

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS  
TSHWANE STRENGTHENING PROJECT

MAY 2009

BACKGROUND INFORMATION DOCUMENT

PROPOSED UPGRADE OF VERWOERDBURG  
SUBSTATION AND NEW PHOEBUS SUBSTATION  
AS WELL AS KWAGGA-PHOEBUS 400 kV  
TRANSMISSION POWER LINE UPGRADE  
INCLUDING A 275 FEEDER BAY FOR  
KWAGGA SUBSTATION AND  
ASSOCIATED INFRASTRUCTURE

GAUTENG PROVINCE  
AN ESKOM INITIATIVE



The current Eskom transmission network supplies Tshwane Municipality via three points, namely: Kwagga, Njala and Verwoerdburg. The contracted reserve capacity at each point is reviewed annually. The latest information shows that Kwagga's reserve capacity is 840MVA, Njala is 650MVA and Verwoerdburg is 200MVA. The meter measurements show that the maximum loading has reached 920MVA at Kwagga (2007), 700MVA at Njala (2007) and 208MVA at Verwoerdburg (2007).

Tshwane has applied for new supply points and a step load increase to Eskom Transmission and Distribution. The three parties agreed on the 20-year load forecast for Tshwane Municipality and also concluded that Tshwane Municipality and the Eskom transmission networks supplying Tshwane need to be strengthened. A number of options were analyzed based on technical and economical benefits to all parties involved.

The proposed solution, which is known as the City of Tshwane Electricity Supply Plan Scheme proposed to build four new substations in the Tshwane area. Three will be built by ESKOM and one will be built by Tshwane. These four substations are: ESKOM Phoebus 400/275/132kV substation; ESKOM Verwoerdburg 400/132kV substation; ESKOM Anderson 400/132kV substation and Tshwane 400/132kV Wildebeest substation. The proposed solution will meet the Tshwane electricity requirement and is the less costly. This solution will also de-load the heavily loaded Minerva substation and Apollo substation.

Phase 1 of this scheme entails the following:

- » Construction of 275kV line from Phoebus to Kwagga (~30km)
- » Establishment of Phoebus substation and extension of Kwagga substation
- » Establishment of Verwoerdburg substation and 2 x 400 kV turn in & out of Apollo-Pluto

## AIM OF THIS BACKGROUND INFORMATION DOCUMENT

This document aims to provide you, as an interested and/or affected party (I&AP), with:

- » an overview of the components of the Tshwane Strengthening Project.
- » an overview of the Environmental Impact Assessment (EIA) process and studies being undertaken to assess the proposed project.
- » details of how you can become involved in the EIA process, receive information, or raise issues, which may concern and/or interest you.

## OVERVIEW OF THE PROPOSED PROJECT

The Tshwane Strengthening Project includes the following components:

- » Extension of the existing Verwoerdburg Substation.
- » Construction of 400kV loop-in power lines from the existing Apollo-Pluto transmission lines to feed the Verwoerdburg Substation, a distance of approximately 6 km.
- » Construction of 400kV loop-in power lines to feed the Phoebus Substation from the existing Apollo-Dinaledi transmission power line, a distance of approximately 10 km.
- » Construction of a new 400kV transmission power line between the Phoebus Substation and the Kwagga Substation, a distance of ~30 km.
- » Construction of a new Phoebus substation adjacent to the Hangklip Substation.

In total, approximately 46 km of new power line is proposed as part of this proposed project. The purpose of this proposed project is to:

- » Improve the reliability of the existing Central Transmission network.
- » Improve the voltage regulation on the Central Grid Distribution and Tshwane Municipality network.
- » Create additional Transmission network capacity to be able to supply the increasing electricity demand in the Central Grid.

Technically feasible alternative transmission power line alignment corridors have been identified for investigation during the EIA process within the broader study area. Through the EIA process, a preferred alternative will be nominated for the two components of the project. There are no alternative site locations for the substations as these are existing substations. The procurement of the power line servitudes will be through a negotiation process with each affected landowner and will be subject to the project being authorised by DEAT. The process of servitude negotiation is independent of the EIA process and undertaken directly by Eskom Transmission.

## ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

In terms of Chapter 5 of the National Environmental Management Act (NEMA; Act No. 107 of 1998), 'the construction of facilities or infrastructure, including associated structures or infrastructure, for the transmission and distribution of above ground electricity with a capacity of 120 kilovolts or more' is a listed activity requiring an EIA (Item 1 (l) of Schedule 2). Therefore, Eskom requires authorisation from the National Department of Environmental Affairs and Tourism (DEAT; in consultation with the Gauteng Provincial Department of Agriculture, Conservation and Environment (GDACE) for the undertaking of the proposed project. In order to obtain this authorisation, Eskom acknowledge the need for comprehensive, independent environmental studies to be undertaken in accordance with the EIA Regulations. The three project components have been registered with DEAT under Application Reference numbers 12/12/20/1470 (Apollo-Verwoerdburg 400kV transmission power line) 12/12/20/1471 (Kwagga-Phoebus 400kV Transmission power line) and 12/12/20/1524 (Establishment of Phoebus substation, and extension to Kwagga substation).

An EIA is an effective planning and decision-making tool. It allows the environmental consequences resulting from the establishment and operation of a technical facility to be identified and appropriately managed. It provides the opportunity for the developer to be forewarned of potential environmental issues, and dialogue with affected parties.

Eskom has appointed Savannah Environmental, as independent consultants, to undertake a Scoping and Environmental Impact Assessment to identify and assess all potential environmental impacts associated with the proposed project for the area as identified, and propose appropriate mitigation measures in an Environmental Management Plan (EMP). As part of these environmental studies, I&APs will be actively involved through the public involvement process.

The phases of an EIA are:



## EIA PROCESS

### WHAT ARE THE POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PROPOSED PROJECT?

A number of potential environmental impacts associated with the proposed project have been identified. These potential impacts will be assessed through the following specialist studies:

- » Impacts on the social environment, including land use and tourism potential
- » Impacts on ecology, fauna and flora

- » Impacts on heritage sites
- » Impacts on visual quality and aesthetics
- » Impacts on avifauna
- » Impacts on agricultural potential

These specialist studies will be undertaken in two phases:

1. A desk-top Scoping Study, wherein potential issues associated with all alternatives identified will be evaluated.
2. A detailed assessment of potentially significant impacts identified in the Scoping Phase. Practical and achievable mitigation measures will be recommended in order to minimise potentially significant impacts identified. These recommendations will be included within a draft Environmental Management Plan (EMP) for this project.

The potential environmental impacts associated with not undertaking the proposed project will also be explored through the EIA process. Specialist studies will be informed by existing information, field observations and input from the public participation process. As an I&AP, your input is considered an important part of this process, and we urge you to become involved.

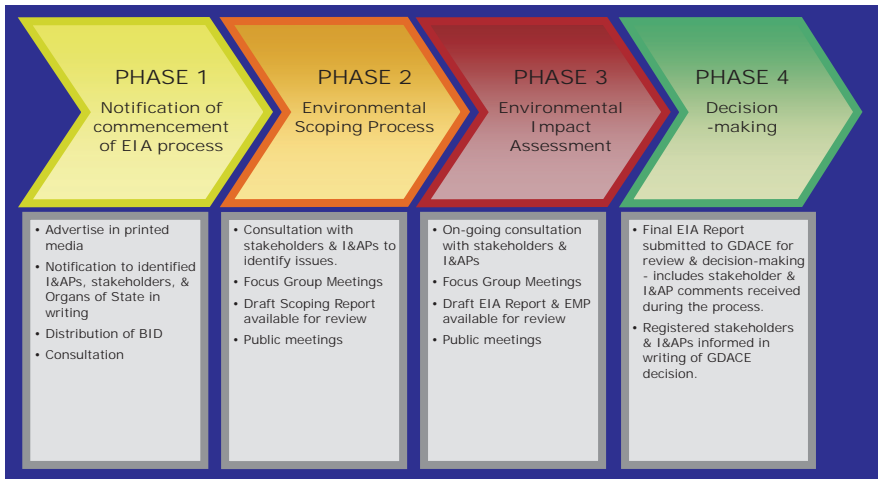
## PUBLIC INVOLVEMENT PROCESS

The sharing of information forms the basis of the public involvement process and offers you the opportunity to become actively involved in the EIA from the outset. Comments and inputs from I&APs during the EIA process are encouraged in order to ensure that potential impacts are considered within the ambit of the study.

The public involvement process aims to ensure that:

- » Information containing all relevant facts in respect of the application is made available to I&APs for review.
- » Participation by potential I&APs is facilitated in such a manner that I&APs are provided with a reasonable opportunity to comment on the application.
- » Adequate review periods are provided for I&APs to comment on the findings of the draft Scoping and EIA reports.

In order to ensure effective participation, the public involvement process includes the following steps:



## YOUR RESPONSIBILITIES AS AN I&AP

In terms of the EIA Regulations, your attention is drawn to your responsibilities as an I&AP:

- » In order to participate in this EIA process, you must register yourself on the project database.
- » You must ensure that any comments regarding the proposed project are submitted within the stipulated timeframes.
- » You are required to disclose any direct business, financial, personal or other interest which that you may have in the approval or refusal of the application for the proposed project.

## HOW TO BECOME INVOLVED

1. By responding (by phone, fax or e-mail) to our invitation for your involvement which has been advertised in local and national newspapers.
2. By returning the attached Reply Form to the relevant contact person.
3. By attending the meetings to be held during the course of the project. As a registered I&AP you will automatically be invited to attend these meetings. Dates for public meetings will also be advertised in local and regional newspapers.
4. By contacting the consultants with queries or comments.
5. By reviewing and commenting on the draft Scoping and EIA Reports within the stipulated 30-day review periods.

If you consider yourself an I&AP for this proposed project, we urge you to make use of the opportunities created by the public involvement process to provide comment, or raise those issues and concerns which affect and/or interest you, and about which you would like more information. Your input into this process forms a key element of the EIA process.

By completing and submitting the accompanying Reply Form, you automatically register yourself as an I&AP for this project, and are ensured that your comments, concerns or queries raised regarding the project will be noted.

## COMMENTS AND QUERIES

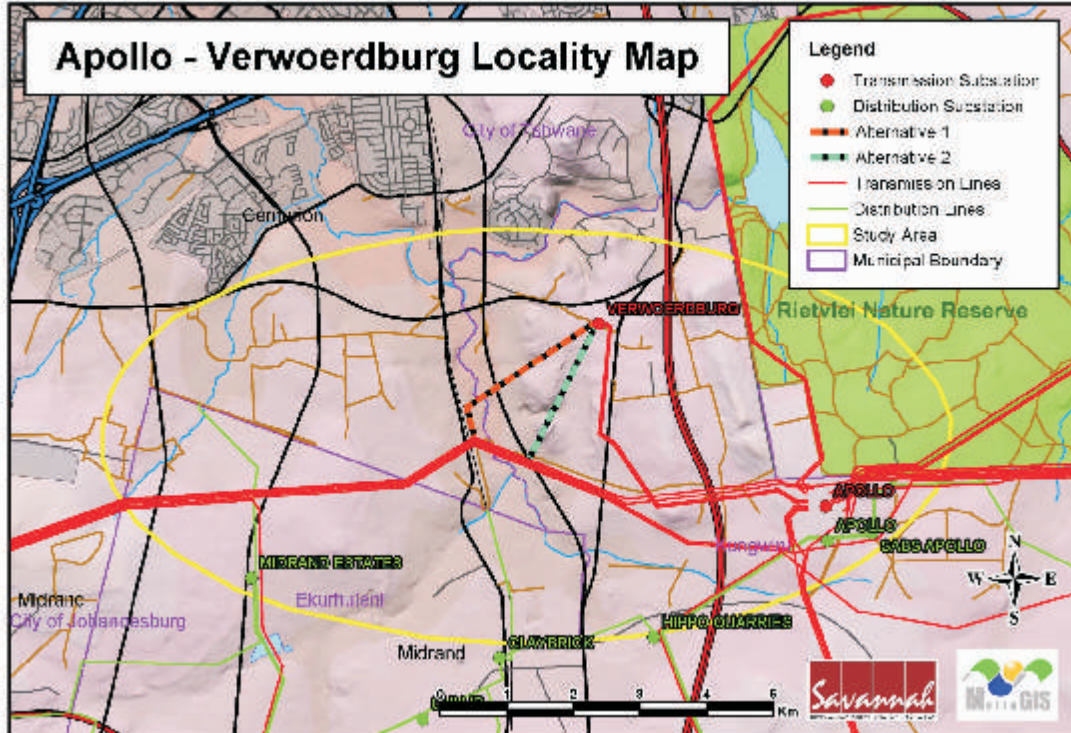
Direct all comments, queries or responses to:

Savannah Environmental (Pty) Ltd  
Contact: Alicia Govender  
Tel: 011 234 6621  
Fax: 086 684 0547  
E-mail: [alicia@savannahSA.com](mailto:alicia@savannahSA.com)

To view project documentation, visit

[www.savannahsa.com](http://www.savannahsa.com)

# Apollo - Verwoerdburg Locality Map

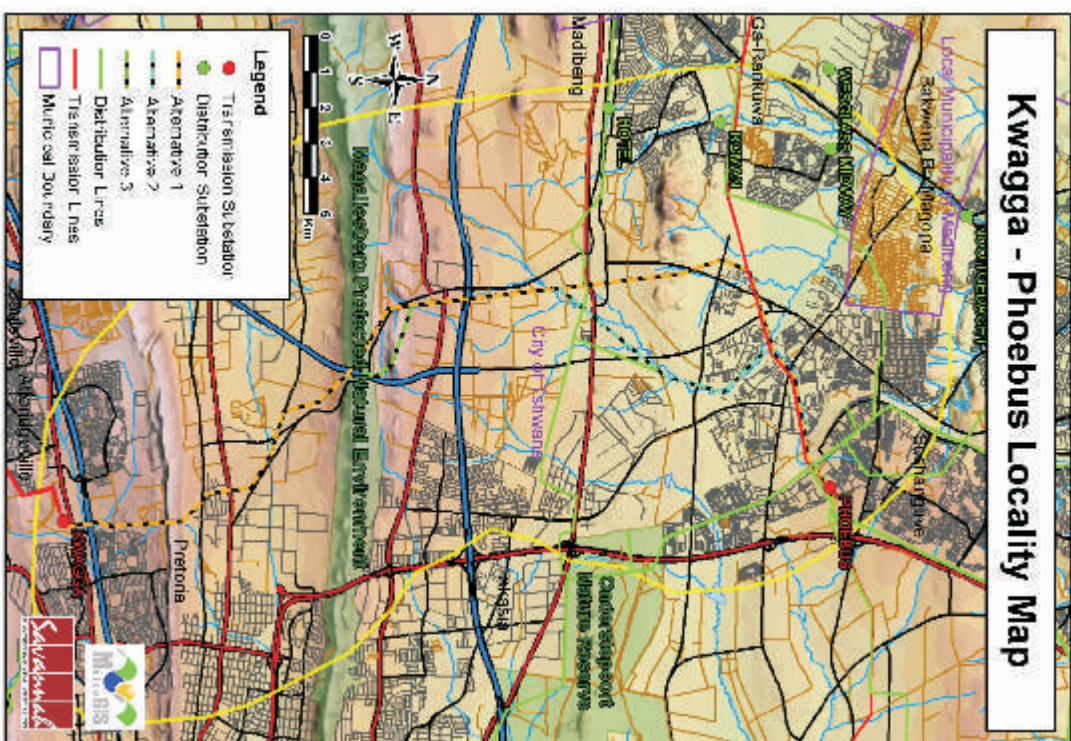


## Legend

- Transmission Substation
- Distribution Substation
- Alternative 1
- Alternative 2
- Transmission Lines
- Distribution Lines
- Study Area
- Municipal Boundary



# Kwaga - Phoebus Locality Map



## Legend

- Transmission Substation
- Distribution Substation
- Alternative 1
- Alternative 2
- Alternative 3
- Distribution Lines
- Transmission Lines
- Study Area
- Municipal Boundary

