primary alignment is the preferred route and Deviation1 is the second preferred route for construction.

Deviation 2 is not preferred as it traverses a large section of the sensitive moist grassland vegetation group (KlipRivier wetland) and is not considered a feasible option. This alignment is not preferred as it will encroach on the recorded Endangered African Marsh Harrier's habitat that is suspected to be breeding on this alignment. **Therefore Deviation 2 is not preferred.**

**Table 1: Summary of specialist findings for each of the respective route (√ depicting suitability of the site for the power line development)**

| Specialists | Primary alignment | Deviation 1 | Deviation 2 | Preferred | Least Preferred |
|---|---|---|---|---|---|
| Floa &Fauna impact | √ | √ | X | Primary alignment and Deviation 1 | Deviation 2 |
| Avifaunal impact | √ | √ | | Primary alignment and Deviation 1 | Deviation 2 |
| Wetland impact | √ | √ | X | Primary alignment and Deviation 1 | Deviation 2 |
| Visul imact | √ | √ | X | Primary alignment and Deviation 1 | Deviation 2 |
| Heritage | √ | √ | √ | Equally suitable | |
| Geotechnical suiability | √ | √ | X | Primary alignment and Deviation 1 | Deviation 2 |

The Primary Alignment is the preferred alternative for implementation along with Substation 1 and Substation 2 Alternative Site A; Deviation 1 is also a preferred alternative as it too has less impact on the environment. The Primary Alignment is the preferred alternative route and recommended by all specialist studies that were conducted for the project. No fatal flaws or impacts of high significance were identified for these alternatives as they have the least impact on the environment. Deviation 1 is also a preferred option as it too has no fatal flaws on the environment and the impacts on the ecological receiving environment are minimal. Technically and financially, Eskom prefers the Primary Alignment route because it is shorter and will be cheaper to construct.

There are no environmental or social impacts of high significance that would prevent the establishment of the two proposed substations and the Taunus Diepkloof 132kV power line in Johannesburg, Gauteng Province, provided that the power line and substations are developed within the recommended alternatives.

**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 substations and development of the power line. 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.
- The 'Do nothing' alternative is, therefore, not a preferred alternative.

## 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 Basic Assessment Report has provided a comprehensive assessment of the potential environmental impacts associated with the 132 kV Taunus Diepkloof overhead power line and two new 132 kV substations. The construction of the proposed power line should be implemented according to the EMPr to adequately mitigate and manage potential impacts associated with construction activities. The construction activities and relevant rehabilitation of disturbed areas should be monitored against the approved EMPr, the Environmental Authorisation and all other relevant environmental legislation. Relevant conditions to be adhered to include:

- The primary alignment is the preferred alternative for implementation whereas for substations both proposed substations (Substation 1 and Substation 2 Alternative site A) can be implemented. The construction of the proposed power line and two associated substations (Substation 1 and Substation 2 Alternative A is recommended by this Basic Assessment.

The construction of the proposed power line and the substations should be implemented according to the EMPr to adequately mitigate and manage potential impacts associated with construction activities. The construction activities and relevant rehabilitation of disturbed areas should be monitored against the approved EMPr, the Environmental Authorisation and all other relevant environmental legislation. Relevant conditions to be adhered to include:

The construction activities and relevant rehabilitation of disturbed areas should be monitored against the approved EMPr, the Environmental Authorisation and all other relevant environmental legislation. The following measures should be considered for inclusion within the Environmental Authorisation:

- Eskom must adhere and be restricted to the authorised alignment servitude, disturbances in the moist grassland and mountain bushveld must be kept to a minimum.
- A pre-construction walk-through of the final power line route must be done to ensure that sensitive habitats are avoided and that species of conservation concern can be identified and relocated. The declining Boophone distichia must be relocated to suitable habitats outside of the development footprint. The Provincial Authority must be consulted prior to removal and translocation of the species.
- Construction activities must be restricted to the dry season. No activities should take place during rainy events and at least two days afterwards. Where possible construction should take place on previously disturbed transformed areas.
- A 30 m buffer zone should be recognised from the edge of the wetland areas.
- All declared alien vegetation must be identified and managed in accordance with the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). There should be an

alien species monitoring and eradication program to prevent encroachment of these problem plants. This should form part of the EMPr. An ong-going monitoring programme should be established as per Conservation of Agricultural Resources Act. Disturbed areas must be rehabilitated as soon as possible once construction activities are completed using grass seed mix containing species that naturally occur within the project area.

- Existing access roads must be used where possible to avoid impacts on surrounding vegetation. Appropriate erosion control measures must be implemented.
- A storm water management plan must be implemented during construction to prevent deterioration of the moist grasslands and the watercourses.
- The sections of the power line route indicated on the Sensitivity Map (see Appendix B) of the Avifaunal Report must be marked with Double Loop Bird Flight Diverters must be applied to the earth wireof the line, five meters apart, alternating black and white.
- All power lines must be marked with bird flappers/markers. Bird marker devices must be placed on the earth wires of the powerline.
- Compliance with the mitigation measures outlined in this BA report and EMPr.
- Continued consultation and engagement with all relevant stakeholders – especially the land owner, local communities and respective municipalities during labour recruitment and procurement for services and supplies during construction phase.
- The appointment of an independent ECO to conduct 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.
- Applicant should provide contractual agreement with the water service provider to the Local Municipality administering the area.
- Compliance with all legal requirements in relation to environmental management and conditions of the authorisation once issued by DEA.

In conclusion, based on the findings of the site assessment and specialist studies undertaken, in terms of environmental constraints identified through the Environmental Basic Assessment process, no environmental fatal flaws are envisaged from the granting of an environmental authorisation for the proposed construction of the 132 kV Taunus Diepkloof power line and the two associated 132 kV substations in Johannesburg, Gauteng Province. The development of the proposed project is therefore considered to be sustainable from an environmental perspective.

Therefore it is a recommendation of this Basic Assessment that the development of the 132 kV **Primary Alignment** route of Taunus Diepkloof power line and the two associated 132 kV substations which are **Substation 1** and **Substation 2 (Alternative A)** be authorised with application of effective mitigation measures. **Deviation 1** may also be considered for authorisation as this route too has no fatal flaws on the environment and the impacts on the ecological receiving environment are minimal.

| 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.

_____

NAME OF EAP

_____ _____

SIGNATURE OF EAP DATE

**SECTION F: APPENDIXES**

The following appendixes must be attached:

Appendix A: Maps
- A1: Locality Map
- A2: Overview of the study area
- A3: Sensitivity Maps
- A3: Gauteng C-Plan
- A3: Hydrology Map
- A3: Threatened Ecosystems

Appendix B: Photographs

Appendix C: Facility illustration(s)
- C1: Facility Illustrations for Substation 1 and Substation 2
- C2: Facility Illustrations for Monopole structures

Appendix D: Specialist reports (including terms of reference)
- D1: Geotechnical Report
- D2: Flora & Fauna Reports
- D3: Heritage Specialist Report
- D4: Wetland Specialist Report
- D5: Avifauna Specialist Report
- D6: Visual Specialist Report
- D7: Agricultural Potential Report

Appendix E: Public Participation
- E1: Proof of Site Notice & Adverts
- E2: Written Notice to I&Aps
- E3: Comments and Response Report
- E4: Proof of notification
- E5: Interested and Affected Party Database
- E6: Minutes of Public Meeting / Agenda and Attendance
- E7: Knock and Drop Registers
- E8: Correspondence with I&APs

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise
- H1: Gesan Govender's CV
- H2: Thabang Sekele's CV

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information
- J1: Power line and Substation Coordinates
- J2: Farm SG Codes, Names and Portion numbers

J3: EAP's Affirmation
J4- Eskom Guideline for Erosion Control
J5 - Eskom Land and Biodiversity Standard
J6 - Eskom standard for bush clearance
J7 – Details of EAP and Declaration of Interest