

# **ESKOM MERENSKY-UCHOBA 132kV PROJECT**

## **Draft Basic Assessment Report**

**May 2020**

### **Applicant**

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# List of Content

## **EXECUTIVE SUMMARY**

|                                |    |
|--------------------------------|----|
| Expected Positive Impact ..... | iv |
|--------------------------------|----|

## **CHAPTER 1: INTRODUCTION .....** 1

|       |   |    |
|-------|---|----|
| 1.1   | Background .....  | 1  |
| 1.2   | The Basic Assessment Report .....   | 1  |
| 1.2.1 | Objectives of the Basic Assessment Report .....                           | 1  |
| 1.2.2 | Content of the Basic Assessment Report .....                              | 2  |
| 1.3   | Legal Requirement .....   | 6  |
| 1.3.1 | National Environmental Management Act (Act 107 of 1998) ..                | 6  |
| 1.4.2 | The National Water Act (Act No 36 of 1998) .....                          | 9  |
| 1.4.3 | The National Heritage Resources Act (Act 25 of 1999) .....                | 9  |
| 1.4.4 | Additional Acts, Frameworks and Guidelines .....                          | 10 |
| 1.5   | Screening Tool and the Initial Site Sensitivity Verification Report ..... | 13 |
| 1.6   | Details and Expertise of the Environmental Assessment Practitioner .....  | 17 |
| 1.7   | Project Team .....  | 17 |
| 1.8   | Working Programme .....   | 18 |

## **CHAPTER 2: PROJECT INFORMATION .....** 19

|     |  |    |
|-----|--|----|
| 2.1 | Need and Desirability .....                                      | 19 |
| 2.2 | Locality and Regional Context .....                              | 19 |
| 2.3 | Project Description .....  | 21 |
| 2.4 | Technical Information .....                                      | 21 |
| 2.5 | Servitude Size and Route corridors .....                         | 21 |
| 2.6 | Farm and portion numbers & Surveyor General 21 Digit Codes ..... | 21 |
| 2.7 | Coordinates of Final Route .....                                 | 22 |

## **CHAPTER 3: ALTERNATIVES .....** 23

|       |  |    |
|-------|--|----|
| 3.1   | Draft route alignment as determined by Eskom ..... | 23 |
| 3.1.1 | Technical Considerations .....                     | 23 |
| 3.1.2 | Environmental Considerations .....                 | 23 |
| 3.1.3 | The draft route alignment .....                    | 23 |
| 3.2   | Route selection process .....                      | 24 |
| 3.2.1 | Specialist Studies .....                           | 24 |
| 3.2.2 | Public Participation .....                         | 25 |
| 3.3   | The Preferred Route .....                          | 25 |
| 3.4   | The No Go Alternative .....                        | 27 |
| 3.5   | Conclusion of Alternatives .....                   | 27 |

## **CHAPTER 4: SPECIALIST STUDIES -----28**

|       |   |    |
|-------|---|----|
| 4.1   | General / Route Description of the Study Area -----       | 28 |
| 4.2   | Biophysical Environment-----                              | 29 |
| 4.2.1 | Ecological Assessment of the Flora and Watercourses ----- | 29 |
| 4.2.2 | Bird Impact Assessment-----                               | 46 |
| 4.3   | Cultural / Historical Environment-----                    | 47 |
| 4.3.1 | Heritage Impact Assessment-----                           | 47 |

## **CHAPTER 5: PUBLIC PARTICIPATION-----49**

|     |  |    |
|-----|--|----|
| 5.1 | Objectives of the Public Participation Programme -----   | 49 |
| 5.2 | Public Participation Process Followed-----   | 49 |
| 5.3 | Communication during the Initial Advertising Period up to the<br>Distribution of the BAR ----- | 51 |
| 5.4 | Comment received on the Draft Basic Assessment Report-----                                     | 54 |
| 5.5 | Conclusion of the Public Participation Programme-----  | 54 |

## **CHAPTER 6: IMPACTS, IMPACT ASSESSMENT AND MITIGATION -----55**

|       |   |    |
|-------|---|----|
| 6.1   | Methods Used to Identify Impacts -----                        | 55 |
| 6.2   | List of Impacts Associated with the Development -----         | 55 |
| 6.2.1 | Expected Negative Impacts-----                                | 55 |
| 6.2.2 | Expected Positive Impacts -----                               | 56 |
| 6.2.3 | Cumulative impact -----                                       | 56 |
| 6.3   | Generic Eskom Environmental Management Programme (EMPr) ----- | 56 |
| 6.4   | Environmental Impact Assessment -----                         | 57 |
| 6.4.1 | Methodology Used in Ranking of Impacts-----                   | 57 |
| 6.4.2 | Impact Assessment Tables-----                                 | 58 |
| 6.4.2 | Environmental Management Programme (EMPr)-----                | 72 |
| 6.5   | Conclusion of Impact Assessment-----                          | 73 |
| 6.5.1 | Summary of Impact Assessment Tables-----                      | 73 |
| 6.5.2 | Conclusion-----   | 74 |

## **CHAPTER 7: CONCLUSION -----75**

|       |  |    |
|-------|--|----|
| 7.1   | Assumptions, Uncertainties, and Gaps in Knowledge-----           | 75 |
| 7.2   | Environmental Impact Statement -----                             | 75 |
| 7.3   | Why the Activity Should, or Should Not be Authorised -----       | 77 |
| 7.4   | Environmental Authorisation -----                                | 77 |
| 7.4.1 | Period for which the EA is required -----                        | 77 |
| 7.4.2 | Date on which the activity will be concluded-----                | 77 |
| 7.4.3 | Date when post-construction monitoring must be finalised -       | 78 |
| 7.5   | Recommendation by the Environmental Assessment Practitioner----- | 78 |
| 7.6   | Affirmation by the Environmental Assessment Practitioner -----   | 78 |

## **APPENDICES**

### **Appendix A: Maps & Photos**

- (A1) Locality Map (Topographical and on Google Earth)
- (A2) Preferred and Alternative Route Map
- (A3) 250m Coordinates of Alternative 1 (Preferred Alternative)
- (A4) Environmental Sensitivities based on specialist studies
  - A4a – Ecological Sensitivity Map (environmental sensitivities and watercourses)
  - A4b - Environmental Sensitivity Map
  - A4c – Delineated Watercourses (Aquatic Sensitivity Map)
  - A4d – Vegetation Units Map
- (A5) SANBI Maps
  - A5a – CBAs and ESAs
  - A5b – Protected Areas
  - A5c – Rivers and Wetlands
  - A5d – Threatened Ecosystem Status
- (A6) Preferred and Alternative KMZ File (electronic copy only)
- (A7) Photo Report of the study area

### **Appendix B: Technical Information**

- (B1) Recommended 7649 monopole steel structure to prevent bird electrocutions

### **Appendix C: Specialist Reports**

- (C1) An Ecological Assessment of the Flora and Watercourses
- (C2) Bird Impact Assessment
- (C3) Cultural Heritage Impact Assessment

### **Addendum D: Public Participation Programme**

- (D1) Register of Interested & Affected Parties
- (D2) First Phase Notification Letter and Proof of Distribution
- (D3) Onsite Advertisement and Proof of Placement
  - D3(a) Onsite Advertisement
  - D3(b) Proof of Placement of Onsite Advertisement
- (D4) Newspaper Advertisements and Proof of Placement
  - D4(a) Newspaper Advertisement
  - D4(b) Proof of Placement of Newspaper Advertisement
- (D5) Written Correspondence during the Initial Advertising Period
- (D6) Proof of Distribution of Draft Basic Assessment Report (to be included in the Final BAR)
- (D7) Written Correspondence on Draft Basic Assessment Report (to be included in the Final BAR)
- (D8) Comment & Responses Report

### **Appendix E: Environmental Management Programme**

- (E1) Environmental Management Programme
  - o Addendum A - Landscape Dynamics Company Profile and CVs
  - o Addendum B - Screening Tool Report
  - o Addendum C – Recommended 7649 monopole structure
  - o Addendum D - Coordinates of Final Alternative
  - o Addendum E – EMP Generic published by DEFF 22 March 2019

### **Appendix F: Additional Information**

- (F1) Landscape Dynamics Company Profile and condensed CVs of EAPs
- (F2) Specialists' Declaration of Independence
- (F3) Specialists' CVs
- (F4) Confirmation of SIP 10 Status
- (F5) Screening Tool Report

## **LIST OF ABBREVIATIONS**

|                |  |
|----------------|--|
| BAR            | Basic Assessment Report  |
| BID            | Background Information Document  |
| CBA            | Critical Biodiversity Area   |
| DBAR           | Draft Basic Assessment Report  |
| DEFF           | National Department of Environment, Forestry & Fisheries                         |
| DSR            | Draft Scoping Report   |
| DWS            | Department of Water & Sanitation   |
| DMR            | Department of Mineral Resources  |
| EA             | Environmental Authorisation  |
| EAP            | Environmental Assessment Practitioner  |
| ECO            | Environmental Control Officer  |
| EIA            | Environmental Impact Assessment  |
| EIR            | Environmental Impact Report  |
| EMF            | Environmental Management Framework   |
| EMPr           | Environmental Management Programme   |
| ESA            | Ecological Support Area  |
| EWT            | Endangered Wildlife Trust  |
| FBAR           | Final Basic Assessment Report  |
| GNR            | Government Notice Regulation   |
| ha             | Hectare(s)   |
| HIA            | Heritage Impact Assessment   |
| I&AP's         | Interested and Affected Parties  |
| IEM            | Integrated Environmental Management  |
| m <sup>3</sup> | Cubic metres   |
| Mamsl          | Metres above mean sea level  |
| n/a            | Not applicable   |
| NEMA           | National Environmental Management Act, 1998 (Act No 107 of 1998)                 |
| NEMPAA         | National Environmental Management: Protected Areas Act, 2003 (Act No 57 of 2003) |
| NEMWA          | National Environmental Management: Waste Act, 2008 (Act No 59 of 2008)           |
| PIA            | Palaeontological Impact Assessment   |
| PPP            | Public Participation Process/Programme   |
| SAHRA          | South African Heritage Resources Agency  |
| SANBI          | South African National Biodiversity Institute                                    |
| SR             | Scoping Report   |
| PHRA           | Provincial Heritage Resources Authority  |
| PoS            | Plan of Study  |
| SIP            | Strategic Infrastructure Project   |
| SS             | Substation   |
| TRF            | Transnet Freight Rail  |
| TS             | Traction Station / Traction Substation   |
| WULA           | Water Use License Application  |

### **ELECTRICAL TERMS AND ABBREVIATIONS**

|                         |  |
|-------------------------|--|
| Eskom SOC               | South Africa's Electricity Supply Commission (A State Owned Company) |
| ICNIRP                  | International Commission for Non-Ionising Radiation Protection       |
| IEP                     | Integrated Energy Plan   |
| ISEP                    | Integrated Strategic Electricity Planning                            |
| MTS                     | Main Transmission System   |
| NDP                     | Network Development Plan   |
| NERSA                   | National Energy Regulator of South Africa                            |
| PV                      | Photovoltaic (as in solar panels)                                    |
| <i>Voltage :</i>        |  |
| kV                      | Kilovolt (1kV = 1 000V)  |
| MVA                     | Mega Volt Ampère   |
| <i>Units of power :</i> |  |
| kW                      | Kilowatt (1kW= 1 000W)   |
| MW                      | Megawatt (1MW=1 000kW)   |

## EXECUTIVE SUMMARY

### INTRODUCTION and PROJECT DESCRIPTION

Eskom Holdings Limited SOC (Limpopo Operating Unit) is planning to construct an approximate 18km 132kV power line from the existing Merensky substation to connect to the Merensky-Jane Furse-Uchoba 132kV power line T-off point (this line has been approved for construction and construction will commence in due course). The Merensky-Uchoba power line will serve the small town of Jane Furse and six mines in the Uchoba area.

Eskom Holdings Limited SOC has appointed Landscape Dynamics Environmental Consultants to apply for Environmental Authorisation for this **Eskom Merensky-Uchoba Project** with the Department of Environmental, Forestry & Fisheries (DEFF), which is the Competent Authority for this project.

### LOCALITY

The power line runs roughly between the towns of Steelpoort and Kennedy's Vale in the jurisdiction of the Fetakgomo Tubatse Local Municipality in the Sekhukhune District Municipality, Limpopo Province.

### ROUTE CORRIDOR TO BE APPROVED

The route corridor investigated has the Steelpoort River as the western border and the R555 provincial road as the eastern border. The total corridor size is approximately 1 280 hectares. It is requested that the *corridor* be approved as part of the environmental authorisation and not the servitude only. This will enable reasonable adjustments within the corridor during the walk-down and servitude negotiations with the relevant landowners without having to enter into an additional environmental authorisation process. *Note that Eskom will however only register the required servitude within the route corridor and not the entire corridor.*

### MAIN LEGAL REQUIREMENT

- **National Environmental Management Act (Act 107 of 1998)**

This application is done in terms of the National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA) and the Environmental Impact Assessment Regulations of December 2014, as amended in April 2017 (Government Notice Nr 326). Environmental Authorisation is requested for the following listed activities:

- Government Notice 327: Listing Notice 1: Number 11
- Government Notice 324: Listing Notice 3: Numbers 4 and 12

- ***The National Water Act (Act No 36 of 1998)***

The final route selection was influenced by the findings of the aquatic specialist. The route will cross the Steelpoort River twice and it will also cross various drainage lines. The following however applies:

- Pylons will not be placed closer than 32m from any watercourse.
- The river and tributaries were delineated and all pylons will be placed outside of the delineated areas.
- Construction disturbance is not allowed within the delineated buffer areas.

Because no disturbance (temporary or permanent) will take place within the delineated buffers, Section 21(c) and/or 21(i) of the NWA will not be triggered. It is therefore not a requirement to apply for a Water Use License or a General Authorisation.

***The National Heritage Resources Act (Act 25 of 1999)***

The proposed project falls within the scope of Section 38 of the National Heritage Resources Act (NHRA) and the applicable activity is:

- the construction of a power line exceeding 300m in length;

The authorisation process in terms of the NHRA forms part of the EIA process and both the South Africa Heritage Resource Agency (SAHRA) and the Limpopo Provincial Heritage Resources Authority (LIHRA) was approached for comment. No heritage resources of significance were identified and objections in this regard are therefore not foreseen.

## **STRATEGIC INFRASTRUCTURE PROJECTS**

Strategic Infrastructure Projects (SIPs) were identified to unlock the economic development and maximise the returns on investment in the form of increased jobs, growth and economic potential. This Eskom Merensky-Uchoba Project is SIP 10 project:

- SIP 10: Electricity transmission and distribution for all

## **ALTERNATIVES**

The investigated route alternatives are shown in the Route Alternatives Map attached as Appendix (A2). A comprehensive discussion on the route selection process as influenced through the public participation process and in-depth specialist input is provided in Chapter 3 of this Report. In summary, the following applies: Eskom determined a power line route at the commencement of the study which was based on technical criteria as well as input from their environmental department. The ecological specialist study undertaken for this project however identified high sensitive biodiversity areas within this route option. The route alignment was amended in order to preserve these high functioning ecosystems. To date, no objections regarding the proposed alternatives were received from landowners or the public (inclusive of government departments, municipalities, etc.).

## SPECIALIST STUDIES

- *Ecological Assessment*

Nine different vegetation units were identified within the study area and two of these units are having a high conservation value. The impact that the originally Eskom proposed route will have on these areas cannot be mitigated. In order to conserve these high functioning ecosystems it was therefore required to reroute the power line so that the alignment avoids these areas in its entirety. The Preferred Route (Alternative 1) incorporates this recommendation and has a low / negligible impact on these sensitive areas.

Only one **red data specie**, which is also a protected species, and nine **protected trees** were identified within the study area. It is required to apply for a license with DEFF as well as the Department of Nature Conservation (Limpopo) before these trees may be cut or removed in any way.

It is concluded that all impacts could be mitigated to LOW or VERY LOW levels.

- *Watercourses*

No natural wetlands were found to be present on the proposed route or corridor area with the watercourse systems being the Steelpoort River and tributaries. The power line will cross the Steelpoort River twice as well as various drainage lines.

Pylons will not be placed closer than 32m from the river's edge or that of the tributaries. The river and tributaries were delineated and all pylons will be placed outside of the delineated areas. Construction disturbance is not allowed within the delineated buffer areas. A Water Use License Application (WULA) with the Department of Human Settlement, Water & Sanitation is therefore not required.

The impact on watercourses is deemed to be LOW and can be mitigated to VERY LOW.

- *Bird Impact Assessment*

The impact that electrocutions, collisions and habitat transformation could have on the birds of the area is judged to be LOW and can be further reduced to VERY LOW with the application of mitigation measures.

- *Heritage Impact Assessment*

No heritage resources were found, but a walk-down is nevertheless recommended to ensure that no sensitive features that could have been missed during the site investigation will be impacted on. Impact on the heritage resources of the area will be NEGLIGIBLE.

A large corridor (1 420 hectares) along the length of the line was investigated by the specialist team. Walk-downs by the ecologist, heritage- and avifauna specialist must be conducted after the



Environmental Authorisation has been issued and once the draft pylon positions have been decided on and pegged. This would ensure sensitive tower and infrastructure placement within the corridor. The purpose is to avoid as far as possible sensitive plant communities, large / protected trees, heritage sites and bird nesting areas.

## **IMPACT ASSESSMENT**

The main potential negative impacts associated with the project are the following:

### **Expected Negative Impacts**

#### *Planning and Design Phase*

- Impact 1: Route Selection: Impact on landowners
- Impact 2: Route Selection: Fauna, Flora, Avifauna and Heritage

#### *Construction Phase*

- Impact 1: Impact on flora
- Impact 2: Impact on fauna
- Impact 3: Impact on birds
- Impact 4: Impact on aquatic features
- Impact 5: Impact on cultural heritage resources
- Impact 6: Risk of groundwater pollution
- Impact 7: Risk of erosion
- Impact 8: Community impact
- Impact 9: Noise and dust (air quality)

#### *Post- Construction Phase*

- Impact 1: Impacts of improper site clearance after construction
- Impact 2: Impacts associated with lack of rehabilitation

#### *Operational Phase*

- Impact 1: Impact associated with insensitive bush clearing for maintenance purposes

### **Expected Positive Impact**

- The 60 000 people of Jane Furse and the six mines at Uchoba will benefit from the proposed power line. The line will also allow these customers to increase capacity should they require to as well as provision of more electrification in the Jane Furse area.
- This project will enable a reliable supply of electricity to its customer base and provides the area with a long term solution to enhance the network performance. It is anticipated that performance will improve and the duration and frequency of supply interruptions will be minimal.

- This project forms part of the Strategic Infrastructure Projects (SIPs) and is a SIP 10 project and thereby further enhances the desirability of the proposed power line development.
- The proposed Eskom Merensky-Uchoba Project is being planned in a legal, pro-active and structured manner taking all development components, potential and restrictions into account.

### **Impact Assessment**

All impacts were assessed before and after mitigation have been applied. The significance of the impacts *after* mitigation has been rated as Low / Very Low. All the proposed mitigatory measures are included in the Environmental Management Programme provided in Appendix E.

### **PUBLIC PARTICIPATION PROGRAMME**

A comprehensive Public Participation Programme was undertaken strictly according to NEMA legal requirement. Even though the project was widely advertised relatively few comments and no objections were received. All concerns were satisfactorily addressed.

### **CONCLUSION AND RECOMMENDATION**

The preferred route alignment that is being put forward for environmental authorisation is the route that includes the recommendations made by the ecologist – Alternative 1 as per the Route Map attached as Appendix A(2). It is not recommended to approve the route originally proposed by Eskom (Alternative 2 on the said map) because the impact on the highly sensitive ecosystems cannot be mitigated and the destruction will be unacceptably high. As a summary, the following applies to the Preferred Route (Alternative 1):

- *Technical requirements*  
Eskom confirmed that the route is acceptable to them and that it meets Eskom requirement from a technical point of view.
- *Environmental considerations*  
With implementation of mitigation measures, no significant impact on the flora, fauna, watercourses, birds and heritage resources are expected. All the specialists (vegetation; aquatic; bird and heritage) confirmed that the Preferred Alternative can be supported.
- *Community Consultation (Social Impact)*  
The route is acceptable from a landowner and public perspective because, even though widely advertised, no objections were received to date.
- *Mitigation*  
The EAPs are confident that all potentially negative impact associated with the project can be mitigated to acceptable levels.

# CHAPTER 1: INTRODUCTION

## 1.1 Background

Eskom Holdings Limited SOC (Limpopo Operating Unit) is planning to construct an approximate 18km 132kV power line from the existing Merensky substation to connect to the Merensky-Jane Furse-Uchoba 132kV Power line T-off point (this line has been approved for construction and construction will commence in due course). The power line runs roughly between the towns of Steelpoort and Kennedy's Vale in the jurisdiction of the Fetakgomo Tubatse Local Municipality in the Sekhukhune District Municipality, Limpopo Province.

Eskom Holdings Limited SOC has appointed Landscape Dynamics Environmental Consultants to apply for Environmental Authorisation for this **Eskom Merensky-Uchoba Project** with the Department of Environmental, Forestry & Fisheries (DEFF), which is the Competent Authority for this project.

### ***Previously authorised section of the proposed Merensky-Uchoba route***

The first section ( $\pm 3.5$ km) of the Merensky-Uchoba power line has been authorised as part of a  $\pm 30$ km power line in 2013 under another Environmental Authorisation, with EA Reference Numbers: 12/12/20/2552 and NEAS Ref: DEA/EIA/0000712/2011.

This previously authorised line will however not be constructed due to community encroachment onto the servitude. The mentioned  $\pm 3.5$ km servitude has already been cleared and is ready for construction.

This  $\pm 3.5$ km servitude is incorporated into this application for Environmental Authorisation. It is important that this section forms part of this application so that, amongst other reasons, the construction of the line can take place under the stipulations of one Environmental Management Programme. Note that this relatively short portion of the route as described in this application follows the exact lining within the same corridor for the same applicant as the one that has previously been approved.

## 1.2 The Basic Assessment Report

### ***1.2.1 Objectives of the Basic Assessment Report***

According to the NEMA Regulations' Appendix 1, the objective of the environmental impact assessment process is to, through a consultative process

- a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- b) identify the alternatives considered, including the activity, location, and technology alternatives;
- c) describe the need and desirability of the proposed alternatives;
- d) through the undertaking of an impact and risk assessment process, inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine–
  - (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
  - (ii) the degree to which these impacts–
    - (aa) can be reversed;
    - (bb) may cause irreplaceable loss of resources; and
    - (cc) can be avoided, managed or mitigated; and
- e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to–
  - (i) identify and motivate a preferred site, activity and technology alternative;
  - (ii) identify suitable measures to avoid, manage or mitigate identified impacts; and
  - (iii) identify residual risks that need to be managed and monitored.

### 1.2.2 Content of the Basic Assessment Report

According to the NEMA 2014 Regulations (as amended in April 2017), Appendix 1, Section 3, the Basic Assessment Report must contain the information that is necessary for the competent authority to consider and come to a decision on the application. The items are listed below with appropriate reference to the relevant Chapters in the BAR where the item is addressed.

| Regulation Requirement   | Section in BAR where addressed            |
|--|---|
| (a) details of <ul style="list-style-type: none"> <li>(i) the EAP who prepared the report; and</li> <li>(ii) the expertise of the EAP, including a curriculum vitae;</li> </ul>  | Chapter 1,<br>Paragraph 1.4<br>Appendix F |
| (b) the location of the activity, including: <ul style="list-style-type: none"> <li>(i) the 21 digit Surveyor General code of each cadastral land parcel;</li> <li>(ii) where available, the physical address and farm name;</li> <li>(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;</li> </ul> | Chapter 2,<br>Paragraph 2.6               |

|   |  |
|---|--|
|   |  |
| <p>(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;<br/>or, if it is</p> <ul style="list-style-type: none"> <li>(i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or</li> <li>(ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;</li> </ul>   | <p>Chapter 2,<br/>Paragraph 2.7</p> <p>Chapter 4,<br/>Paragraph 4.1</p> <p>Appendix A</p>                                  |
| <p>(d) a description of the scope of the proposed activity, including—</p> <ul style="list-style-type: none"> <li>(i) all listed and specified activities triggered and being applied for; and</li> <li>(ii) a description of the activities to be undertaken including associated structures and infrastructure;</li> </ul>  | <p>Chapter 1,<br/>Paragraph</p>  |
| <p>(e) a description of the policy and legislative context within which the development is proposed including—</p> <ul style="list-style-type: none"> <li>(i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and</li> <li>(ii) how the proposed activity complies with and responds to the legislation</li> <li>(iii) and policy context, plans, guidelines, tools frameworks, and instruments;</li> </ul>  | <p>Chapter 1,<br/>Paragraph 1.3</p> <p>Chapter 2,<br/>Paragraph 2.3</p>  |
| <p>(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;</p>  | <p>Chapter 2,<br/>Paragraph 2.1</p>  |
| <p>(g) a motivation for the preferred site, activity and technology alternative;</p>  | <p>Chapter 3</p>   |
| <p>(h) a full description of the process followed to reach the proposed preferred alternative within the site, including</p> <ul style="list-style-type: none"> <li>(i) details of all the alternatives considered;</li> <li>(ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;</li> <li>(iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;</li> <li>(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and</li> </ul> | <p>Chapter 3</p> <p>Chapter 3</p> <p>Chapter 5,<br/>Paragraph 5.2</p> <p>Chapter 5,<br/>Paragraph 5.3</p> <p>Chapter 3</p> |

|  |   |
|--|---|
| <p>cultural aspects;</p> <p>(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts—</p> <ul style="list-style-type: none"> <li>(aa) can be reversed;</li> <li>(bb) may cause irreplaceable loss of resources; and</li> <li>(cc) can be avoided, managed or mitigated;</li> </ul> <p>(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;</p> <p>(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</p> <p>(viii) the possible mitigation measures that could be applied and level of residual risk;</p> <p>(ix) the outcome of the site selection matrix;</p> <p>(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and</p> <p>(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;</p> | <p>Chapter 6</p> <p>Chapter 6, Paragraph 6.1</p> <p>Chapter 6, Paragraph 6.2</p> <p>Chapter 6, Paragraph 6.4</p> <p>Chapter 6, Paragraph 6.4</p> <p>Chapter 3</p> |
| <p>(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including—</p> <ul style="list-style-type: none"> <li>(i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and</li> <li>(ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;</li> </ul>   | <p>Chapter 6, Paragraph 6.1</p> <p>Chapter 6, Paragraph 6.4</p> <p>Chapter 6, Paragraph 6.4</p>   |
| <p>(j) an assessment of each identified potentially significant impact and risk, including—</p> <ul style="list-style-type: none"> <li>(i) cumulative impacts;</li> <li>(ii) the nature, significance and consequences of the impact and risk;</li> <li>(iii) the extent and duration of the impact and risk;</li> <li>(iv) the probability of the impact and risk occurring;</li> <li>(v) the degree to which the impact and risk can be reversed;</li> <li>(vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and</li> <li>(vii) the degree to which the impact and risk can be avoided, managed or mitigated;</li> </ul>   | <p>Chapter 6, Paragraph 6.4</p>   |

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| (k) where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;  | Chapter 3<br>Chapter 4,<br>Paragraphs 4.2 & 4.3<br>Appendix C      |
| (l) an environmental impact statement which contains—<br><ul style="list-style-type: none"> <li>(i) a summary of the key findings of the environmental impact assessment;</li> <li>(ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and</li> <li>(iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;</li> </ul> | Chapter 7,<br>Paragraph 7.2  |
| (m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management outcomes for the development for inclusion in the EMPr;  | Chapter 6  |
| (n) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;   | Chapter 7,<br>Paragraph 7.5  |
| (o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;   | Chapter 7.1 and<br>included in specialist<br>reports in Appendix C |
| (p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;   | Chapter 7,<br>Paragraph 7.3  |
| (q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;  | Chapter 7,<br>Paragraph 7.4  |
| (r) an undertaking under oath or affirmation by the EAP in relation to<br><ul style="list-style-type: none"> <li>(i) the correctness of the information provided in the reports;</li> <li>(ii) the inclusion of comments and inputs from stakeholders and I&amp;APs;</li> <li>(iii) the inclusion of inputs and recommendations from the specialist reports</li> </ul>  | Chapter 7,<br>Paragraph 7.5  |

|   |   |
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| where relevant; and   |   |
| (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and |   |
| (s) where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;    | Not applicable  |
| (t) any specific information that may be required by the competent authority; and   | DEFF Comment on the Draft BAR is included and addressed in Paragraph 5.8 of this Final BAR and in Appendix D11. |
| (u) any other matters required in terms of section 24(4)(a) and (b) of the Act.   | Not applicable  |

## 1.3 Legal Requirement

### 1.3.1 National Environmental Management Act (Act 107 of 1998)

This application is done in terms of the National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA) and the Environmental Impact Assessment Regulations of December 2014, as amended in April 2017 (Government Notice Nr 326). Environmental Authorisation is requested for the following listed activities:

| Listing Notice 1 (GN R327) |   |  |
|----------------------------|---|--|
| Nr 11                      | The development of facilities or infrastructure for the transmission and distribution of electricity<br>(i) Outside urban areas of industrial complexes with a capacity of more than 33kV but less than 275 kilovolts | The proposed development involves an 132kV power line which will be situated on agricultural and rural land north of the R555 between the towns of Steelpoort and Kennedy Vale |

| Listing Notice 3 (GN R324) |  |  |
|----------------------------|--|--|
| Nr 4                       | The development of a road wider than 4 meters with a reserve less than 13,5m in Limpopo (outside | Access roads for construction and maintenance purposes are required. |



|       |  |   |
|-------|--|---|
|       | urban areas) in Critical Biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.           |   |
| Nr 12 | The clearance of an area of 300 square metres or more of indigenous vegetation... in Limpopo within critical biodiversity areas identified in bioregional plans. | Selective bush clearing will be required along the entire the Eskom servitude area. Almost the entire site is situated within a CBA1, CBA2 or ESA area. |

NEMA can be regarded as the most important piece of general environmental legislation. It provides a framework for environmental law reform and covers three areas, namely:

- Land, planning and development;
- Natural and cultural resources, use and conservation; and
- Pollution control and waste management.

The law is based on the concept of sustainable development. The objective of the NEMA is to provide for co-operative environmental governance through a series of principles relating to:

- The procedures for state decision-making on the environment; and
- The institutions of state which make those decisions.

NEMA principles serve as:

- A general framework for environmental planning;
- Guidelines according to which the state must exercise its environmental functions; and
- A guide to the interpretation of NEMA itself and of any other law relating to the environment.

NEMA principles are the following:

- Environmental management must put people and their needs first;
- Development must be socially, environmentally and economically sustainable;
- There should be equal access to environmental resources, benefits and services to meet basic human needs;
- Government should promote public participation when making decisions about the environment;
- Communities must be given environmental education;
- Workers have the right to refuse to do work that is harmful to their health or to the environment;
- Decisions must be taken in an open and transparent manner and there must be access to information;
- The role of youth and women in environmental management must be recognised;
- The person or company who pollutes the environment must pay to clean it up;
- The environment is held in trust by the state for the benefit of all South Africans; and
- The utmost caution should be used when permission for new developments is granted.

## **Chapter 2 of NEMA**

Chapter 2 of NEMA provides a number of principles that decision-makers have to consider when making decisions that may affect the environment, therefore, when a Competent Authority considers granting or refusing environmental authorisation based on an Environmental Impact Assessment, these principles must be taken into account.

The NEMA principles with which this application conforms are described as follows —

1. Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.
2. Development must be socially, environmentally and economically sustainable.
3. Sustainable development requires the consideration of all relevant factors.

The social, economic and environmental impacts of activities, including disadvantages and benefits, were considered, assessed and evaluated, and informed decision-making by the authority is hereby made possible.

## **Section 23 of NEMA**

The stated objectives of Section 23 are to ensure integrated decision-making and co-operative governance so that NEMA's principles and the general objectives for integrated environmental management of activities can be achieved. The goals are to

- a) promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment;
- b) identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2;
- c) ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;
- d) ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;
- e) ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and
- f) identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2.

For this project the following actions were taken to reach the general objectives of Integrated Environmental Management as set out in Section 23 of NEMA:

- a) Applicable environmental, economic and social aspects have been assessed, thereby ensuring an integrated approach in order to balance the needs of all whom would be affected by this development.

- b) Impacts have been described, assessed and mitigation measures have been supplied in order to ensure that all identified impacts are mitigated to acceptable levels. Alternatives have been thoroughly assessed and the best possible solution represents this development proposal.
- c) The development proposal has to be evaluated and approved by DEFF and no construction may commence prior to the issuing of the Environmental Authorisation.
- d) The procedures which were followed during the public participation programme were based on the NEMA EIA Regulations, December 2014, as amended in April 2017.
- e) DEFF will take all information as represented in this report into consideration and may request further information should they feel that further studies/information is required before an informed decision can be made.
- f) The mitigation measures as supplied in this report together with the measures as per the Environmental Management Programme are deemed to be the best way to manage anticipated impacts.

*By providing electricity whilst not impacting negatively on the environment, the Eskom Merensky-Uchoba project would contribute to a sustainable environment.*

#### **1.4.2 The National Water Act (Act No 36 of 1998)**

The National Water Act guides the management of water in South Africa as a common resource. The Act aims to regulate the use of water and activities which may impact on water resources through the categorisation of 'listed water uses' encompassing water extraction, flow attenuation within catchments as well as the potential contamination of water resources. The Department of Human Settlement, Water & Sanitation (DHSWS) is the administering body in this regard.

The final route selection was influenced by the findings of the aquatic specialist. The route will cross the Steelpoort River twice and it will also cross various drainage lines. The following however applies:

- Pylons will not be placed closer than 32m from the river's edge or that of the tributaries.
- The river and tributaries were delineated (refer to the map in Appendix A) and all pylons will be placed outside of the delineated areas.
- Construction disturbance is not allowed within the delineated buffer areas.

Because no disturbance (temporary or permanent) will take place within the delineated buffers, Section 21(c) and/or 21(i) of the NWA will not be triggered. It is therefore not a requirement to apply for a Water Use License or a General Authorisation.

#### **1.4.3 The National Heritage Resources Act (Act 25 of 1999)**

The proposed project falls within the scope of Section 38 of the National Heritage Resources Act and the applicable activities are:

- the construction a power line exceeding 300m in length;

The authorisation process in terms of the NHRA forms part of the EIA process. A Heritage Impact Assessment was electronically submitted to the South Africa Heritage Resource Agency (SAHRA) via SAHRIS as well as to the Limpopo Provincial Heritage Resources Authority (LIHRA) as part of the public participation programme. Their comment / concerns will be addressed in the Final BAR.

#### **1.4.4 Additional Acts, Frameworks and Guidelines**

##### **Strategic Infrastructure Project (SIP)**

The Presidential Infrastructure Co-ordination Commission (PICC) was inaugurated in September 2001, bringing in key Ministers, Premiers and Mayors for the first time into a joint forum to promote infrastructure co-ordination and decision making. Resulting from the PICC work plans for future projects and infrastructure initiatives from state owned enterprise, national, provincial and local departments have been clustered, sequenced and prioritised into 18 strategic integrated projects (SIPs). Together these SIPs unlock the economic development and maximise the returns on investment in the form of increased jobs, growth and economic potential. This will be a continuous process creating a pipeline of projects into the future that gives substance to the long term NDP, and certainty to South Africa's Development.

This Eskom Merensky-Uchoba Project is a SIP 10 project. *Refer to Appendix F for a letter confirming the SIP status of the Eskom Merensky-Uchoba Project.*

##### **SIP 10: Electricity transmission and distribution for all**

- 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 backlog, the national broadband roll-out and the freight rail line development to leverage off regulatory approvals, supply chain and project development capacity.

##### **Limpopo Province Spatial Development Plan (2015)**

The identified key sectors in the Limpopo Province (Agriculture, Mining, Tourism and Manufacturing) combined with opportunities identified by the municipalities which could assist to stimulate economic growth, poverty reduction and overall economic impact should be supported wherever possible. Economic development opportunities are the key determinant in the settlement patterns. Economic development, in turn, typically responds to the availability of Environmental Capital (e.g. water, suitable agricultural soil, mining resources, etc.) and Infrastructural Capital (e.g. roads, electricity, railway lines, bulk engineering services, etc.).

The proposed power line will serve the inhabitants of the small town of Jane Furse as well as industries within the area which will unlock economic opportunities within the Limpopo Province. The project is therefore in line with the principles of the PSDF.

### ***Sekhukhune District Draft Development Plan (2020/2021)***

The main sectors of Sekhukhune District that contribute to the growth of economy in the district are Agriculture, Mining and Community Services. Mining is the biggest contributor in the economy of the district and it is forecasted to grow fastest at an average of 5.64% annually from R 12.4 billion in Sekhukhune District Municipality to R 16.3 billion in 2023. The mining sector is estimated to be the largest sector within the Sekhukhune District Municipality in 2023, with a total share of 53.0% of the total GVA (as measured in current prices), growing at an average annual rate of 5.6%. The sector that is estimated to grow the slowest is the construction sector with an average annual growth rate of 0.21%. The District Municipality remains focused and committed to the vision “Sekhukhune District Municipality - a leader in integrated economic development and sustainable service delivery”

While the district experiences new mining developments, they are concentrated in the Fetakgomo Tubatse Local Municipality and other parts of the district still suffer poverty. The programmes with high economic impact should be planned and implemented in order to reduce unemployment and the scourge of poverty.

The Fetakgomo Tubatse Local Municipality is located north of N4 highway, Middleburg, Belfast and Mbombela; and east of the N1 highway; Groblersdal and Polokwane. The municipality is largely dominated by rural landscape with only 06 (six) proclaimed townships. The Fetakgomo Tubatse LM is situated on fertile soils alongside the Lepelle, Leppellane and Spekboom Rivers, offering great agricultural potential. Furthermore, the Municipality is surrounded by beautiful mountains, and boasts a rich cultural history. It generally features a dispersed settlement structure, with a number of secondary / gravel roads serving these. Atok and Apel represent the most prominent settlement areas in the western extents of the municipality and Driekop, Burgersfort, Steelpoort and Orichstad in the eastern parts.

Due to the concentration of mining activities along the R37 and R555 (Dilokong Corridor), the Municipality functions as a strong economic centre within the SDM. As such, mining is not only the major source of employment and economic growth within the municipality, but also the District. Minerals found within the Municipality include platinum, chrome, vanadium, andalusite, silica and magnetite. The current and planned expansion of mining activities within the LM is placing extreme pressure on the environment, and is resulting in land use conflicts with other uses such as agriculture, retail, trade, services and agriculture also contribute to the municipal economy. Agricultural products cultivated in this area include citrus, vegetables, corn and maize. Livestock farming includes cattle, goats and game.

The Municipality generally features a dispersed settlement structure, with a greater concentration of settlements within the western extents. Although featuring a number of major roads (R37, R36 and R555), the LM’s numerous settlements are only accessible via secondary gravel roads.

## ***Environmental Management Framework for the Olifants and Letaba Rivers Catchment Areas***

The proposed power line project falls within the *Management Zone E: Rural Sekhukhune/platinum mining focus area*.

A large potential conflict occurs in the areas that have been identified as future potential mining areas overlap with Centres of Endemism, which contain endangered vegetation. Thus a conflict of opportunity occurs between the mining sector and the conservation/ecotourism sector. The other major anticipated conflict is that of the mining sector and agricultural sector competing in respect to water allocation.

It is however important to note that the construction of the power line as proposed will not cause conflict between these sectors because the sensitive biodiversity areas will not be impacted on by the power line. These areas will be conserved and current farming practices (mainly grazing) can continue within the Eskom servitude. No development (temporary or permanent) will take place within the delineated watercourse buffers. The proposed development activity will not use water.

### ***Relevant Legislation and Standards***

| <b>Title of legislation, policy or guideline</b>  | <b>Applicability to Project</b>   | <b>Regulating authority</b>                           |
|---|---|---|
| National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA) and the Environmental Impact Assessment Regulations published in Government Notice No. R.982, December 2014, as amended in April 2017 | Authorisation is required – refer to Paragraph 1.3.1 above                                  | National Department of Environmental Affairs          |
| The National Water Act, 1998 (Act No 36 of 1998)  | Water use authorisation is not required– refer to Paragraph 1.3.2 above                     | The Department of Water and Sanitation                |
| National Heritage Resources Act, (NHRA), (Act 25 of 1999)   | Comment must be obtained – refer to paragraph 1.3.4 above                                   | South African Heritage Agency (SAHRA) and Limpopo HRA |
| National Environmental Management: Biodiversity Act (Act no 10 of 2004) NEMBA   | Parts of the project falls within a CBA - Authorisation will be granted by DEFF via the EA. | National Department of Environmental Affairs          |
| National Environmental Management: Waste Act (Act No. 59 of 2008) 2008  | Authorisation is not required   | Department of Environmental Affairs                   |
| Mineral and Petroleum Resources Development Act (No 28 of 2002)   | Authorisation is not required   | Department of Mineral Resources                       |
| Conservation of Agricultural Resources Act (43 of 1983)   | Authorisation is not required   | Department of Agriculture                             |

|   |  |   |
|---|--|---|
| National Forests Act (No 84 of 1998) and Government Notice 1339 of 6 August 1976 (promulgated under the Forest Act (No 122 of 1984) for protected tree species), the removal, relocation or pruning of any protected plants | Permits could be required to remove and/or replant protected tree species (nine species occur within the study area). Permit requirements will be identified during the walk-down phase of this project. | Department of Agriculture, Forestry and Fisheries |
| Fencing Act (No 31 of 1963): Amended by the Agricultural Laws Rationalisation Act, Act No 72 of 1998  | Authorisation is not required  | South African Government                          |
| <u>South African National Standard</u> Civil Engineering Standards and Publications   | To be implemented in the design, construction and operational phases of the project.   | South African Bureau of Standards                 |
| National Development Plan (NDP) (2030)  | To be considered   | SA National Government                            |

## 1.5 Screening Tool and the Initial Site Sensitivity Verification Report

The Screening Tool Report is attached as Addendum F(5).

### ***Environmental Sensitivities***

The Screening Tool Report identified certain Environmental Sensitivities within the proposed development area. These identified sensitivities are indicative only and must be verified on site by a suitably qualified person before the need of the recommended specialist assessments can be confirmed. Only the highest environmental sensitivity is indicated.

| Theme                                      | Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|--|-----------------------|------------------|--------------------|-----------------|
| Agriculture Theme                          | X                     |                  |                    |                 |
| Animal Species Theme                       |                       |                  | X                  |                 |
| Aquatic Biodiversity                       |                       |                  |                    | X               |
| Archaeological and Cultural Heritage Theme |                       | X                |                    |                 |
| Civil Aviation Theme                       |                       | X                |                    |                 |
| Plant Species Theme                        |                       | X                |                    |                 |
| Defence Theme                              |                       |                  |                    | X               |
| Terrestrial Biodiversity Theme             | X                     |                  |                    |                 |

### ***Specialist assessments identified***

Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate the reason for not including any of the identified specialist studies including the provision of photographic evidence of the site situation.

## ***Initial Site Sensitivity Verification Report***

Refer to Appendix A(7) for a Photo Report of the study area.

In order to confirm the site sensitivities as identified in the Screening Tool Report and listed above, a site visit was undertaken by

- Eskom engineers
- Eskom Land & Rights personnel
- Landscape Dynamics Environmental Consultants (the two EAPs working on this project have a combined experience of 38 years in the undertaking of EIAs)
- Ecologist (flora and aquatic)
- Avifauna specialist
- Cultural / Heritage specialist

These suitably qualified people ground-truth the site sensitivities and concluded that only the following specialist studies are necessary for this project:

- An Ecological Assessment of the Flora and Watercourses
- Bird Impact Assessment
- Cultural Heritage Impact Assessment

The Impact Assessments as mentioned below were identified in the Screening Tool Report. A motivation is provided next to each study as to why the recommendation is not required (where applicable):

| <b>Impact Assessment</b>       | <b>Motivation</b>   |
|--------------------------------|---|
| Agricultural Impact Assessment | <p>The proposed development does not involve the change in land use from agriculture to any other land use. Agricultural activities can (in some cases with certain restrictions) continue underneath the new power line. The portions of the farms affected by this project are mostly used for grazing and do not involve intensive farming practices associated with irrigation spill points.</p> <p>In addition, all the directly affected landowners of the agricultural properties had been contacted and no objections to the development were received. The following key stakeholders had also been notified of the project and no comment was received up to date which is an indication that the proposed project is not unwanted in a predominantly farmland area :</p> <ul style="list-style-type: none"><li>• Department of Agriculture, Forestry and Fisheries: Land Use and Soil Management, National Land Care Secretariat as well as the Resource Auditor</li></ul> |



|  |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>• Agri Limpopo</li> </ul> <p>The EAP can therefore with confidence state that the loss of relative small portions of land will not impact on the agricultural viability of the relevant farms and/or the macro area. An agricultural study is therefore not required for the purpose of this project.</p>  |
| Visual Impact Assessment                               | <p>The power line is not situated within a visual sensitive area. There are numerous existing, planned and approved, electrical infrastructures within the macro area. Mining and heavy industrial activities are visible from the main arterial roads within the vicinity of the proposed new power line. The study site also falls within the Dilikong Corridor, which is the concentration of mining activities along the R37 and R555.</p> <p>Even though large parts of the power line will be constructed within a rural landscape, the developments as above are visible along most of the route.</p> <p>Furthermore, the visual aspect of the power line was not mentioned as an objection / concern during the public participation conducted to date.</p> <p>The EAPs hereby concluded that a Visual Impact Assessment will not influence the outcome of this project and should therefore not be a requirement for the successful execution thereof.</p> |
| Archaeological and Cultural Heritage Impact Assessment | <p>An <i>Archaeological Impact Assessment</i> was done and is summarised in Chapter 4 and included under Appendix C of this Report. Further information in this regard will be provided if requested by SAHRA.</p>  |
| Palaeontology Impact Assessment                        | <p>This study will be done if it is requested by SAHRA.</p>   |
| Terrestrial Biodiversity Impact Assessment             | <p>An <i>Ecological Assessment of the Flora and Watercourses</i> was done and is summarised in Chapter 4 and included under Appendix C of this Report.</p>  |
| Aquatic Biodiversity Impact Assessment                 | <p>This component is addressed under the <i>Ecological Assessment of the Flora and Watercourses</i> as mentioned above.</p>   |

|   |  |
|---|--|
| Avian Impact Assessment                       | An <i>Avifauna Impact Assessment</i> was done and is summarised in Chapter 4 and included under Appendix C of this Report.   |
| Civil Aviation Assessment                     | <p>The South African Civil Aviation Authority (CAA) is included in the IAP Register and was invited to provide comment on this project. To date no comment was received. A study will be done should it be requested by the CAA.</p> <p>It is however important to note that the CAA has standard requirements for power lines and Eskom confirmed that this always forms part of the tower detail design. They therefore adhered to CAA requirements as standard practice.</p>  |
| Radio Frequency Interference (RFI) Assessment | RFI falls within the mandate of the Department of Higher Education, Science and Technology in terms of the Astronomy Geographic Advantage Act. The EAPs are of the opinion that a power line would not pose interference with radio frequencies and is therefore not required for this project.  |
| Geotechnical Assessment                       | <p>Eskom has site-specific geotechnical investigations which they undertake during the design phase of the project (once the routes had been confirmed during the EIA process). Furthermore, the final design of the foundations are done by the Eskom engineers strictly according to generally acceptable as well as Eskom-specific engineering standards and norms, taking the site-specific geotechnical constraints and recommendations into account.</p> <p>The EAP can therefore with confidence state that a geotechnical study during the EIA stages of the project will not impact on the viability of the project and is therefore not required as part of the studies for Environmental Authorisation.</p> |
| Plant Specie Assessment                       | This component is addressed under the <i>Ecological Assessment of the Flora and Watercourses</i> as mentioned above.   |
| Animal Specie Assessment                      | This component is addressed under the <i>Ecological Assessment of the Flora and Watercourses</i> as mentioned above.   |

## 1.6 Details and Expertise of the Environmental Assessment Practitioner

Landscape Dynamics CC is the Environmental Consultants appointed for this project. Landscape Dynamics is an environmental consultancy firm established in May 1997. The main line of business since that time up to the present is the compilation of environmental impact assessments. Landscape Dynamics has a broad client base from both the private and government sectors which has developed over the past 22 years of professional services supplied.

The operating base for Landscape Dynamics is the entire South Africa; with local representation in Gauteng, the North West Province, Mpumalanga, the Western Cape, the Northern Cape and Limpopo.

The Environmental Assessment Practitioners (EAPs) for this project are Ms Annelize Grobler and Ms Susanna Nel. Both EAPs are registered with EAPASA. The Landscape Dynamics Company Profile with the relevant condensed Curriculum Vitae is attached in Appendix F1.

## 1.7 Project Team

The impact that this project might have on the environment can only effectively be assessed if all the environmental project components had been satisfactorily identified and considered. A multi-disciplinary approach is therefore required for this basic Environmental Impact Assessment process.

The EIA Project Team members are the following (Company Profiles, CV's and Declaration of Interest of the specialists are attached in Appendix F):

| Company Name                                      | Contact Person(s)                     | Responsibility and/or Project Component  |
|---|---------------------------------------|--|
| Landscape Dynamics                                | Ms Annelize Grobler<br>Ms Susanna Nel | EIA Project Management<br>Environmental Assessment Practitioners<br>Public Participation Programme |
| Enviroguard Ecological Services                   | Prof Leslie Brown                     | Vegetation Ecological Assessment<br>Aquatic Statement  |
| Archaeon Cultural & Heritage Resource Consultants | Prof Anton van Vollenhoven            | Heritage Impact Assessment   |
| Chris van Rooyen Consulting                       | Chris van Rooyen                      | Avifauna Impact Assessment   |
| Afrimage Photography                              | Mr Albert Froneman                    | Mapping and GIS support  |

The EIA Project Team is supported by the following team members from within Eskom:

| <b>Division within Eskom<br/>Group Capital Division</b> | <b>Contact Person</b>     | <b>Responsibility and/or Project<br/>Component</b>  |
|---|---------------------------|---|
| Environment   | Ms Tshifhiwa Matamela     | Manager: Land Use Development                       |
| Environment   | Ms Munzhedzi Mudau        | Applicant Representative &<br>Environmental Manager |
| Land & Rights   | Mr Xander Neethling       | Compensation and Servitude Acquisition              |
| Land & Rights   | Mr Christopher Ngaledzani | Land & Rights Negotiator                            |

## 1.8 Working Programme

| <b>Activity</b>   | <b>Date</b>      |
|---|------------------|
| Date of Site Visit with Professional Team   | 25 February      |
| Date specialist studies completed   | 24 April         |
| Review of Draft BAR and Application form by Eskom (submitted 25 May)  | 8 June 2020      |
| Submission of Draft BAR and Application Form to DEFF<br>(this will be done simultaneously)                      | 10 June 2020     |
| <i>Commencement of Public Participation &amp; advertising</i>   |                  |
| • First Phase Notification Letters sent to IAPs   | 11 March 2020    |
| • Placement of newspaper ads  | 12 March 2020    |
| • Placement of onsite ads   | 25 February 2020 |
| • Draft BAR sent to IAPs (30 day commenting period plus holidays)   | 10 June 2020     |
| Communication and correspondence with IAPs plus amendment<br>to Draft BAR (could include route amendments, etc) | June & July 2020 |
| Submission of Final BAR to DEFF   | 31 July 2020     |
| ***Date EA received   | 16 October 2020  |
| Notification to all I&AP's of EA and right to appeal  | 21 October 2020  |
| 20 days appeal period ended   | 11 November 2020 |

\*\*\* It is expected that the 107 day DEFF timeframe could be shortened because of the fact that this project is a SIP project as illustrated in Paragraph 1.4.4.

## CHAPTER 2: PROJECT INFORMATION

### 2.1 Need and Desirability

The existing power line supplies over 60 000 customers at the town of Jane Furse as well as six mines at Uchoba. The over-demand on the existing electrical infrastructure causes unreliable supply with an associated negative economic and social impact.

The above-mentioned customers will benefit from the proposed Merensky-Uchoba 132kV power line. The line will also allow these customers to increase capacity should they require to and more electrification will be available in the Jane Furse area.

This project will enable a reliable supply of electricity to its customer base and provides the area with a long term solution to enhance the network performance. It is anticipated that performance will improve and the duration and frequency of supply interruptions will be minimal.

An important consideration of the project is to ensure that the proposed expansion of the network does not have a negative impact on the environment. To this extent the specialist studies, public participation conducted, impact assessment and the resultant Environmental Management Programme ensure the protection of the environment (both biophysical and social).

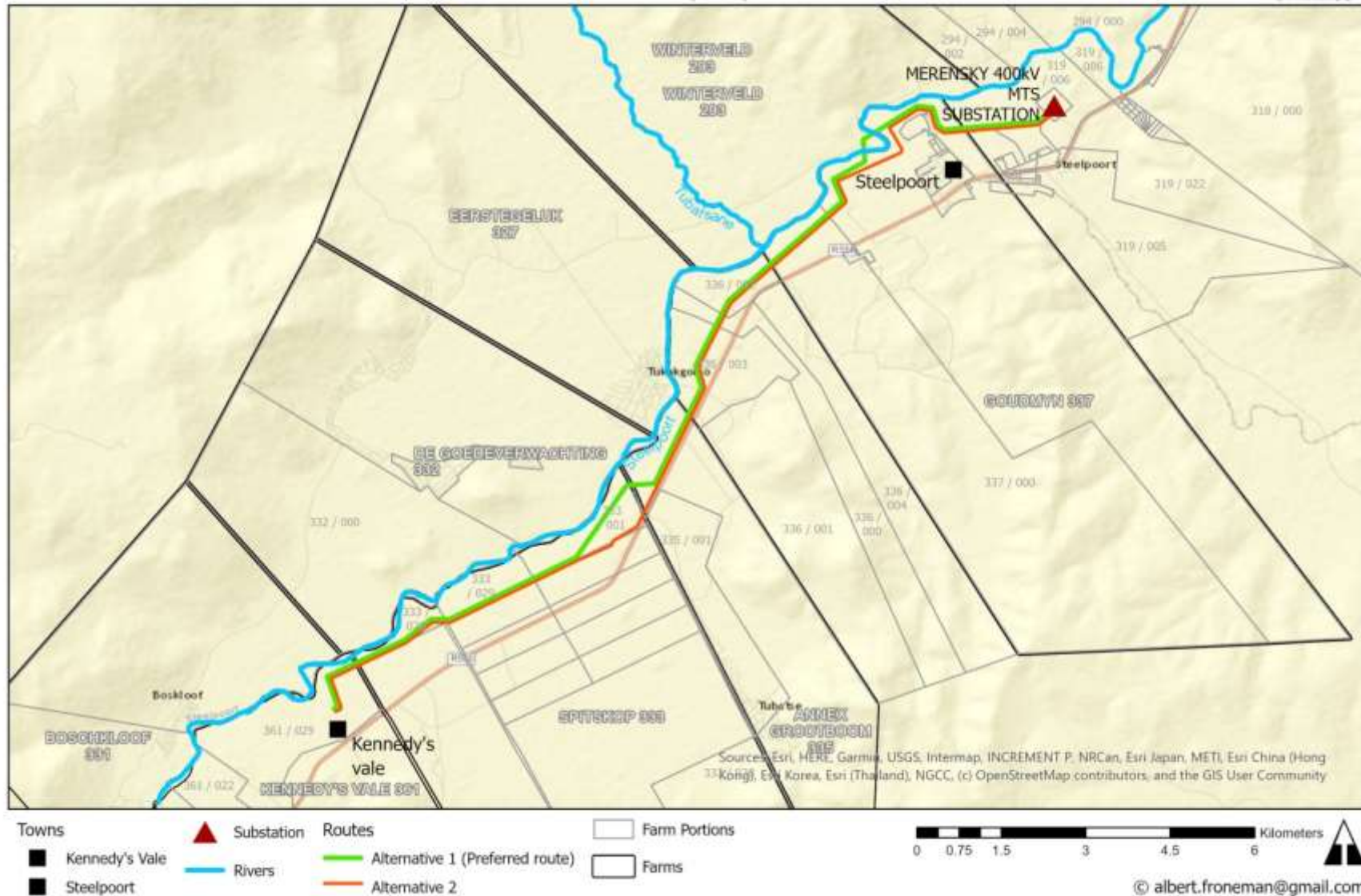
This project forms part of the Strategic Infrastructure Projects (SIPs) and is a SIP 10 project and thereby further enhances the desirability of the proposed power line development.

### 2.2 Locality and Regional Context

The power line runs roughly between the towns of Steelpoort and Kennedy's Vale in the jurisdiction of the Fetakgomo Tubatse Local Municipality in the Sekhukhune District Municipality, Limpopo Province.

***A3 size locality maps (topographic and on a Google Earth image) is provided in Appendix A1.***

# Eskom Merensky - Uchoba Project, Steelpoort, Mpumalanga Province Locality Map





## 2.3 Project Description

The project entails the construction of an approximate 18km 132kV power line from the existing Merensky substation to connect to the Merensky-Jane Furse-Uchoba 132kV power line T-off point (this line has been approved for construction and construction will commence in due course).

### **Access roads**

Some access roads to the site are available and some new access roads will need be constructed. Access will be limited in width – the purpose being providing access for construction and maintenance purposes only. Construction will take place strictly according to the guidelines and specifications as provided in the EMPr in Appendix E and will be guided by the specialists' assessments.

## 2.4 Technical Information

Refer to Appendix B for an engineering drawing of the monopole structure that is recommended to be used by the avifauna specialist in order to prevent bird electrocutions.

## 2.5 Servitude Size and Route corridors

### **Power line**

The power line servitude width will be 31m.

### **Corridors**

The route corridor investigated has the Steelpoort River as the western border and the R555 provincial road as the eastern border. The total corridor size is approximately 1 280 hectares. It is requested that the *corridor* be approved as part of the environmental authorisation and not the servitude only. This will enable reasonable adjustments within the corridor during the walk-down and servitude negotiations with the relevant landowner without having to enter into an additional environmental authorisation process. *Note that Eskom will however only register the required servitude within the route corridor and not the entire corridor.*

## 2.6 Farm and portion numbers & Surveyor General 21 Digit Codes

### **Key to the SG 21 Digit Codes**

| Major region |   |   |   | Minor region |   |   |   | Farm / Erf number |    |    |    |    |    |    |    | Portion number |    |    |    |    |
|--------------|---|---|---|--------------|---|---|---|-------------------|----|----|----|----|----|----|----|----------------|----|----|----|----|
| 0            | 0 | 0 | 0 | 0            | 0 | 0 | 0 | 0                 | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0              | 0  | 0  | 0  | 0  |
| 1            | 2 | 3 | 4 | 5            | 6 | 7 | 8 | 9                 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17             | 18 | 19 | 21 | 21 |

## FINAL ROUTE

### Olifantspoortje 319-KT

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 9 | 0 | 0 | 0 | 0 | 5 |
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 9 | 0 | 0 | 0 | 1 | 1 |

### Wintervel 293-KT

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 9 | 0 | 0 | 0 | 0 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

### Goudmyn 337-KT

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 7 | 0 | 0 | 0 | 1 | 0 |
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 7 | 0 | 0 | 0 | 0 | 0 |

### Grootboom 336

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 0 |
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 2 |
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 1 | 7 |
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 3 | 0 |

### Spitskop 333

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 1 |
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 2 |
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 0 | 0 | 0 | 1 | 0 |
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 0 | 0 | 0 | 2 | 7 |
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 0 | 0 | 0 | 2 | 8 |
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 0 | 0 | 0 | 2 | 9 |

### Kenndey's Vale 361

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T | O | K | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 1 | 0 | 0 | 0 | 2 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

## 2.7 Coordinates of Final Route

The 250m coordinates of the final Merensky-Uchoba Power Line Route are included as Appendix A(3).



## CHAPTER 3: ALTERNATIVES

### 3.1 Draft route alignment as determined by Eskom

Eskom determined a power line route at the commencement of the study which was based on the technical criteria as mentioned below as well as input from their environmental department.

#### 3.1.1 Technical Considerations

General technical considerations in terms of power line route alternatives are:

- In order to be economically viable it should as far as possible follow the shortest route between two substations (a shorter line will result in less construction costs and less servitude compensation will be required), whilst considering the criteria provided in the bullet points below.
- If the new corridor is placed parallel to existing lines, maintenance of the new line(s) could take place at the same time that maintenance on the old lines is conducted;
- It should have easy access through existing roads (private or public) to be used for construction and maintenance purposes and restrict additional impact on the environment resulting from the construction of access roads;
- It should preferably follow existing infrastructure (i.e. power lines, roads, railway lines, fences, etc) and farm boundaries to prevent unnecessary impact on natural areas free of infrastructure.

#### 3.1.2 Environmental Considerations

The Eskom engineering team obtain input from their environmental team and the draft route alignment was compiled.

#### 3.1.3 The draft route alignment

The route provided by Eskom is indicated as Alternative 2 on the route maps as provided in this report (also refer to Appendix A). It was chosen mainly because of the following:

- The shortest possible route was chosen and was guided by existing development structures (industrial, mining, existing electrical infrastructure).
- The route does not cross the Steelpoort River and the chance of impacting on the river is thereby minimise.

## 3.2 Route selection process

### 3.2.1 Specialist Studies

The specialists for the project (vegetation, aquatic, bird and heritage) investigated the Eskom route alignment as well as the proposed route corridor. The key findings of the specialists that impacted on the route selection process are the following:

- *Ecological Assessment*

Nine different Vegetation Units were identified within the study area. Two of these units are having a high conservation value and the impact that the construction of the power line will have on these areas cannot be mitigated to acceptable levels. In order to conserve these high functioning ecosystems it was therefore required to reroute the power line so that the alignment avoids these areas in its entirety. The Preferred Route (Alternative 1) incorporates this recommendation and has a low / negligible impact on these sensitive areas.

- *Watercourses*

The Steelpoort River and tributaries are the watercourses within the study area (no wetlands are present). The Preferred Route Alternative will cross the Steelpoort River twice, which is needed in order to avoid one of the high conservation value units as mentioned above. The ecologist argued that the impact on the river will be minimal if mitigation measures are followed and this option is therefore preferable to the route alignment that transverses the highly sensitive ecosystem.

- *Bird Impact Assessment*

The draft proposed route as well as the route option proposed by the ecologist as discussed above was assessed. Both routes are located close together and in similar habitat. Both are acceptable from a bird impact assessment perspective, although the route originally proposed by Eskom is slightly preferred. The route recommended by the ecologist contains more large trees, especially where it crosses the Steelpoort River, making it slightly less preferred from an avifaunal perspective, as it will entail the removal of more large trees, which has a greater potential impact on breeding and roosting avifauna.

The avifauna assessment did however conclude that the route proposed by the ecologist will have a very low impact after mitigation measures have been applied.

- *Heritage Impact Assessment*

From a heritage perspective there is no specific preference for any of the two alternatives.

### 3.2.2 Public Participation

Even though the project was widely advertised and as per the NEMA Regulations, very little comment from the general public and landowners was received to date. All concerns / queries were satisfactorily addressed and no route changes were recommended or requested.

At this stage it can therefore be concluded that from a landowner and public perspective both route alignments are acceptable.

### 3.3 The Preferred Route

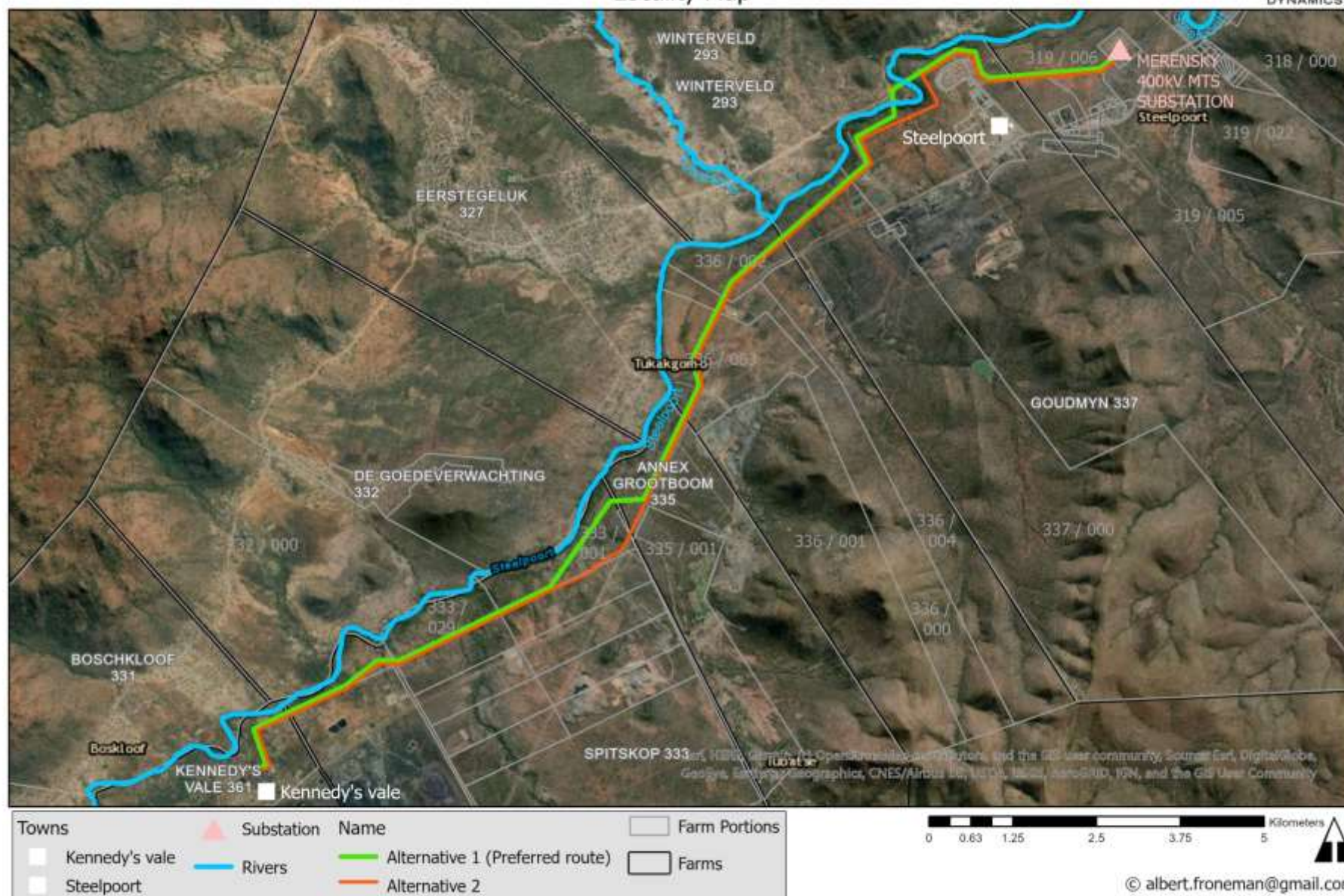
The preferred route alignment that is being put forward for environmental authorisation is the route that includes the recommendations made by the ecologist – Alternative 1 as per the Route Map attached as Appendix A(2). It is not recommended to approve the route originally proposed by Eskom (Alternative 2 on the said map) because the impact on the highly sensitive ecosystems cannot be mitigated and the destruction will be unacceptably high.

As a summary, the following applies to the Preferred Route (Alternative 1):

- It meets Eskom requirement from a technical point of view.
- With implementation of mitigation measures, no significant impact on the flora, fauna, watercourses, birds and heritage recourses are expected.
- The route is acceptable from a landowner and public perspective because, even though widely advertised, no objections were received.

***A map of the route alternatives are provided on the following page and an A3 copy thereof is attached as Appendix A(2).***

# Eskom Merensky - Uchoba Project, Steelpoort, Mpumalanga Province Locality Map





### 3.4 The No Go Alternative

This is the “do nothing” alternative. Under these circumstances the power line will not be constructed and there would obviously be no changes to the environment.

This would however mean that the 60 000 people of the town of Jane Furse as well as the six mines at Uchoba will continue to struggle with unreliable electrical supply. It would further mean that expansion within the area will not be possible due to a shortage of electrical supply. This will have an associated negative economic and social impact.

This proposed Merensky-Uchoba project will enable a reliable supply of electricity to its customer base and will provide the area with a long term solution to enhance the network performance. It is anticipated that performance will improve and the duration and frequency of supply interruptions will be minimal. *This would not be realised should the No Go Alternative be applied.*

### 3.5 Conclusion of Alternatives

The *Preferred Power Line Route (Alternative 1)* as presented in this document, is the result of in-depth specialist studies, a thorough public participation process as well as liaison with Eskom engineers, land & rights personnel and environmental officers.

The EAPs are confident that the route as presented are the most acceptable and viable alternative for this project. This is based on the following:

- *Technical considerations*  
Eskom are satisfied that the preferred route meets their requirement in terms of the need of the project.
- *Community Consultation (Social Impact)*  
All the directly affected landowners and other identified Interested & Affected Parties were contacted during the public participation process and no objections were received. The minimal comment received from IAPs was satisfactorily addressed.
- *Environmental Considerations*  
The specialists (vegetation; aquatic; bird and heritage specialists) for the project confirmed their support for the preferred route alternative.
- *Mitigation*  
The EAPs are confident that all identified potentially negative impact associated with the project can be mitigated to acceptable levels.

## CHAPTER 4: SPECIALIST STUDIES

### 4.1 General / Route Description of the Study Area

#### *General*

The power line starts at the Merensky substation which is situated northeast of the town of Steelpoort. From here it runs towards the south west and crosses the Steelpoort River twice close to the beginning of the route. The alternative alignment is a short distance south of the preferred alternative and does not cross the River. The route corridor varies from  $\pm 1.2\text{km}$  and  $\pm 550\text{m}$  in width and measures  $\pm 1\,280$  hectares in size. It lies between the Steelpoort River to the west and the R555 provincial road to the east. The area comprises various mining areas, developed industrial sections, agricultural areas as well as open natural areas utilised for grazing. Various roads, gravel roads and footpaths occur.

Certain sections show signs of bush clearance. Disturbance in the area were caused by roads, power lines, pipe lines, industrial activities, dams and over-grazing. Vegetation is dense along the Steelpoort River and there is a large area more or less in the centre of the proposed line that had been eroded heavily.

The environment along the length of the routes within the corridor is much the same. It consists of sections with thick natural bush, mainly caused by over-grazing. In some areas the vegetation cover was low and there are open patches, indicating that the area had been disturbed.

#### *Climate*

In June and July, the average temperature is  $14\text{ }^{\circ}\text{C}$  (ranging between a minimum of  $5^{\circ}\text{C}$  and maximum of  $23^{\circ}\text{C}$ ). These months have the lowest average temperatures of the whole year. Most rainfall occurs during the summer months (November-December). The average annual rainfall for the area is  $718\text{ mm}$  with the lowest ( $6\text{ mm}$ ) in June and July with the highest ( $125\text{ mm}$ ) in February.

#### *Topography and Geology*

The area is classified as a valley/plains area with the landscape ranging from gently undulating plains to level. The Steelpoort River forms the western boundary of the study area.

The area has a complex geology with mafic and ultramafic intrusive rocks belonging to the Rustenburg layered Suite of the Bushveld Igneous Complex. The area is rich in minerals consisting of norite, gabbro, anorthosite and pyroxenite rings with protrusions of magnetite, chromitite, quartzite and serpentinitised harzburgite to name a few, present (Mucina & Rutherford, 2006).

## 4.2 Biophysical Environment

### 4.2.1 Ecological Assessment of the Flora and Watercourses

The aim of the impact assessment is to present a floristic and aquatic assessment of the habitat and to highlight sensitive attributes and areas within the environment that might be adversely affected by the proposed development.

This section provides information on:

- Main vegetation types that occur along the proposed routes
- Vegetation units present along the proposed routes
- Watercourses present along the proposed routes
- Likelihood that red data plant species could occur along the different proposed routes
- Sensitive ecosystems that could be affected by the proposed routes

## VEGETATION

### **Vegetation types**

On a small scale the proposed routes fall within the savanna biome and, within a larger regional scale, the proposed routes are according to Mucina & Rutherford (2006) located within the Central Bushveld Bioregion (Svcb). The Sekhukhune land area (approximately 4 800km<sup>2</sup> in size) is regarded as a centre of endemism which makes it an important botanical area ; with 51 recorded endemic and many rare/threatened plant species. In terms of vegetation types the proposed route is located within the Sekhukhune Plains Bushveld (SVcb27) vegetation type.

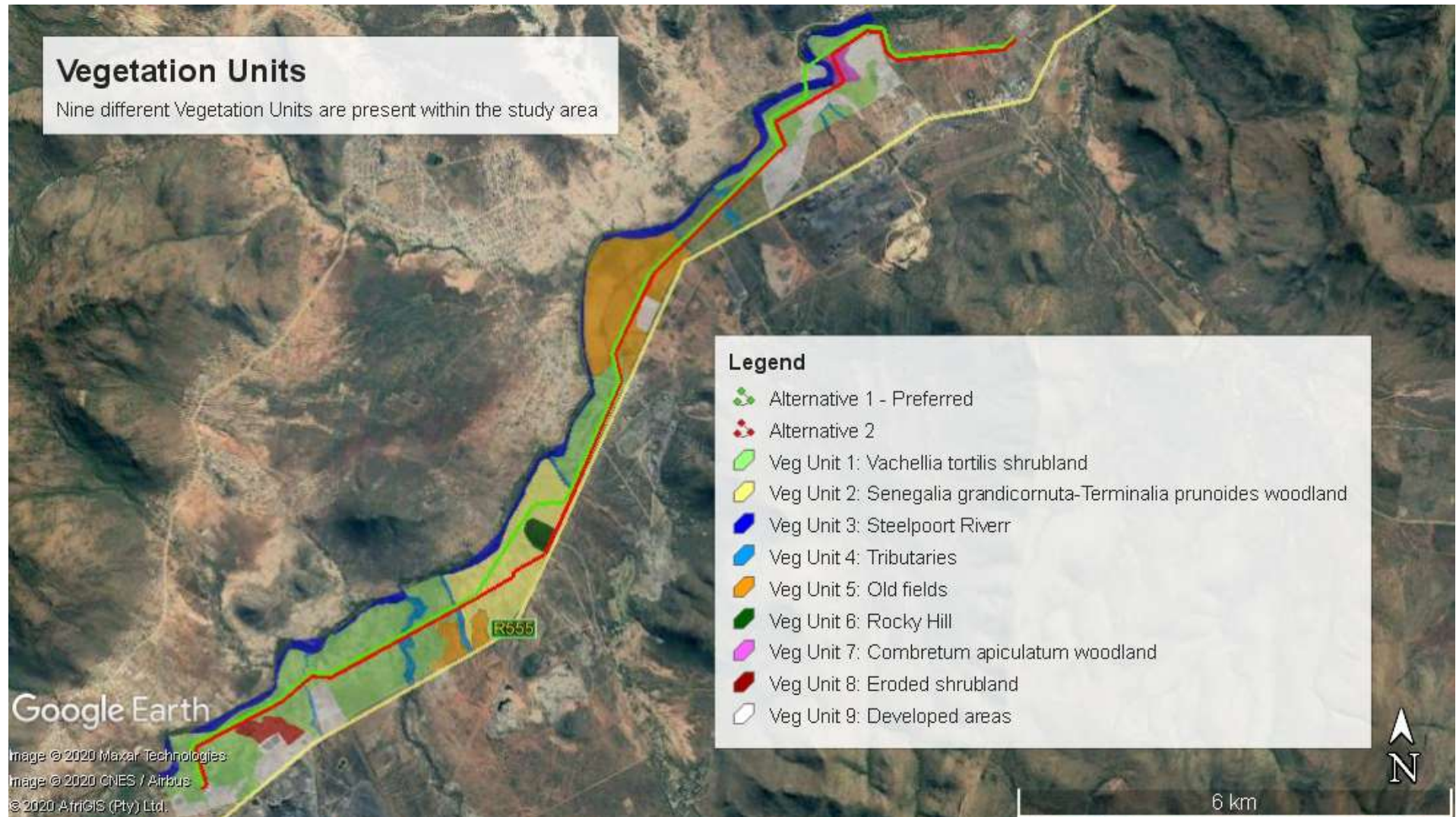
### **Vegetation units**

The study area comprises natural vegetation with mining, agricultural (cattle & other domestic stock) and game farming activities conducted on the land.

The area comprises nine different vegetation units with some natural and some transformed or degraded, namely (refer to Appendix A(4b) for an A3 size copy of the Vegetation Units Map):

1. *Vachellia tortilis* shrubland
2. *Senegalia grandicornuta*-*Terminalia prunoides* woodland
3. River area
4. Tributaries
5. Old fields
6. Rocky Hill
7. *Combretum apiculatum* woodland
8. Eroded shrubland
9. Developed areas

## Vegetation Units





## Vegetation Unit 1: *Vachellia tortilis* shrubland

|                    |  |                       |        |
|--------------------|--|-----------------------|--------|
| Soil               | Red sandy to clay soil   | Tree cover            | 1-3%   |
| Topography         | Level with slight western slope  | Shrub cover           | 55-65% |
| Land use           | Livestock and mining   | Herb cover            | 10-15% |
| Unit status        | Degraded   | Grass cover           | 45-60% |
| Faunal spp.        | Birds, insects, small mammals, domestic animals  | Rock cover            | 4-5%   |
| Erosion            |  | 4%                    |        |
| Dominant spp.      | <i>Vachellia tortilis</i> , <i>Dichrostachys cinerea</i> , <i>Terminalia prunoides</i> , <i>Tragus berteronianus</i> |                       |        |
|                    |  |                       |        |
| Conservation value | Low-medium   | Ecosystem functioning | Medium |

This shrubland occurs throughout the study site on loamy to clayey soil. In some areas the soil is gravelly with small rocks and pebbles present covering up to 5% of the area. The tall shrub *Vachellia tortilis* is prominent throughout this unit.

This unit can be divided into the following two sub-units:

- Vachellia tortilis*-*Terminalia prunoides* shrubland
- Vachellia tortilis*-*Dichrostachys cinerea* shrubland

### Sub-Unit 1a. *Vachellia tortilis*-*Terminalia prunoides* shrubland



This sub-unit is located in the northern and southern parts of the study site. The topography varies from flat to slightly undulating floodplains. The vegetation is characterised by the dominance of the shrub *Vachellia tortilis* and *Terminalia prunoides*.

Red data / Protected / Endemic species

Two protected species were found within this vegetation unit: the tree *Sclerocarya birrea* and the succulent *Aloe globuligemma*.

### Sub-unit 1b. *Vachellia tortilis*-*Dichrostachys cinerea* shrubland

This sub-unit is located in the central to northern part of the study area on flat to undulating land with loamy to clay soil and few rocks covering approximately 4% of the area. The vegetation is characterised by the dominance of the encroacher shrubs *Dichrostachys cinerea* and *Vachellia tortilis* together with the grass *Tragus berteronianus*.



#### Red data / Protected / Endemic species

Two protected species were found within this vegetation unit: the tree *Sclerocarya birrea* and the succulent *Aloe globuligemma*.

### 2. *Vachellia grandicornuta*-*Terminalia prunoides* woodland Soil



This woodland is located in the central to southern part of the study area. The soil is clayey to loam with few rocks present that cover less than 3% of the soil. The level to undulating with some eroded areas. The vegetation is characterised by the prominence of various species such as the woody species.

#### Red data / Protected / Endemic species

Two protected tree species namely *Boscia albitrunca* and *Boscia foetida* subsp *minima* were found within this vegetation unit.

|                     |  |                    |        |
|---------------------|--|--------------------|--------|
| <b>Soil</b>         | Clay to loam<br>reddish in colour  | <b>Tree cover</b>  | 8%     |
| <b>Topography</b>   | Plains   | <b>Shrub cover</b> | 50%    |
| <b>Land use</b>     | Game and small<br>wild ungulates   | <b>Herb cover</b>  | 10%    |
| <b>Unit status</b>  | Natural to<br>degraded   | <b>Grass cover</b> | 15-40% |
| <b>Faunal spp</b>   | Various birds &<br>insects   | <b>Rock cover</b>  | 8%     |
| <b>Erosion</b>      | 3%   |                    |        |
| <b>Dominant spp</b> | <i>Vachellia grandicornuta</i> , <i>Searsia keetii</i> , <i>Terminalia prunoides</i> , <i>Boscia foetida</i> |                    |        |

|                           |        |                              |        |
|---------------------------|--------|------------------------------|--------|
| <b>Conservation value</b> | Medium | <b>Ecosystem functioning</b> | Medium |
|---------------------------|--------|------------------------------|--------|

### Vegetation Unit 3: Riverine area



This Steelpoort River flows from south to north and forms the western boundary of the study area. The soil is clay with alluvial sand deposits with large boulders in some places. The vegetation is dominated by the tall trees *Combretum erythrophyllum*, *Senegalia galpinii* and the declared alien invader *Melia azedarach*.

Red data / Protected / Endemic species: None

|                     |  |                    |        |
|---------------------|--|--------------------|--------|
| <b>Soil</b>         | Clay with sand deposits on top                                       | <b>Tree cover</b>  | 85%    |
| <b>Topography</b>   | River  | <b>Shrub cover</b> | 20%    |
| <b>Land use</b>     | Drinking by cattle and other animals                                 | <b>Herb cover</b>  | 15-30% |
| <b>Unit status</b>  | Natural to degraded  | <b>Grass cover</b> | 25-45% |
| <b>Faunal spp</b>   | Various birds, insects & aquatic animals                             | <b>Rock cover</b>  | 8%     |
| <b>Erosion</b>      |  | n/a                |        |
| <b>Dominant spp</b> | <i>Combretum erythrophyllum, Melia azedarach, Senegalia galpinii</i> |                    |        |

|                           |      |                              |             |
|---------------------------|------|------------------------------|-------------|
| <b>Conservation value</b> | High | <b>Ecosystem functioning</b> | Medium-high |
|---------------------------|------|------------------------------|-------------|

## Vegetation Unit 4: Tributaries



Numerous tributaries are present in the area. These areas are only wet during high rainfall events and channel water towards the Steelpoort River. The soil is sandy with clay and many rocks covering up to 45% of the area. The vegetation varies depending on the width and depth of the tributary. The more pronounced tributaries have a moderately deep channel while others are narrow. The vegetation varies but is characterised by the

presence of woody species.

### Red data / Protected / Endemic species

One protected tree namely *Spirostachys africana* was found to be present in this vegetation unit.

|                     |   |                    |        |
|---------------------|---|--------------------|--------|
| <b>Soil</b>         | Clay to loam reddish in colour  | <b>Tree cover</b>  | 10%    |
| <b>Topography</b>   | Drainage channels   | <b>Shrub cover</b> | 15%    |
| <b>Land use</b>     | Grazing   | <b>Herb cover</b>  | 10%    |
| <b>Unit status</b>  | Natural   | <b>Grass cover</b> | 20%    |
| <b>Faunal spp</b>   | Birds & insects   | <b>Rock cover</b>  | 25-45% |
| <b>Erosion</b>      | n/a   |                    |        |
| <b>Dominant spp</b> | <i>Spirostachys africana</i> , <i>Combretum hereroense</i> , <i>Diospyros lycioides</i> , <i>Combretum erythrophyllum</i> , <i>Schmidtia pappophoroides</i> . |                    |        |

|                           |             |                              |             |
|---------------------------|-------------|------------------------------|-------------|
| <b>Conservation value</b> | Medium-high | <b>Ecosystem functioning</b> | Medium-high |
|---------------------------|-------------|------------------------------|-------------|

## Vegetation Unit 5: Old fields

The old fields are located mostly in the central parts of the study site with some scattered throughout the area. The soil is loamy clay with few rocks present. The vegetation is mostly grassland with some areas encroached by the shrub *Vachellia tortilis*.





Red data / Protected / Endemic species

None

|                     |  |                    |     |
|---------------------|--|--------------------|-----|
| <b>Soil</b>         | Clay to loam<br>reddish in colour      | <b>Tree cover</b>  | <1% |
| <b>Topography</b>   | Undulating plains                      | <b>Shrub cover</b> | 5%  |
| <b>Land use</b>     | Cattle and small<br>wild ungulates     | <b>Herb cover</b>  | 12% |
| <b>Unit status</b>  | Degraded                               | <b>Grass cover</b> | 65% |
| <b>Faunal spp</b>   | Birds & insects                        | <b>Rock cover</b>  | 1%  |
| <b>Erosion</b>      | 3%                                     |                    |     |
| <b>Dominant spp</b> | Tragus berteronius; Vachellia tortilis |                    |     |

|                           |     |                              |     |
|---------------------------|-----|------------------------------|-----|
| <b>Conservation value</b> | Low | <b>Ecosystem functioning</b> | Low |
|---------------------------|-----|------------------------------|-----|

#### Vegetation Unit 6: Rocky hill



The rocky hill is a small area in the central part of the study area along the eastern boundary. The soil is shallow and rocky. The vegetation is sparse and various species are prominent such as the woody species.

Red data / Protected / Endemic species

One red data species the succulent *Euphorbia barnardii* (also a protected species) and two other protected species namely the succulents *Aloe globuligemma* and *Aloe castanea* were found within this unit.

|                     |                         |                    |     |
|---------------------|-------------------------|--------------------|-----|
| <b>Soil</b>         | Shallow loam            | <b>Tree cover</b>  | 1%  |
| <b>Topography</b>   | Rocky hill              | <b>Shrub cover</b> | 35% |
| <b>Land use</b>     | Small wild<br>ungulates | <b>Herb cover</b>  | 3%  |
| <b>Unit status</b>  | Natural                 | <b>Grass cover</b> | 15% |
| <b>Faunal spp</b>   | Birds & insects         | <b>Rock cover</b>  | 20% |
| <b>Erosion</b>      | 3%                      |                    |     |
| <b>Dominant spp</b> | Various                 |                    |     |

|                           |      |                              |      |
|---------------------------|------|------------------------------|------|
| <b>Conservation value</b> | High | <b>Ecosystem functioning</b> | High |
|---------------------------|------|------------------------------|------|

## Vegetation Unit 7: *Combretum apiculatum* Woodland



This woodland is located on rocky hills and slopes in the northern part of the study area on shallow gravelly soil. The vegetation is dominated by the woody species *Combretum apiculatum* and *Terminalia prunoides*.

### Red data / Protected / Endemic species

One protected species namely the tree *Boscia albitrunca* was found to be present in

this woodland.

|                     |                          |   |        |
|---------------------|--------------------------|---|--------|
| <b>Soil</b>         | Shallow loamy & gravelly | <b>Tree cover</b>   | 5%     |
| <b>Topography</b>   | Rocky hills              | <b>Shrub cover</b>  | 25%    |
| <b>Land use</b>     | Game and small ungulates | <b>Herb cover</b>   | 8%     |
| <b>Unit status</b>  | Natural                  | <b>Grass cover</b>  | 65-70% |
| <b>Faunal spp</b>   | Various birds & insects  | <b>Rock cover</b>   | 45%    |
| <b>Erosion</b>      |                          | 5%  |        |
| <b>Dominant spp</b> |                          | <i>Combretum apiculatum</i> , <i>Terminalia prunoides</i> |        |

|                           |      |                              |             |
|---------------------------|------|------------------------------|-------------|
| <b>Conservation value</b> | High | <b>Ecosystem functioning</b> | Medium-high |
|---------------------------|------|------------------------------|-------------|

## Vegetation Unit 8: Eroded shrubland



This woodland is located in one area in the southern part of the study site. The soil is loamy clay with sand deposits in the lower lying areas. The terrain is undulating with various erosion channels between soil mounds. The area is open shrubland with sparse vegetation cover.

### Red data / Protected / Endemic species

Two protected species were found in this shrubland namely: The shrub *Boscia foetida* subsp. *minima* and the succulent *Aloe castanea*.

|                     |                                  |                    |     |
|---------------------|----------------------------------|--------------------|-----|
| <b>Soil</b>         | Clay to loam reddish and cracked | <b>Tree cover</b>  | 1%  |
| <b>Topography</b>   | Plains - undulating              | <b>Shrub cover</b> | 15% |
| <b>Land use</b>     | Open land                        | <b>Herb cover</b>  | 5%  |
| <b>Unit status</b>  | Natural to degraded              | <b>Grass cover</b> | 15% |
| <b>Faunal spp</b>   | Birds & insects                  | <b>Rock cover</b>  | 1%  |
| <b>Erosion</b>      | 45%                              |                    |     |
| <b>Dominant spp</b> | Various                          |                    |     |

|                           |             |                              |             |
|---------------------------|-------------|------------------------------|-------------|
| <b>Conservation value</b> | Medium-high | <b>Ecosystem functioning</b> | Medium-high |
|---------------------------|-------------|------------------------------|-------------|

### Vegetation Unit 9: Developed areas

These areas have been developed with various buildings (houses, sheds, offices etc.), roads, cleared land, mining operations etc. In some areas landscaped gardens are present around houses and offices with various ornamental plant species while the indigenous and protected tree *Sclerocarya birrea* was found to be present on some properties. These areas have little natural vegetation present.



#### Red data / Protected / Endemic species

*Sclerocarya birrea*

|                    |                                     |                    |     |
|--------------------|-------------------------------------|--------------------|-----|
| <b>Soil</b>        | Various                             | <b>Tree cover</b>  | n/a |
| <b>Topography</b>  | Plains                              | <b>Shrub cover</b> | n/a |
| <b>Land use</b>    | Infrastructure, mining, agriculture | <b>Herb cover</b>  | n/a |
| <b>Unit status</b> | Transformed                         | <b>Grass cover</b> | n/a |
| <b>Faunal spp</b>  | n/a                                 | <b>Rock cover</b>  | n/a |
| <b>Erosion</b>     | n/a                                 |                    |     |

|                           |     |                              |     |
|---------------------------|-----|------------------------------|-----|
| <b>Conservation value</b> | Low | <b>Ecosystem functioning</b> | Low |
|---------------------------|-----|------------------------------|-----|

### ***Threatened ecosystems & Protected areas***

According to the SANBI data and locality maps no protected or threatened areas are present within the proposed corridor.

### ***Ecosystem Classification: the Limpopo Conservation Plan (map on following page)***

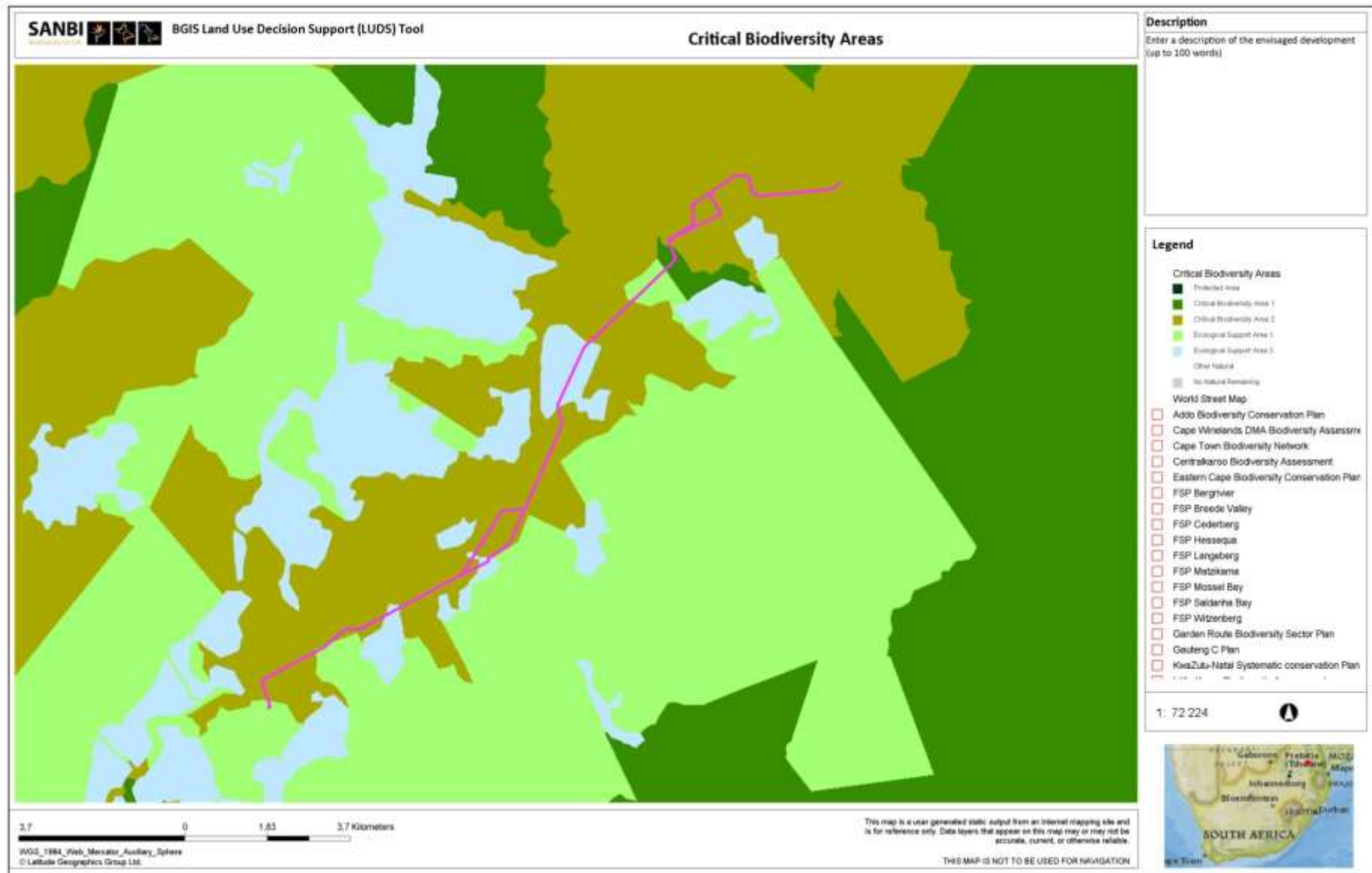
A CBA is regarded as an area that need to be maintained in as natural condition as possible to meet the region's biodiversity target. An ESA is an area that has been subjected to some degradation and although no longer intact, it is largely natural and important to support CBA's and to maintain landscape connectivity.

The study area falls within Critical Biodiversity Area 1, Critical Biodiversity Area 2, Ecological Support Area, and No Natural Area Remaining:

- The "No Natural Areas" remaining corresponds mostly to the Old Fields area (Vegetation Unit 5) and the Developed Areas (Vegetation Unit 9).
- The CBA 1 corresponds with a section of Vegetation Unit 1 (*Vachellia tortilis* shrubland) as well as the Developed areas (Vegetation Unit 9). This area has some natural vegetation, however, is not considered as being a CBA 1.
- The CBA 2 corresponds with Vegetation Units 1, 2, 3, 4, 6, 7 and 8. From the results of this study the only units that correspond to such a classification area units 3, 4, 6 and 7 (Riverine Area; Tributaries; Rocky Hill; *Combretum apiculatum* woodland).
- Vegetation unit 8 is classified as an ESA and has a medium-high conservation value based on the findings of this report.
- Both Vegetation Units 1 and 2 although natural with natural species are somewhat degraded due to various anthropogenic influences as described in each unit.

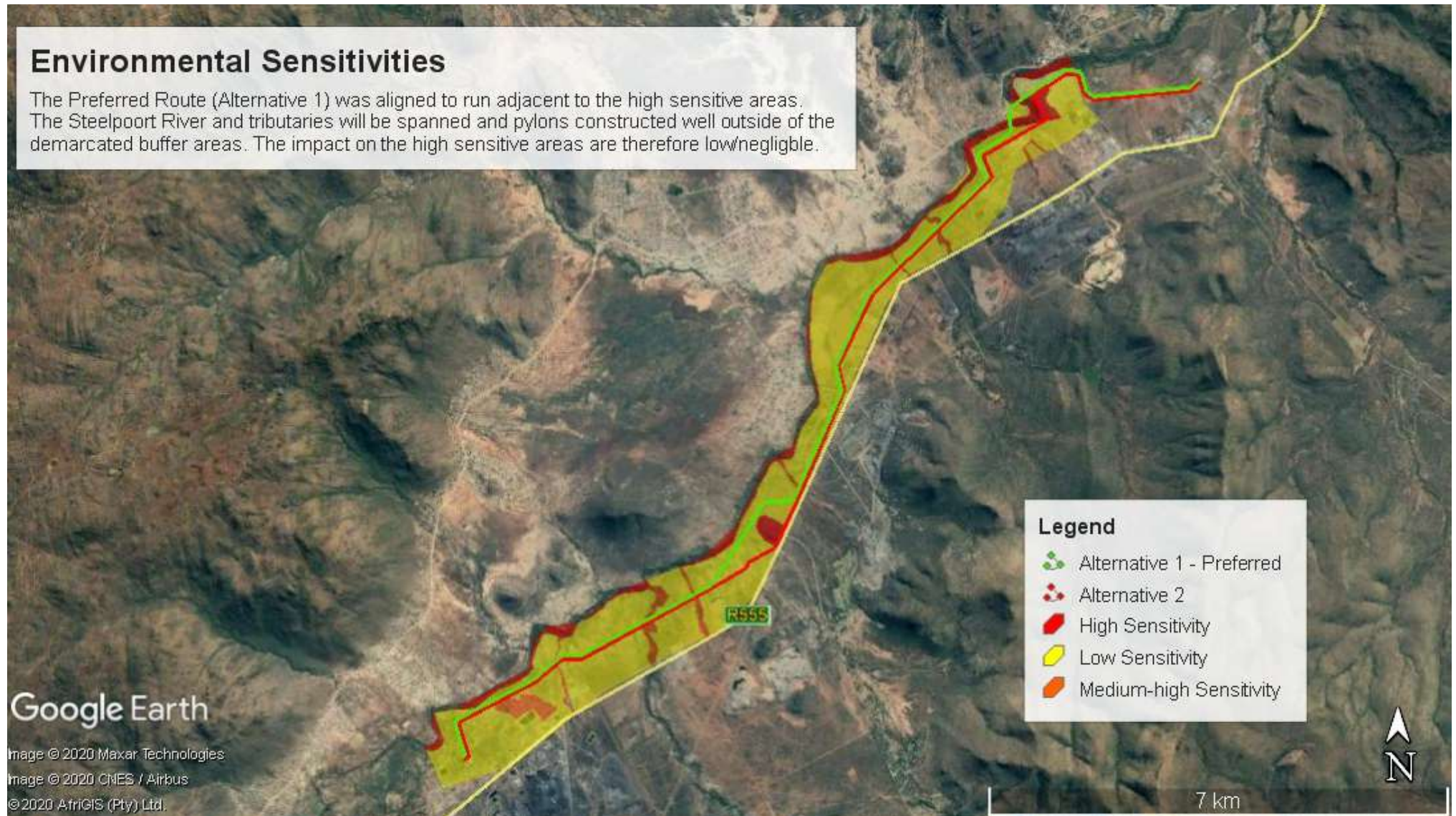


## Limpopo Conservation Plan (as obtained from the SANBI website)



### ***Environmental Sensitivities***

Based on the above data and discussions the ecosystem sensitivity for the two proposed routes is indicated in the map below  
(also refer to Appendix A4a for an A3 size copy of the map)





### Red data species

Only one red data species which is also a protected species namely *Euphorbia barnardii* was found to be present in the study area. This species has a conservation status of “endangered” due to habitat destruction and other agricultural activities. Vegetation Unit 6 does however provide suitable habitat for three other species.

### Protected species

In terms of Section 15(1) of the National Forests Act, 1998, as well as the Limpopo Environmental Management Act (Act no. 7 of 2003) no person may cut, disturb, damage or destroy any protected tree/plant or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree/plant or any forest product derived from a protected tree/plant, except under a license or exemption granted by the Minister to an applicant and subject to such period and conditions as may be stipulated. Trees/plants are protected for a variety of reasons, and some species require strict protection while others require control over harvesting and utilization. The Department of Agriculture, Forestry and Fisheries (DAFF) as well as the Department of Nature Conservation (Limpopo) will have to be approached to obtain the required permits for the removal of any protected tree/plant species.

A total of nine protected species have been recorded during the survey.

| Species name                       | Recorded in study area | Unit/s  | National tree number |
|------------------------------------|------------------------|---------|----------------------|
| <i>Aloe globuligemma</i>           | ✓                      | 1; 5; 6 | n/a                  |
| <i>Aloe marlothii</i>              | ✓                      | 1; 8    | n/a                  |
| <i>Aloe castanea</i>               | ✓                      | 1; 6; 8 | n/a                  |
| <i>Euphorbia barnardii</i>         | ✓                      | 6       | n/a                  |
| <i>Spirostachys africana</i>       | ✓                      | 4       | 341                  |
| <i>Boscia foetida minima</i>       | ✓                      | 2; 8    | 123                  |
| <i>Boscia albitrunca</i>           | ✓                      | 2, 7    | 122                  |
| <i>Sclerocarya birrea</i> (Marula) | ✓                      | 1       | 360                  |
| <i>Balanites maughamii</i>         | ✓                      | 1       | 251                  |

### **Medicinal species**

A total of eleven medicinal plant species, have been identified within the study area. Apart from the trees *Balanites maughamii*, *Ptaeroxylon obliquum*, *Sclerocarya birrea* (protected), most of the species are common species that occur in abundance throughout the region. Two of these species (*Datura stramonium*, *Ricinus communis*) are declared alien invasive weeds.

### ***Alien plant species***

A total of thirteen different declared alien invasive species are present within the study area. Vegetation Units 1, 2 and 3 had the most declared alien invasive plants.

### **IMPACT ASSESSMENT**

Refer to Chapter 6 of this report for a detail Impact description, mitigation measures provided and impact assessment tables. In general all impacts can be mitigated to Low/Negligible.

### **ASSESSMENT OF ALTERNATIVES**

Route Alternative 1 (Preferred Route) incorporates recommendations made in the Vegetation Impact Assessment Report and avoids the Rocky Hill. The area should be declared a no-go area and nobody is allowed to enter the hill area unauthorised.

The route across the Steelpoort River (Alternative 1) will have less of an effect on the environment than that of the other route that would extend through the *Combretum apiculatum* woodland (Vegetation Unit 8). Although the route in this section will have an effect on Vegetation Unit 6 it will be far less than that of Route Alternative 2.

Route Alternative 1 is therefore the preferred route from a plant ecological point of view.

### **CONCLUSION OF VEGETATION IMPACT ASSESSMENT**

The largest part of the vegetation within the proposed route corridor is degraded due to previous and current anthropogenic influences (grazing, agriculture, mining, roads, development). This has led to areas becoming encroached/densified and moderately degraded. Four Vegetation Units namely the River area (Vegetation Unit 3), Tributaries (Vegetation Unit 4), Rocky Hill (Vegetation Unit 6) and the *Combretum apiculatum* woodland (Vegetation Unit 7) are regarded as having either Medium-high or High conservation values and ecological sensitivities.

The study area is located within a vulnerable vegetation type and is classified as falling within each of the various categories namely CBA 1; CBA 2; ESA and No Conservation value. These areas correspond mostly to what was found during the site investigation.

One red data species was found to be present Vegetation Unit 6 – *Euphorbia barnardii* and this unit also has marginal habitat for three other red data species. A total of nine protected tree species are present throughout the different vegetation units.

Once the final powerline route and pylon positions have been decided on and pegged a walkdown by a qualified plant ecologist must be done to determine if any of these protected species must be removed (permits would then have to be obtained).

***Route Alternative 1 as presented in the Final Route Map attached under Appendix A2 of this report incorporates the mitigation measures as per the Vegetation Impact Assessment and is supported from a plant ecological point of view.***

### **WETLANDS**

According to SANBI's C-Plan for Limpopo Province (refer to Appendix A5c for the SANBI wetlands map), there are two wetland areas in the proposed corridor, which has been identified as old farm dams. From historic aerial imagery it seems to be moist and artificial and does not fall within the proposed power line route. There is no stream present in these areas and only wide unrecognisable (due to human actions) drainage channels within the old fields. It seems to be moist only during the rainfall season. These areas are artificial and were therefore not assessed.

### **RIVERS & TRIBUTARIES**

#### **Present Ecological State (PES)**

The assessment evaluates the intactness of the stream and is determined by a score known as the Present Ecological Score (PES). The PES refers to the current state or condition of a watercourse in terms of all its characteristics and reflects the change to the watercourse from its reference condition. The health assessments for the hydrology, geomorphology and vegetation components were then represented by the PES categories.

#### **Ecological Importance and Sensitivity (EIS)**

The EIS of a watercourse is an expression of its importance to the maintenance of ecological diversity and functioning on local and wider scales, and both abiotic and biotic components of the system are taken into consideration. Sensitivity refers to the system's ability to resist disturbance and its capability to recover from disturbance once it has occurred.

#### **Habitat integrity (HI)**

The HI evaluation is used to provide a degree of measure to which a stream or river has been modified from its natural state. In order to determine the HI a qualitative assessment is done using various anthropogenic and other factors that could potentially affect the ecosystem.

### **STEELPOORT RIVER**

The Steelpoort River forms the western boundary for most of the property. This perennial river channels surface water from the surrounding catchment areas from south to north. The river is utilised for drinking by cattle and game as well as for recreational activities (e.g. fishing). The embankment area is mostly characterised by tall trees, but in some areas the vegetation is slightly more open. Various declared alien invasive plant species were found to be present within the riverine area (see vegetation discussion above for more detail).

The river has obtained a high **PES** score of 75% indicating it to be largely natural with few modifications. A slight change in ecosystem processes is discernible and a small loss of natural habitats and biota may have taken place.

The river achieved a Medium-high **EIS** score of 2.26. This is a value between 0 and 4, with 0 being very low and 4 very high. The river is thus regarded as having a medium-high ecological sensitivity with a moderate biodiversity. Apart from the various habitats for birds and insects the river also provide habitat for various aquatic organisms. It also has a water channelling function and is important in a regional context. The habitat of this system is mostly natural (in spite of various alien invader plant species) and is regarded as sensitive to flow and habitat modifications.

The Steelpoort River achieved an **HI** score of Class B. Class B means that the area is mostly natural with few modifications. Although a small change in natural habitats and biota may have taken place, the ecosystem functions are essentially unchanged. The alien vegetation and some anthropogenic influences do however have a negative effect on the habitat and water quality of the river.

#### TRIBUTARIES

These drainage pathways vary in size and width. They only channel water during high rainfall events with only the larger tributaries retaining some water in the rainy season but are mostly dry drainage channels. This unit was therefore only assessed in terms of their EIS and HI.

The tributaries mostly have a water channelling function and is important on a local scale. The habitat of this system is mostly natural and linked to the surrounding environment. The **EIS** was calculated to be 1.42.

The tributaries achieved a high class C (close to B) **HI** score indicating them to be mostly natural with moderate changes in their habitat and biota which can mostly be ascribed to current and past anthropogenic influences (agriculture, grazing).

#### CONCLUSION OF THE AQUATIC IMPACT ASSESSMENT

The watercourse systems within the study area are the Steelpoort River and tributaries. There were no natural wetlands found to be present within the proposed route or corridor.

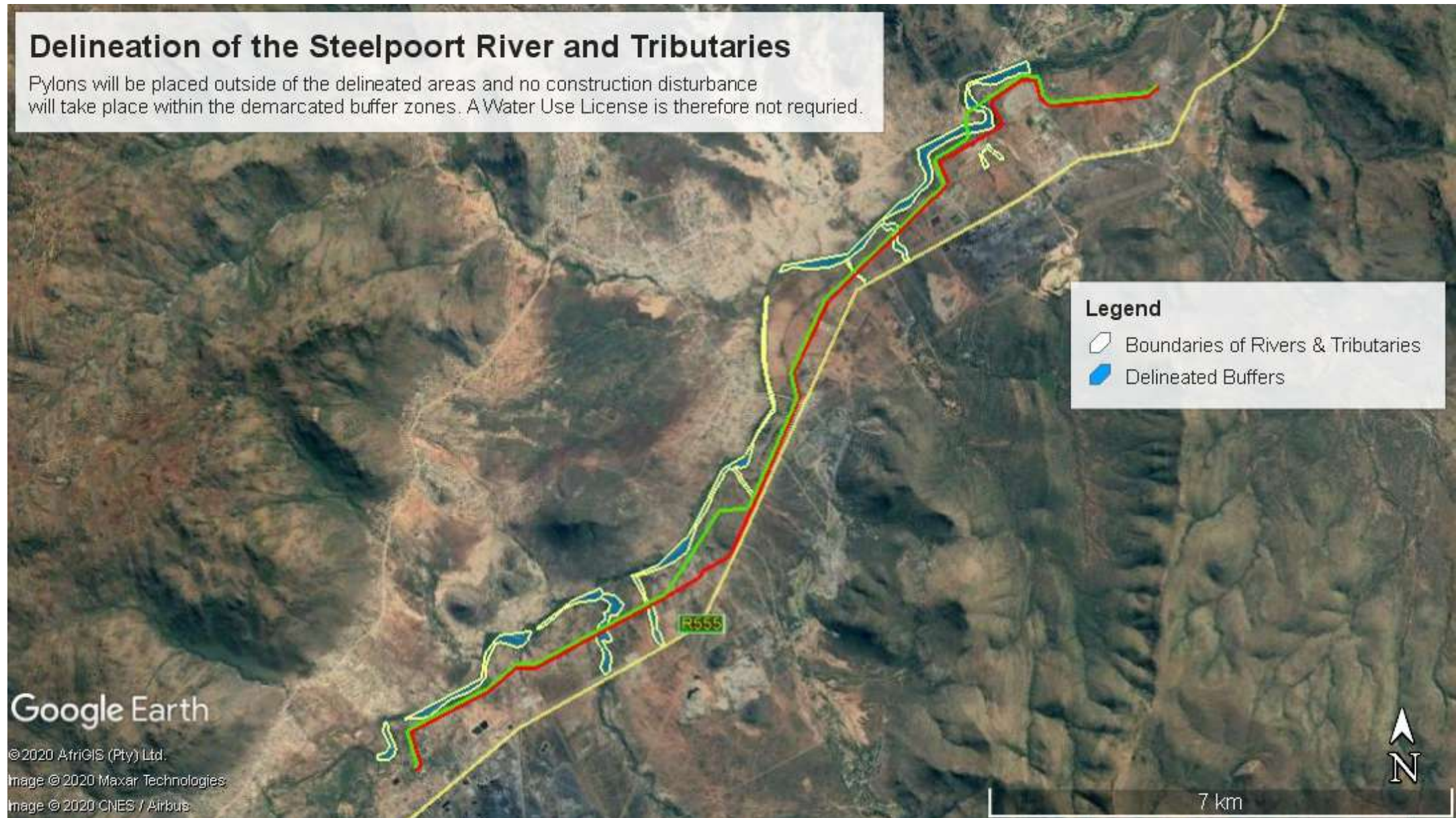
The Steelpoort River and tributaries have a high PES score of 75% indicating it to be largely natural with few modifications. The river has a Medium-high EIS and a high HI. The river section of the study area, although various alien invader plant species are present, is mostly natural with stable riverbanks and a number of large indigenous tree species present. Although there are various anthropogenic influences affecting the river, it is still functioning and moderately natural.

No pylons must be placed closer than 32m from the river's edge or that of the tributaries. The river and tributaries were delineated (refer to the map on the following page as well as Appendix A4c) and all pylons must be placed outside of the delineation and construction disturbance is not allowed within the delineated areas. This means that a Water Use License is not required.



## Delineation of the Steelpoort River and Tributaries

Pylons will be placed outside of the delineated areas and no construction disturbance will take place within the demarcated buffer zones. A Water Use License is therefore not required.



#### 4.2.2 Bird Impact Assessment

A Bird Impact Assessment was undertaken by Chris van Rooyen Consulting and is attached under Appendix C. A summary thereof follows below.

##### **Important Bird Areas (IBA)**

The core study area does not fall within an IBA. The closest IBA is the Blyde River Canyon IBA SA127, which is situated approximately 35km north-east of the study area at its closest point. It is not expected that the project will impact on the avifauna associated with the IBA.4.2

##### **Coordinated Waterbird Count (CWAC) Data**

A CWAC site is any body of water, other than the oceans, which supports a significant number (set at approximately 500 individual waterbirds, irrespective of the number of species) of birds which use the site for feeding, and/or breeding and roosting. This definition includes natural pans, vleis, marshes, lakes, rivers, as well as a range of manmade impoundments (i.e. sewage works). The presence of a CWAC site within the study area is an indication of a large number of bird species occurring there and the overall sensitivity of the area.

There are no registered CWAC sites within close proximity of the study area therefore CWAC data was not used as a criterion to assess the sensitivity and anticipated impacts in the project area.

##### **Avian Habitat**

The following avian habitat classes were recorded within the core study areas:

- Woodland
- Waterbodies
- Cleared areas
- Industrial areas
- Transmission lines
- Riparian zone

##### **Power line sensitive and Red Data species**

The powerline sensitive and Red Data species recorded within the broader study area most relevant to this impact assessment are:

- Waterbirds that are potentially susceptible to collisions with powerlines
- Raptors, vultures and some waterbirds that are potentially susceptible to electrocutions on powerlines

#### **IMPACT ASSESSMENT**

Refer to Chapter 6 of this report for a detail Impact description, mitigation measures provided and impact assessment tables. In summary it states that construction of the proposed infrastructure will pose a LOW potential risk to power line sensitive and Red Data avifauna. In all instances, appropriate mitigation should reduce the LOW risk to VERY LOW.



## **ASSESSMENT OF ALTERNATIVES**

The two alternatives for the powerline are both located close together and in similar habitat. Both alternatives are acceptable from a bird impact assessment perspective, although Alternative 2 is slightly preferred. Alternative 1 contains more large trees than Alternative 2, especially where it crosses the Steelpoort River, making it slightly less preferred from an avifaunal perspective, as it will entail the removal of more large trees, which has a greater potential impact on breeding and roosting avifauna.

## **CONCLUSION OF BIRD IMPACT ASSESSMENT**

In general, the sensitivity of the habitat within the core study area is low to medium from a potential powerline impact perspective. Historically, woodland (savanna) dominated the core study area and would have supported many Red Data and power line sensitive species. However, anthropogenic impacts as a result of a change in land use practices have had a negative impact on the available natural habitat in some sections of the core study area, and consequently the avifaunal diversity and abundance.

The species recorded within the broader study area most relevant to this impact assessment are:

- Waterbirds that are potentially susceptible to collisions with powerlines.
- Raptors, vultures and some waterbirds that are potentially susceptible to electrocutions on electrical infrastructure.

The construction of the proposed infrastructure will pose a LOW potential risk to power line sensitive and Red Data avifauna. In all instances, appropriate mitigation should reduce the LOW risk to VERY LOW.

In conclusion, it is anticipated that the proposed infrastructure can be constructed with acceptable levels of impact on the resident avifauna subject to the recommendations as provided in Chapter 6 of this report as well as in the EMPr.

## **4.3 Cultural / Historical Environment**

### **4.3.1 Heritage Impact Assessment**

A Heritage Impact Assessment was undertaken by Archaetnos Consultants and is attached under Appendix C. It concluded as follows:

One site of cultural heritage importance was identified. It is believed to have a rating of low significance. The following is recommended:

- Site no 1 (clay-built building) is of low significance and may thus be demolished if necessary. However, it is highly unlikely that this would be needed, and it can be left to deteriorate naturally.

- The proposed project may therefore continue, but only after receiving comments from SAHRA.
- In any event, once the pylon positions have been finalized, a walk down study would be needed to confirm that nothing of heritage value is being compromised.
- It should be noted that the subterranean presence of archaeological and/or historical sites, features or artefacts is always a distinct possibility. Care should therefore be taken when development commences that if any of these are discovered, work on site immediate cease and a qualified archaeologist be called in to investigate the occurrence.

## **ASSESSMENT OF ALTERNATIVES**

From a heritage perspective there is no specific preference for any of the two alternatives.

## **CONCLUSION OF THE HERITAGE IMPACT ASSESSMENT**

From a heritage / cultural point of view the project may proceed once mitigation measures have been put in place.

## CHAPTER 5: PUBLIC PARTICIPATION

### 5.1 Objectives of the Public Participation Programme

The main aim of public participation is to ensure transparency throughout the EIA process. The objectives of public participation in this EIA are the following:

- To identify all potentially directly and indirectly affected stakeholders, government departments, municipalities and landowners;
- To communicate the proposed project in an objective manner with the aim to obtain informed input;
- To assist the Interested & Affected Parties (IAPs) with the identification of issues of concern, and providing suggestions for enhanced benefits and alternatives;
- To obtain the local knowledge and experience of IAPs;
- To ensure that all reasonable alternatives are identified for assessment.
- To communicate the proceedings and findings of the specialist studies;
- To ensure that informed comment is possible;
- To ensure that all concerns, comment and objections raised are appropriately and satisfactorily documented and addressed.

### 5.2 Public Participation Process Followed

Significant measures were taken to ensure that all stakeholders and IAPs were informed of the project and were allowed the opportunity to place their concerns and comment on record. All applicable documentation is attached under Appendix D.

#### First Phase Notification/Advertisement of the project

- *List of Interested & Affected Parties (IAPs)*  
All potential directly and indirectly affected landowners, stakeholders and government departments were identified. The IAP register is included as Appendix D1 of this report.
- *Onsite notices*  
Four A2 laminated onsite notices (in English) were placed on 25 February 2020 along the proposed power line route as follows (proof of placement is included as Appendix D3):
  - At the beginning of the proposed power line route at the existing Merensky Substation
  - Next to the R37 where the road crosses the Steelpoort River. The power line will cross the road close to this point, but away from the river.

- Next to the R555 provincial road in the approximate centre of the proposed route.
- Next to the R555 provincial road at the approximate end of the proposed route.
- *First Phase Notification*  
A First Phase Notification Letter was compiled and distributed via email to all on the IAP Register on 11 March 2020. This Letter as well as proof of distribution is included as Appendix D2.
- *Newspaper advertisement*  
An advertisement was placed in the Sekhukhune Times local newspaper on 12 March 2020. Proof of placement is included as Appendix D4.

### **Distribution of the Draft Basic Assessment Report**

The Draft BAR (this document) is being distributed for a 30-day commenting period (June / July). The commenting period is however extended as per the current lockdown regulations, which states the following:

(Munzhedzi, we will complete this at the time of distribution since the EIA Directives change often (the next set of Directives is expected before end of May. The PPP followed will also depend at what lockdown level Limpopo Province is in when we distribute the Draft BAR for public input)

- **Hard copies will be sent to (if allowed – as explained above)**
  - Fetakgomo Tubatse Local Municipality, Care of the Director: Community Services (includes Environmental Management Services)
  - Department of Water and Sanitation
  - Limpopo Provincial Heritage Authority
  - The Draft BAR was linked to the SAHRIS website of the South African Heritage Resources Agency (SAHRA) for their perusal and comment.
- All registered Interested and Affected Parties were informed via email that the Draft Basic Assessment Report could be viewed on [www.landcapedynamics.co.za](http://www.landcapedynamics.co.za).

### **Final Basis Assessment Report**

Comments received on the Draft BAR will be incorporated into the Final BAR that will be submitted to DEFF for approval.

### 5.3 Communication during the Initial Advertising Period up to the Distribution of the BAR

| <b>Date, format, name:</b><br>All correspondence was via email unless specifically stated otherwise   | <b>Comment</b>  | <b>Response</b>   |
|---|---|---|
| 17 March 2020<br>Steelpoort Prop CC, registered landowner of Portion 5 (Remaining Extent) of the Farm Olifantspoortje 319-KT, Mr Pierre Pienaar   | Mr Pienaar requested to be registered as an IAP and also that maps of the proposed power line routes be forwarded to him.                     | <ul style="list-style-type: none"> <li>• He is included in the IAP Register.</li> <li>• The final route maps (Alt1 and Alt2 as per Appendix A2) were forwarded to Mr Pienaar.</li> <li>• No further comment was received</li> </ul>   |
| 13 March – 9 April 2020<br>Eskom Holdings Ltd registered landowner of Portion 11 (Remaining Extent) of the Farm Olifantspoortje 319-KT: David Tunnickliff, Annah Kawadza, Vuledzani Thanyani, | Eskom wanted to know in which way, if any, the proposed Distribution power line will impact on the existing and planned transmission network. | <ul style="list-style-type: none"> <li>• The routes received from Transmission were overlain onto the Merensky-Uchoba proposed power line route and it was confirmed that Transmission routes will not be impacted by the Merensky-Uchoba development. A map showing the routes were attached to the response email.</li> <li>• No further comment was received.</li> </ul> |
| 23 March 2020<br>Mashilatonga Trading & Projects, Tshego M  | They would like to be considered for all procurement opportunities as a local supplier to play a role in realizing this project.              | This request is communicated to Eskom via this Report. Our EIA process is however still part of the planning and approval stages of the project – it is planned that construction will only commence during the second quarter of 2021.   |

|  |   |  |
|--|---|--|
| <p>19 March 2020</p> <p>Rhodium Reefs LTD, registered landowner of Portion 29 of the Farm Kennedy's Vale 361-KT: MrMichael Duze</p>                    | <p>They requested to be registered as an IAP.</p>   | <ul style="list-style-type: none"> <li>• Rhodium Reefs has been added to the IAP Register</li> <li>• No further comment was received</li> </ul>        |
| <p>16 March 2020</p> <p>Department of Agriculture, Forestry and Fisheries: Resource Auditor</p> <p>Land Use and Soil Management: Nkopodi Kgobalale</p> | <p>They requested to be registered as an IAP.</p>   | <ul style="list-style-type: none"> <li>• The Department has been added to the IAP Register</li> <li>• No further comment was received</li> </ul>       |
| <p>16 March 2020</p> <p>SANRAL Northern Region: Ms Ria Barkhuizen</p>  | <p>The enquiry will be evaluated and a response provided within 30 days, in line with requirements of Section 29 of the Spatial Planning and Land Use management Act (Act No.16 of 2013) read with Section 3 of the Promotion of Administrative Justice Act (Act No.3 of 2000). Should no response has been received within 30 days, it should be followed up with Mr Jan Oliver.</p> | <ul style="list-style-type: none"> <li>• Mr Olivier was subsequently added to the IAP register.</li> <li>• No further comment was received.</li> </ul> |

|   |  |   |
|---|--|---|
| <p>13 March 2020</p> <p>Eskom Holdings SOC Limited: Eskom Distribution Property Management, the Regional Land Portfolio Manager: Ms Tinki Holl and Ms Bronwyn Stolp</p> | <p>Ms Stolp requested to be removed from the IAP list, but Ms Holl must be kept on the list and Kritesh Bedessie should be added.</p>  | <ul style="list-style-type: none"> <li>• The IAP register was amended as requested.</li> <li>• No further comment was received.</li> </ul>        |
| <p>12 March 2020</p> <p>Parsons Transport Holdings Pty Ltd, the registered landowner of Portion 0 of the Farm Grootboom 336-KTL: Mr Jaco Parsons</p>                    | <p>Mr Parsons requested to be added to the IAP register.</p>   | <ul style="list-style-type: none"> <li>• The IAP register was amended accordingly.</li> <li>• No further comment was received.</li> </ul>         |
| <p>22 May 2020</p> <p>SANRAL: Statutory Control: Northern Region: Ms Ria Barkhuizen</p>   | <p>The R555 is a national road and all pylon structures must be constructed 60m distance from the road reserve boundaries.</p> <p>SANRAL does not wish to be registered as an IAP.</p> | <ul style="list-style-type: none"> <li>• This stipulation is included in the EMPr</li> <li>• The IAP Register was amended accordingly.</li> </ul> |

## **5.4 Comment received on the Draft Basic Assessment Report**

All comment received on the Draft BAR will be included and addressed in the Final BAR that will be submitted to DEFF for approval.

## **5.5 Conclusion of the Public Participation Programme**

The main objective of the Public Participation Programme undertaken for this project was to identify a viable route corridor that is not only acceptable from an ecological point of view, but also from a landowner perspective.

Even though the project was advertised widely as described above, relative few comments had been received during the public participation process.

Comments received were all satisfactorily addressed and the EAPs are confident that reasonable consensus was reached regarding the preferred route corridor as presented in this document.



## CHAPTER 6: IMPACTS, IMPACT ASSESSMENT AND MITIGATION

### 6.1 Methods Used to Identify Impacts

Environmental issues and impacts have been identified through the following means:

- Correspondence with Interested and Affected Parties, including directly affected landowners, general stakeholders and relevant authorities;
- Consultation with the EIA Project Team, supported by the Eskom Project Team;
- Evaluation and consideration of relevant existing environmental data and information;
- The general knowledge and extensive experience of the Environmental Consultants in the field of Environmental Impact Assessments for linear development planning.

### 6.2 List of Impacts Associated with the Development

#### 6.2.1 Expected Negative Impacts

##### *Planning and Design Phase*

- Impact 1: Route Selection: Impact on landowners
- Impact 2: Route Selection: Fauna, Flora, Avifauna and Heritage

##### *Construction Phase*

- Impact 1: Impact on flora
- Impact 2: Impact on fauna
- Impact 3: Impact on birds
- Impact 4: Impact on aquatic features
- Impact 5: Impact on cultural heritage resources
- Impact 6: Risk of groundwater pollution
- Impact 7: Risk of erosion
- Impact 8: Community impact
- Impact 9: Noise and dust (air quality)

##### *Post- Construction Phase*

- Impact 1: Impacts of improper site clearance after construction
- Impact 2: Impacts associated with lack of rehabilitation

##### *Operational Phase*

- Impact 1: Impact associated with insensitive bush clearing for maintenance purposes

### 6.2.2 Expected Positive Impacts

- The 60 000 people of Jane Furse and the six mines at Uchoba will benefit from the proposed Merensky-Uchoba 132kV power line. The line will also allow these customers to increase capacity should they require to as well as more electrification in the Jane Furse area.
- This project will enable a reliable supply of electricity to its customer base and provides the area with a long term solution to enhance the network performance. It is anticipated that performance will improve and the duration and frequency of supply interruptions will be minimal.
- This project forms part of the Strategic Infrastructure Projects (SIPs) and is a SIP 10 project and thereby further enhances the desirability of the proposed power line development.
- The proposed Eskom Merensky-Uchoba Project is being planned in a legal, pro-active and structured manner taking all development components, potential and restrictions into account.

### 6.2.3 Cumulative impact

The cumulative impact of additional electrical structures is considered low/negligible because of the significant existing Eskom infrastructure in the macro area. These existing structures include the existing distribution and transmission lines in close proximity to the proposed route as well as planned transmission lines within the vicinity of the proposed Merensky-Uchoba line. The proposed new power line will be constructed with monopole pylons which are much less intrusive compared to the structures of the Eskom 400kV and 800 kV transmission power lines that is existing in the macro area. The macro area is also known for heavy industrial and mining activities and electrical infrastructure is needed and expected. It is therefore concluded that the addition of the electrical infrastructure as proposed will have a minimal cumulative impact within the area.

## 6.3 Generic Eskom Environmental Management Programme (EMPr)

On 22 March 2019 a *Generic Environmental Management Programme* was promulgated in terms of Section 24 of NEMA and gazetted as Government Notice No 435. This EMPr is applicable where application is made for Environmental Authorisation for substations and overhead electricity transmission and distribution infrastructure as identified in terms of

- activity 11 or 47 of EIA Regulations Listing Notice 1 of 2014, as amended, or for
- activity 9 of EIA Regulations Listing Notice 2 of 2014, as amended,
- and any other listed and specified activities necessary for the realisation of such infrastructure.

The EMPr which forms part of the Basic Assessment Report is a legally binding document and contains general as well as site specific mitigation measures / management actions to lessen the impact that this development may have on the environment.

In order to prevent duplication between the Impact Assessment Tables as given below and the mitigation measures / management actions as provided in the EMPr (it is a 131 page document), reference will be made to the generic EMPr where the mentioned impacts are being addressed.

Site specific mitigation measures mentioned below also forms part of Appendix A: Part C as well as Appendix B: Part C of the EMPr.

## 6.4 Environmental Impact Assessment

The Environmental Impact Assessment Tables includes a description of expected impact on the different environmental components as well as proposed mitigation measures / management actions to minimise those impacts to acceptable levels. These mitigation measures are also included in the Environmental Management Plan (EMPr).

### 6.4.1 Methodology Used in Ranking of Impacts

Impacts are evaluated and assessed in terms of the following criteria:

| <b>Extent of impact</b> | <b>Explanation of extent</b>  |
|-------------------------|---|
| Site                    | Impacts limited to construction site and direct surrounding area          |
| Local                   | Impacts affecting environmental elements within the local area / district |
| Regional                | Impacts affecting environmental elements within the province              |
| National                | Impacts affecting environmental elements on a national level              |
| Global                  | Impacts affecting environmental elements on a global level                |

| <b>Duration of impact</b> | <b>Explanation of duration</b>   |
|---------------------------|--|
| Short term                | 0 - 5 years. The impact is reversible in less than 5 years.                  |
| Medium term               | 5 - 15 years. The impact is reversible in less than 15 years.                |
| Long term                 | >15 years, but where the impacts will cease if the project is decommissioned |
| Permanent                 | The impact will continue indefinitely and is irreversible.                   |

| <b>Probability of impact</b> | <b>Explanation of Probability</b>                   |
|------------------------------|---|
| Unlikely                     | The chance of the impact occurring is extremely low |
| Possible                     | The impact may occur                                |
| Probable                     | The impact will very likely occur                   |
| Definite                     | Impact will certainly occur                         |

| <b>Magnitude/Intensity of impact</b> | <b>Explanation of Magnitude/Intensity</b>   |
|--------------------------------------|---|
| Low                                  | Where the impact affects the environment in such a way that natural, social and cultural functions and processes are not affected     |
| Moderate                             | Where the affected environment is altered, but natural, social and cultural functions and processes continue albeit in a modified way |
| Severe                               | Where natural, social and cultural functions or processes are altered to the extent that it will temporarily or permanently cease     |

| <b>Significance of impact</b> | <b>Explanation of Significance</b>   |
|-------------------------------|--|
| None                          | There is no impact at all  |
| Low                           | Impact is negligible or is of a low order and is likely to have little real effect |
| Moderate                      | Impact is real but not substantial   |
| High                          | Impact is substantial  |
| Very high                     | Impact is very high and can therefore influence the viability of the project       |

#### 6.4.2 Impact Assessment Tables

### DESIGN AND PRE-CONSTRUCTION PHASE

Critical issues to be addressed during the design and planning phases

#### Route Selection: Impact on landowners

##### Impact

Omitting to communicate with possible directly affected landowners may halt the construction process if landowners refuse servitude rights over their land after the Environmental Authorisation has been issued. Refusal of servitude rights may happen if the impact on the land is seen as high and haven't been mitigated to acceptable levels.

##### Mitigation

- Directly affected landowners were informed of the proposed route and an opportunity to object to the development proposal was provided. Concerns were addressed to the satisfaction of all involved.

| Impact Description                   | Extent   | Duration  | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|--------------------------------------|----------|-----------|-------------|-----------------------|---------------------------------|-------------------------------|
| Site selection: Impact on landowners | Regional | Permanent | Definite    | Moderate              | High                            | Low                           |

## Route Selection: Impacts on Fauna, Flora, Avifauna & Heritage

### Impact

Environmentally insensitive route & site selection as well as insensitive tower and infrastructure placement may have a severe negative impact on the natural environment.

### Mitigation

- Vegetation-, Aquatic-, Avifauna- and Heritage Impact Assessments were undertaken to determine any no-go areas and if route deviations are required. Mitigation measures were supplied to minimise impact to acceptable levels.
- A large corridor (1 420 hectares) along the length of the line was investigated by the specialist team. Walk-downs by the ecologist, heritage- and avifauna specialist must be conducted after the Environmental Authorisation has been issued. This would ensure sensitive tower and infrastructure placement within the corridor. The purpose is to avoid as far as possible sensitive plant communities, large / protected trees, heritage sites and bird nesting areas.
- If however, endemic or protected plant species are affected, the species should be removed under the supervision of a qualified plant ecologist/botanist and replanted within the same habitat as close as possible to the original location.

### Red data species

Only one red data specie which is also a protected species namely *Euphorbia barnardii* was found to be present in the study area. This species has a conservation status of “endangered” due to habitat destruction and other agricultural activities. These trees should be protected and pylons should be positioned in such a way that they are not being impacted on. Vegetation Unit 6 provides suitable habitat for the following species:

- *Acacia ormocarpoides*
- *Euphorbia sekukuniensis*
- *Plectranthus porcatus*
- *Plectranthus venteri*
- *Zantedeschia jucunda*

### Protected trees

- Nine protected trees were identified within the study area:
  - *Balanites maughamii*
  - *Sclerocarya birrea* (Marula)
  - *Boscia albitrunca*
  - *Aloe globuligemma*
  - *Aloe marlothii*
  - *Aloe castanea*
  - *Euphorbia barnardii*
  - *Spirostachys Africana*
  - *Boscia foetida minima*

- These trees are present in certain places within the investigated areas. It plays an important role in the ecosystem by providing food, shelter and shade to various animal and bird species. It is therefore important that these trees are not unnecessarily removed from the ecosystem.
- The contractor must have the necessary knowledge to be able to identify the mentioned protected trees interfering with the operation of the line due to their height and growth rate.
- In terms of Section 15(1) of the National Forests Act, 1998, no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree, except under a license or exemption granted by the Minister to an applicant and subject to such period and conditions as may be stipulated. Trees are protected for a variety of reasons, and some species require strict protection while others require control over harvesting and utilization. DEFF as well as the Department of Nature Conservation (Limpopo) will have to be approached to obtain the required permits for the removal of any protected tree/plant species.

| Impact Description  | Extent   | Duration    | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|---|----------|-------------|-------------|-----------------------|---------------------------------|-------------------------------|
| Site selection: Impacts on Fauna, Aquatic, Flora, Avifauna & Heritage | Regional | Medium term | Definite    | Severe                | High                            | Low                           |

## CONSTRUCTION PHASE

### Critical issues to be addressed during the construction phase

## Impact on Flora

### Impact on High Sensitive Ecosystems

The vegetation of the Rocky Hill (Vegetation Unit 6) and the *Combretum apiculatum* woodland (Vegetation Unit 7) are mostly natural and regarded as being sensitive ecosystems. Development of these areas will have a permanent negative impact on the ecosystem. Riverine areas (Vegetation Unit 3) and tributaries (Vegetation Unit 4) are regarded as sensitive ecosystems regardless of their habitat condition. As a result, these areas are also sensitive and any development could have a long-term negative impact on ecosystem functioning and habitat loss.

The other vegetation units are regarded as degraded with only Vegetation Unit 2 having a medium conservation value, but also degraded in many areas. Development in any of these units should have a short-medium term negative impact on the total ecosystem. Since these areas are transformed/degraded the loss of species would not be significant in terms of overall habitat and biodiversity.

## Mitigation

### *Rocky Hill (Vegetation Unit 6)*

- The original proposed route (Alternative 2 as per the Route Maps attached as Appendix A2) was aligned within the high sensitive rocky hill area. As indicated in the impact assessment tables in the Vegetation Impact Assessment Report, the impact that the construction of the power line will have on these areas cannot be mitigated. In order to conserve this high functioning ecosystem it is therefore required to reroute the power line so that the alignment avoids the hill in its entirety (no pylon must be closer than 50m from the edge of the rocky hill). The Preferred Route (Alternative 1) incorporates this recommendation and has a low / negligible impact on this area and is therefore supported.

### *Combretum apiculatum woodland (Vegetation Unit 7)*

- This area has been identified as having a high conservation value and medium-high ecosystem functioning. As indicated in the impact assessment tables in the Vegetation Impact Assessment Report, a power line through this high sensitive area cannot be mitigated. The route has therefore been aligned in order to avoid this area, which means that the impact of the Preferred Route Alternative on this section will be low / negligible.

## **Impact through Habitat destruction, Disturbance, Loss of Biodiversity and Alien Vegetation**

During the construction and maintenance of powerlines, some habitat destruction and alteration inevitably takes place. This happens with the construction of access roads, and the clearing of servitudes. These activities have an impact on the flora and can be severe if not mitigation properly.

## Mitigation

### *Vegetation clearing*

- Refer to the *Generic EMP*
- The object of vegetation clearing is to trim, cut or clear the minimum number of trees and vegetation necessary for the safe mechanical construction and electrical operation of the power line. Only an 8m strip may be cleared flush with the ground to allow vehicular passage during construction.
- No scalping shall be allowed on any part of the servitude road unless absolutely necessary.
- Vegetation clearing on pylon sites must be kept to a minimum.
- The removal of indigenous woody species should be avoided as far as possible. These species have an extensive root system binding the soil and take long to establish.
- Any alien invasive trees with large root systems shall be cut manually and removed, as the use of a bulldozer will cause major damage to the soil when the root systems are removed. Stumps shall be treated with herbicide. Smaller vegetation can be flattened with a machine, but the blade should be kept above ground level to prevent scalping.



- Any vegetation cleared on a tower site shall be removed or flattened and not be pushed to form an embankment around the tower.
- Disturbed areas of natural vegetation as well as cut and fills must be rehabilitated immediately to prevent soil erosion as well as alien invasive vegetation invasion.
- To minimise the effect on the vegetation it is recommended that the construction be done within the winter period when most plants are dormant and when little rain is expected that could potentially cause erosion.
- Where vegetation needs to be “opened” to gain access it is recommended that the herbaceous species are cut short rather than removing them. That will ensure that they regrow during the growing season.
- If possible “soil saver blankets” could be placed over the vegetation to prevent erosion and unnecessary trampling. These blankets must be removed after construction.
- No pylons to be erected within Vegetation Units 3 (river area), 4 (tributaries), 6 (rocky hill) and 7 (*Combretum apiculatum* woodland).

#### *Alien vegetation*

Alien species poses a huge threat to the natural environment due to their competitive nature that leads to the displacement of natural indigenous species (plants and animals), and also due to their excessive use of soil water. Apart from the mitigation as stipulated in the *Generic EMPr*, the following is also recommended:

- All alien vegetation within the study site should be eradicated. The invasive species as listed below should be given the highest priority:
  - *Argemone ochroleuca*
  - *Arundo donax* L.
  - *Cereus jamacaru* DC.
  - *Datura stramonium* L.
  - *Ipomoea purpurea*
  - *Melia azedarach* L.
  - *Morus alba* L.
  - *Opuntia ficus-indica*
  - *Pennisetum clandestinum* Chiov.
  - *Ricinus communis*
  - *Solanum sisymbriifolium* Lam
  - *Tecoma stans*
  - *Xanthium spinosum* L.
- The use of herbicides shall only be allowed after a proper investigation into the necessity thereof and Eskom's approval for the use of herbicides is mandatory. Application shall be under the direct supervision of a qualified technician. All surplus herbicide shall be disposed of in accordance with the supplier's specifications. All alien vegetation in the total servitude and densifiers creating a fire hazard shall be cleared and treated with herbicides.

- Exotic and invasive plant species were categorised according to the framework laid out by The Conservation of Agricultural Resources Act (CARA) (Act 43 of 1983) and National Environmental Management: Biodiversity Act (10/2004) (NEMBA). These Acts define weeds as alien plants with no known useful economic purpose and should be eradicated. Where herbicides are used to clear vegetation, selective and biodegradable herbicides registered for the specific species should be applied to individual plants only. General spraying and the use of non-selective herbicides (e.g. Roundup, Mamba etc.) should be prohibited at all times.

#### *Waste Management*

- Refer to the *Generic EMPr*

#### *Stormwater Management and pollution of water system*

- Refer to the *Generic EMPr*

#### *Erosion and Surface runoff*

- Refer to the *Generic EMPr*
- The timing of clearing activities is of vital importance. Clearing activities and earth scraping should preferably be restricted to the dry season in order to prevent erosion. It is also preferred that the vegetation is cut short rather than clearing it. That would ensure access to the construction areas of the pylons, but still ensure that the soil is bound by the vegetation. The dry months are also the period when the majority of plant and animal species are either dormant or finished with their propagation/breeding activities.
- If bare soil areas result due to the proposed development, sandbags should be packed along the contour lines to prevent any soil washing into the river.

#### *Environmental Control Officer (ECO)*

A properly qualified ECO should be appointed to monitor all activities and to report any actions that could or potentially could have a negative effect on the environment. Both the ECO and the contractor must:

- have the necessary knowledge to be able to identify the protected plants as listed in this report;
- must be able to identify declared weeds and alien species that can be totally eradicated; and
- the contractor must be in possession of a valid herbicide applicators license.

| Impact Description                  | Extent   | Duration  | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|-------------------------------------|----------|-----------|-------------|-----------------------|---------------------------------|-------------------------------|
| Impact on High Sensitive Ecosystems | Regional | Permanent | Definite    | Severe                | High                            | Low                           |
| Impact on flora                     | Local    | Medium    | Definite    | Moderate              | Moderate                        | Low                           |

## Impact on Fauna

There are two main components that could impact on the faunal component, namely

1. Loss of Faunal Habitat (especially within the high sensitive areas)
2. Access Roads

### 1. Impact: Loss of Faunal Habitat

Alteration of the vegetation of the proposed pylon sites will directly, and indirectly, impact on the smaller sedentary species (insects, arachnids, reptiles, amphibians and mammals) adapted to their ground dwelling habitats. Larger, more agile species (birds and mammals) will try and re-locate in suitable habitats away from the construction activities. This is however not thought to be a problem within Vegetation Units 1, 5 and 9 since they are regularly disturbed and transformed due to historic anthropogenic activities.

#### Mitigation

- Refer to the *Generic EMP*
- Any animals encountered in the areas could be relocated away from the development site.
- Workers must be limited to areas under construction and access to natural undeveloped areas must be strictly regulated, preventing uncontrolled hunting, poaching and gathering of firewood and medicinal plants.
- Wherever possible, work should be restricted to one area at a time. This will give smaller birds, mammals, reptiles and amphibians an opportunity to move into undisturbed areas close to their natural habitat.
- The Site Manager and ECO must ensure that no faunal species are disturbed, trapped, hunted or killed during the construction phase. All animals unearthed or disturbed should ideally be released in appropriate habitat away from the development.
- Construction activities should be limited to the daylight hours preventing disturbances to the nocturnal activities of certain species and nearby human populations. This will also minimise disturbances to sensitive and secretive species.

### 2. Impact: Access Roads

The construction of new access roads may have a direct impact on the fauna of the area (destruction of habitat, accidental kills while driving on the roads).

#### Mitigation

- Refer to the *Generic EMP*
- The Contractor shall properly mark all access roads. Markers shall show the direction of travel as well as tower numbers to which the road leads.
- Unnecessary traversing of roads is not allowed.

| Impact Description | Extent | Duration | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|--------------------|--------|----------|-------------|-----------------------|---------------------------------|-------------------------------|
| Impact on fauna    | Site   | Medium   | Definite    | Low                   | Moderate                        | Low                           |

### Impact on birds

#### Impact: Electrocutions, Collisions and Displacement due to habitat destruction and disturbance

- Electrocutions*

Electrocution refers to the scenario where a bird is perched or attempts to perch on the electrical structure and causes an electrical short circuit by physically bridging the air gap between live components and/or live and earthed components. The electrocution risk is largely determined by the pole/tower design.

Clearance between phases on the same side of the steel monopole DT 7611 structure is approximately 2.2m for this type of design, and the clearance on strain structures is 1.8m. This clearance should be sufficient to reduce the risk of phase – phase electrocutions on the towers to negligible. The length of the stand-off insulators is approximately 1.6m. If a very large species attempts to perch on the stand-off insulators, they are potentially able to touch both the conductor and the earthed pole simultaneously potentially resulting in a phase – earth electrocution. This is particularly likely when more than one bird attempts to sit on the same pole, which is an unlikely occurrence, except occasionally with vultures. Vultures are not likely to regularly occur within the study core area. However, it cannot be entirely ruled out, therefore it would be preferable if a 100% vulture friendly structure is used.

The risk is therefore rated to be LOW and can be further reduced to VERY LOW through the application of mitigation measures i.e. the use of the 7649 structure.

- Collisions*

Collisions are probably the biggest single threat posed by power lines to birds in southern Africa. Most heavily impacted upon are bustards, storks, cranes and various species of waterbirds. These species are mostly heavy-bodied birds with limited manoeuvrability, which makes it difficult for them to take the necessary evasive action to avoid colliding with power lines.

Potential candidates for collision mortality on the proposed power line deviation are mostly waterbirds where the proposed alignment crosses potential flyways, e.g. if the line crosses the Steelpoort River. Collision risks to vultures are generally associated with powerline roosts and vulture restaurants, none of which are present on the core study area. In the case of Kori Bustard and Secretarybird, they have not been reported in the SABAP2 data, but the habitat seem suitable in places for Secretarybirds, particularly in areas where the natural woodland has been cleared in the past for agricultural activities.

The risk of collision posed to avifauna by proposed power lines are likely to be of LOW, but it can be reduced to VERY LOW through the application of mitigation measures.

- *Displacement due to habitat destruction and disturbance*

During the construction and maintenance phases, some habitat destruction and transformation inevitably takes place. This happens with the construction of access roads, the clearing of servitudes and the levelling of substation yards. Servitudes have to be cleared of excess vegetation at regular intervals in order to allow access to the line, to prevent vegetation from intruding into the legally prescribed clearance gap between the ground and the conductors and to minimize the risk of fire under the line, which can result in electrical flashovers. These activities have an impact on birds breeding, foraging and roosting in or in close proximity of the servitude through transformation of habitat, which could result in temporary or permanent displacement.

For this project, the risk of displacement of Red Data species due to habitat transformation in the footprint of the proposed powerline servitude is likely to be very limited given the small size of the footprint. However, the removal of large trees could potentially impact on breeding raptors. The impact of displacement due to habitat transformation risk is judged to be LOW and can be further reduced to VERY LOW with the application of mitigation measures.

Apart from direct habitat destruction, the above-mentioned construction and maintenance activities also impact on birds through disturbance; this could lead to breeding failure if the disturbance happens during a critical part of the breeding cycle. Construction activities in close proximity could be a source of disturbance and could lead to temporary breeding failure or even permanent abandonment of nests. The reporting rates for Red Data species in the broader study area are generally low, which is an indication that they are not regularly utilising the area for breeding. However, there are relatively high reporting rates for several non-Red Data resident large raptors and also for White-backed Vultures. The possibility of disturbance of breeding pairs of large raptors during the construction of the powerlines cannot be entirely excluded, and requires further investigation during the walk-through phase.

The impact of displacement due to disturbance is therefore likely to be LOW as far as Red Data species and large raptors are concerned, but can be reduced to VERY LOW with the application of mitigation measures.

## **Mitigation**

- ***Electrocution of avifauna on the 132kV steel monopole structure***

To eliminate the risk of vulture electrocutions the 7649 steel monopole structure is proposed with suspended insulators and diagonal supporting cross arms, which would make perching uncomfortable while ensuring that birds are clear of the live phases. Sketches of the 7649 monopole are attached as Appendix B of this report and also forms part of the EMPr.

- *Avifaunal mortality due to **collisions** with the earthwire of the proposed power lines*
  - High risk sections of power line must be identified by a qualified avifaunal specialist during the walk through phase of the project, once the alignment has been finalized. If power line marking is required (i.e. in agricultural clearings or water crossings) bird flight flappers must be installed on the full span length on each of the conductors (according to Eskom guidelines - five metres apart). Light and dark colour devices must be alternated so as to provide contrast against both dark and light backgrounds respectively. These devices must be installed as soon as the conductors are strung.
- *Displacement of Red Data species and large raptors due to **habitat destruction and disturbance** associated with the construction of the powerlines and substations*
  - Refer to the *Generic EMPr*
  - A walk-through must be conducted by the avifaunal specialist when the final pole positions have been determined, to assess whether there are any Red Data species, and/or large raptors breeding in the vicinity of the final alignment, which could be displaced by the construction activities. Should this be the case, appropriate measures must be put in place to prevent the displacement of the breeding birds, through the timing of construction activities.

| Impact Description  | Extent   | Duration  | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|---------------------|----------|-----------|-------------|-----------------------|---------------------------------|-------------------------------|
| Electrocution       | Regional | Long term | Possible    | Moderate              | Low                             | Very Low                      |
| Collision           | Regional | Long term | Possible    | Moderate              | Low                             | Very Low                      |
| Habitat disturbance | Site     | Short     | Possible    | Moderate              | Low                             | Very Low                      |

### Impact on aquatic features

#### Impact

Loss of natural vegetation adjacent to and within freshwater features could have a direct impact on freshwater systems. Flow & water quality modification as a result of increased erosion and invasive plant growth within disturbed areas could also impact on the effective functioning of the freshwater aquatic systems.

No natural wetlands were found to be present on the proposed route or corridor area with the watercourse systems being the Steelpoort River and tributaries.

#### Mitigation

- Refer to the *Generic EMPr*
- Pylons must not be placed closer than 32m from the river's edge or that of the tributaries.
- The river and tributaries were delineated (refer to the map attached as Appendix A5c) and all

pylons must be placed outside of the delineated area.

- Construction disturbance is not allowed within the delineated buffer areas.

| Impact Description         | Extent | Duration | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|----------------------------|--------|----------|-------------|-----------------------|---------------------------------|-------------------------------|
| Impact on aquatic features | Local  | Short    | Possible    | Low                   | Low                             | Very Low                      |

### Impact cultural heritage resources

#### Impact

One site of cultural heritage importance (clay-built building) was identified. It is believed to have a rating of low significance and may thus be demolished if necessary. It is however highly unlikely that this would be needed, and it can be left to deteriorate naturally.

#### Mitigation

- Refer to the *Generic EMP*
- Due to accessibility issues and the density of vegetation a walk down of the proposed route is recommended. This will be applicable to all project components.

| Impact Description          | Extent | Duration | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|-----------------------------|--------|----------|-------------|-----------------------|---------------------------------|-------------------------------|
| Impact on cultural heritage | Site   | Short    | Unlikely    | Low                   | Low                             | Very Low                      |

### Increased risk for groundwater pollution

#### Impact

- The risk for groundwater pollution during the construction period is generally associated with oil spills resulting from construction vehicles and placement of engineering structure.
- Poor waste management could result in unnecessary impact on groundwater and natural habitat.
- Should ineffective construction techniques and methods be used, it could lead the structural failure with associated risk to the environment.

#### Mitigation

- Refer to the *Generic EMP*

| Impact Description             | Extent | Duration | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|--------------------------------|--------|----------|-------------|-----------------------|---------------------------------|-------------------------------|
| Risk for groundwater pollution | Local  | Medium   | Possible    | Moderate              | Moderate                        | Low                           |



### Increased risk for erosion resulting from construction activities

#### Impact

- To cause the loss of soil by erosion is an offence under the Soil Conservation Act, Act No 76 of 1969.)
- The impact will occur where large areas of land are exposed and where stormwater is allowed to cascade freely across the site.
- Construction vehicles and insufficient construction roads could also result in erosion.

#### Mitigation

- Refer to the *Generic EMP*

| Impact Description                                      | Extent | Duration  | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|---|--------|-----------|-------------|-----------------------|---------------------------------|-------------------------------|
| Risk for erosion resulting from construction activities | Local  | Long term | Probable    | Moderate              | Moderate                        | Low                           |

### Community

#### Impact

- An influx of workers could result in an increased risk for crime and safety to the adjacent landowners.
- Uncontrolled labourers would cause disturbance to and destruction of natural habitat i.e. through placement of snares, cutting trees of firewood, etc.
- Damage to the farmers' property can have a severe economic as well as environmental impact.

#### Mitigation

- Refer to the *Generic EMP*

| Impact Description      | Extent | Duration | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|-------------------------|--------|----------|-------------|-----------------------|---------------------------------|-------------------------------|
| Impact on the community | Local  | Short    | Probable    | Moderate              | Moderate                        | Low                           |

### Impacts associated with construction activities such as noise and dust (air quality)

#### Impact

Construction activities are generally associated with noise and dust. This impact should however be considered in context with the rural and industrial nature of the surrounding areas.

**Mitigation**

- Refer to the *Generic EMP*

| Impact Description | Extent | Duration | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|--------------------|--------|----------|-------------|-----------------------|---------------------------------|-------------------------------|
| Noise              | Local  | Short    | Probable    | Low                   | Low                             | Low                           |
| Dust               | Local  | Short    | Probable    | Moderate              | Moderate                        | Low                           |

## POST-CONSTRUCTION PHASE

### Impacts of improper site clearance after construction

**Impact**

- Improper clean-up of temporary site camps and construction areas after construction activities have been completed may result in wind-blown litter through a wide area, contamination of water sources from especially old oil drip trays and toilets, pieces of steel and wire may hurt animals, etc.

**Mitigation**

- Refer to the *Generic EMP*

| Impact Description                         | Extent | Duration   | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|--|--------|------------|-------------|-----------------------|---------------------------------|-------------------------------|
| Improper site clearance after construction | Local  | Short term | Probable    | Moderate              | Moderate                        | Low                           |

### Impacts associated with lack of rehabilitation

**Impact**

- Areas disturbed during construction such as temporary access roads, construction site camps, areas surrounding the tower positions, temporary laydown areas, etc. which have not been rehabilitated could lead to further environmental damage, especially erosion.
- Areas that have not been rehabilitated to the satisfaction of the landowners may result in Claims for Damages and the resultant negative economic impact.

**Mitigation**

- Refer to the *Generic EMP*

| Impact Description  | Extent | Duration  | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|---|--------|-----------|-------------|-----------------------|---------------------------------|-------------------------------|
| Lack of rehabilitation:<br>Environmental damage & erosion | Local  | Permanent | Probable    | Moderate              | Moderate                        | Low                           |

### Impact associated with insensitive bush clearing for maintenance purposes

**Impact**

- Insensitive bush clearing underneath the power line for maintenance purposes can cause severe damage to the natural habitat.

**Mitigation**

- Refer to the *Generic EMP*
- All permit and landowner conditions shall be adhered to.
- Bush clearing must be undertaken with the knowledge of the landowner.
- Under no circumstances shall natural vegetation (veld), forests or protected vegetation be removed, harvested, mowed, brush-cut or altered in any way without a permit (where applicable).
- Only selective bush clearing is allowed: only vegetation which interferes with the safe operation of the power line or where the height exceeds the requirements as set by the Electrical Machinery Regulations and the Occupational Health and Safety (OHS) Act may be trimmed / removed in agreement with the landowner.
- No plant material may be removed if not part of identified vegetation clearance.
- No scalping shall be allowed on any part of the servitude unless absolutely necessary. Smaller vegetation can be flattened with a machine, but the blade should be kept above ground level to prevent scalping.
- Bush clearing must be done in accordance with the Vegetation Clearance and Maintenance within Overhead Power line Servitudes and on Eskom Owned Land procedure (EPC 32-247).
- Bush clearing is not allowed on river- and stream banks (riparian vegetation).
- Bush cuttings shall not be burned. Unwanted cuttings shall be removed and disposed of at a registered waste site and such records kept on file.
- The maintenance contractor must have the necessary knowledge to be able to identify protected species in the area as well indigenous species not interfering with the operation of the line due to their height and growth rate.

| Impact Description                                      | Extent | Duration    | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|---|--------|-------------|-------------|-----------------------|---------------------------------|-------------------------------|
| Insensitive servitude clearing for maintenance purposes | Local  | Medium term | Probable    | Moderate              | High                            | Low                           |

#### 6.4.2 Environmental Management Programme (EMPr)

The main objectives of the EMPr are to identify actions and mitigation measures to minimise expected negative impact and enhance positive impact during all development phases (design/pre-construction, construction, and post-construction/operation) in terms of community issues, construction site preparation, construction workers, habitat protection, security, etc. Communication channels and contact details must also be provided.

According to the NEMA 2014 Regulations, as amended Appendix 4, an EMPr must comply with section 24N of the Act and includes:

- (a) details of (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;
- (b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;
- (c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;
- (d) a description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-
  - (i) planning and design;
  - (ii) pre-construction activities;
  - (iii) construction activities;
  - (iv) rehabilitation of the environment after construction and where applicable post closure; and (v) where relevant, operation activities;
- (e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);
- (f) a description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to
  - (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;
  - (ii) comply with any prescribed environmental management standards or practices;
  - (iii) comply with any applicable provisions of the Act regarding closure, where applicable;

- (iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;
- (g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);
- (h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);
- (i) an indication of the persons who will be responsible for the implementation of the impact management actions;
- (j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;
- (k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);
- (l) a program for reporting on compliance, taking into account the requirements as prescribed by the regulations;
- (m) an environmental awareness plan describing the manner in which-
  - (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and
  - (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and
- (n) any specific information that may be required by the competent authority.

The *Generic EMPr* which forms part of this BAR has been compiled strictly according to above-mentioned principles.

Identified impacts and mitigation / management outcomes will be monitored through the application of the Environmental Management Programme (EMPr) that is included as Appendix E of this Basic Assessment Report.

## 6.5 Conclusion of Impact Assessment

### 6.5.1 Summary of Impact Assessment Tables

#### **Design and Pre-construction Phase**

| Impact Description  | Extent   | Duration    | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|---|----------|-------------|-------------|-----------------------|---------------------------------|-------------------------------|
| Route Selection: Impact on landowners                     | Regional | Permanent   | Definite    | Moderate              | High                            | Low                           |
| Route Selection: Impact on environmental sites / features | Local    | Medium term | Definite    | Severe                | High                            | Low                           |

### Construction Phase

| Impact Description                  | Extent   | Duration  | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|-------------------------------------|----------|-----------|-------------|-----------------------|---------------------------------|-------------------------------|
| Impact on flora                     | Local    | Medium    | Definite    | Moderate              | Moderate                        | Low                           |
| Impact on High Sensitive Ecosystems | Regional | Permanent | Definite    | Severe                | High                            | Low                           |
| Impact on fauna                     | Site     | Medium    | Definite    | Low                   | Moderate                        | Low                           |
| Birds: Electrocution                | Regional | Short     | Possible    | Moderate              | Low                             | Very Low                      |
| Birds: Collision                    | Regional | Short     | Possible    | Moderate              | Low                             | Very Low                      |
| Birds: Habitat disturbance          | Site     | Short     | Possible    | Moderate              | Low                             | Very Low                      |
| Impact on aquatic features          | Local    | Short     | Possible    | Low                   | Low                             | Very Low                      |
| Impact on heritage resources        | Site     | Short     | Unlikely    | Low                   | Low                             | Very Low                      |
| Risk for groundwater pollution      | Local    | Medium    | Possible    | Moderate              | Moderate                        | Low                           |
| Increased risk for erosion          | Local    | Long      | Probable    | Moderate              | Moderate                        | Low                           |
| Impact on the community             | Local    | Short     | Probable    | Moderate              | Moderate                        | Low                           |
| Noise                               | Local    | Short     | Probable    | Low                   | Low                             | Low                           |
| Dust                                | Local    | Short     | Probable    | Moderate              | Moderate                        | Low                           |

### Post-Construction and Operational Phase

| Impact Description                                       | Extent | Duration  | Probability | Magnitude / Intensity | Significance without mitigation | Significance after mitigation |
|--|--------|-----------|-------------|-----------------------|---------------------------------|-------------------------------|
| Improper site clearance after construction               | Local  | Short     | Probable    | Moderate              | Moderate                        | Low                           |
| Lack of rehabilitation: Environmental damage and erosion | Local  | Permanent | Probable    | Moderate              | Moderate                        | Low                           |
| Insensitive servitude clearing for maintenance purposes  | Local  | Medium    | Probable    | Moderate              | High                            | Low                           |

### 6.5.2 Conclusion

- As can be seen from the summary tables above, all identified impacts can be mitigated to acceptable levels.
- The impacts assessed include issues raised by the different specialists as well as other impacts as identified by the EAP.
- All natural, social and cultural functions and processes will be able to continue *after* mitigation measures have been applied.
- No substantial impact *after* mitigation has been applied is expected to occur.
- The impact of this project can, in general, be seen as minimal.
- All the mitigation measures are included in the Environmental Management Programme, which means that the Applicant is legally bound to follow the recommendations.



## CHAPTER 7: CONCLUSION

### 7.1 Assumptions, Uncertainties, and Gaps in Knowledge

#### *Assumptions*

It is assumed that all documentation and information obtained from the different stakeholders, professional team members and specialists are accurate, unbiased and valid.

#### *Uncertainties*

The development proposal in relation to its environment was thoroughly investigated by various specialists and professionals and there are therefore no uncertainties with regards to the development as proposed.

#### *Gaps in knowledge*

Extensive relevant specialist and engineering studies were undertaken for this project and it is highly unlikely that any missing information could influence the outcome of this project.

### 7.2 Environmental Impact Statement

Specialist studies, landowner negotiations and public participation were undertaken for this project and the following is applicable:

#### ***Specialist studies***

- *Ecological Assessment*

Nine different Vegetation Units were identified within the study area. Two of these units are having a high conservation value and the impact that the construction of the power line will have on these areas cannot be mitigated. In order to conserve these high functioning ecosystems it was therefore required to reroute the power line so that the alignment avoids these areas in its entirety. The Preferred Route (Alternative 1) incorporates this recommendation and has a low / negligible impact on these sensitive areas.

Only one **red data specie** which is also a protected species namely *Euphorbia barnardii* was found to be present in the study area. This species has a conservation status of “endangered” due to habitat destruction and other agricultural activities. These trees should be protected and pylons should be positioned in such a way that they are not being impacted on

Nine **protected trees** were identified within the study area. No person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a license or exemption granted by the Minister. DEFF as well as the Department of Nature Conservation (Limpopo) will have to be approached to obtain the required permits for the removal of any protected tree/plant species.

A total of eleven medicinal plant species, have been identified within the study area. Apart from two protected trees, most of the species are common species that occur in abundance throughout the region. Two of these species are declared alien invasive weeds.

It is concluded that all impacts could be mitigated to LOW or NEGLIGIBLE levels.

- *Watercourses*

No natural wetlands were found to be present on the proposed route or corridor area with the watercourse systems being the Steelpoort River and tributaries. The power line will cross the Steelpoort River twice as well as various drainage lines.

Pylons will not be placed closer than 32m from the river's edge or that of the tributaries. The river and tributaries were delineated and all pylons will be placed outside of the delineated areas. Construction disturbance is not allowed within the delineated buffer areas. A Water Use License Application (WULA) with the Department of Human Settlement, Water & Sanitation is therefore not required.

The impact on watercourses is deemed to be LOW and can be mitigated to VERY LOW.

- *Bird Impact Assessment*

The impact that electrocutions, collisions and habitat transformation could have on the birds of the area is judged to be LOW and can be further reduced to VERY LOW with the application of mitigation measures.

- *Heritage Impact Assessment*

No heritage resources were found, but a walk-down is nevertheless recommended to ensure that no sensitive features that could have been missed during the site investigation will be impacted on. Impact on the heritage resources of the area will be NEGLIGIBLE.

A large corridor (1 420 hectares) along the length of the line was investigated by the specialist team. Walk-downs by the ecologist, heritage- and avifauna specialist must be conducted after the Environmental Authorisation has been issued and once the draft pylon positions have been decided on and pegged. This would ensure sensitive tower and infrastructure placement within the corridor. The purpose is to avoid as far as possible sensitive plant communities, large / protected trees, heritage sites and bird nesting areas.

### **Public Participation**

- Even though the project was widely advertised and as per the NEMA Regulations very little comment from the general public was received. All objections / queries were satisfactorily addressed.

All impacts were assessed before and after mitigation have been applied. The significance of the impacts *after* mitigation has been rated as Low / Very Low.

## **7.3 Why the Activity Should, or Should Not be Authorised**

It is the professional and objective opinion of the independent EAP that the project could be authorised because of the following :

- All reasonable actions were taken to identify relevant environmental components in the study area.
- The specialist input obtained is comprehensive and effective in providing an assessment of the status quo of the study area, identifying potentially sensitive areas and issues of concern as well as identifying impact that require re-consideration of route alternatives.
- Significant and reasonable actions were taken to identify and notify all Interested & Affected Parties that include government departments, relevant authorities, general stakeholders and potentially affected landowners of the project. Extensive and continuous communication with the IAPs took place.
- The BAR includes all proceedings, findings and recommendations which result from this study.
- All relevant legal requirement in terms of the Environmental Impact Assessment Regulations published in 2014, as amended were complied with.

The EAP can without reservation recommend this Environmental Impact Report for Environmental Authorisation by the Department of Environmental, Forestry & Fisheries (DEFF).

## **7.4 Environmental Authorisation**

### **7.4.1 Period for which the EA is required**

This period is from the date of which the EA has been issued until the end of all construction activities. A period of 8 years is required – this will allow for any unforeseen circumstances.

### **7.4.2 Date on which the activity will be concluded**

The planned end of construction is foreseen to be in the second quarter of 2021.

### 7.4.3 Date when post-construction monitoring must be finalised

The planned end of the post-construction monitoring requirements is August 2022.

## 7.5 Recommendation by the Environmental Assessment Practitioner

It is recommended that the following are included in the Environmental Authorisation:

- The implementation of the Environmental Management Programme is a condition of authorisation.
- The route corridor as presented in the Final Route Map attached as Appendix A2 is approved for the Final Route Alignment.
- The exact servitude and tower positions required by Eskom should be determined in cooperation with the directly affected landowners to accommodate site-specific requirement.
- A route walk-down by the Bird Specialist, the Ecologist and the Archaeologist must be undertaken once the draft positions of the pylons have been identified.

The route corridor investigated has the Steelpoort River as the western border and the R555 provincial road as the eastern border. The total corridor size is approximately 1 280 hectares. It is requested that the *corridor* be approved as part of the environmental authorisation and not the servitude only. This will enable reasonable adjustments within the corridor during the walk-down and servitude negotiations with the relevant landowner without having to enter into an additional environmental authorisation process. ***Note that Eskom will however only register the required servitude within the route corridor and not the entire corridor.***

## 7.6 Affirmation by the Environmental Assessment Practitioner

We, Annelize Grobler & Susanna Nel, herewith affirm the following:

- The information contained in this report is to the best of our knowledge and experience correct.
- All relevant comment and input provided by the stakeholders and IAPs are included and addressed in this BAR.
- Input and recommendations from the specialist reports are provided in and integrated with the BAR.
- All information made available by the EAP to IAPs and any responses thereto as well as comment and input from IAPs are provided in the BAR.



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Annelize Grobler

DATE: 25 May 2020



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Susanna Nel

DATE: 25 May 2020