

**DRAFT ENVIRONMENTAL
SCOPING REPORT**

**FOR THE PROPOSED
STEELPOORT INTEGRATION PROJECT**

LIMPOPO PROVINCE

DRAFT FOR PUBLIC REVIEW
August 2007

Prepared for
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SUMMARY

1. Project Overview

Eskom Holdings Ltd (Eskom) is the primary supplier of the electricity in South Africa. Eskom is currently responding to the growing electricity demand within South Africa, and will need to establish new generation and transmission capacity in South Africa over the next few years. Through the Integrated Strategic Electricity Planning (ISEP) process, Eskom continually assesses the projected demand for electricity within South Africa. As part of this process, Eskom continues to investigate a variety of electricity generation options.

As part of its assessment of a range of electricity supply options, Eskom is planning a new Pumped Storage Scheme (PSS) approximately 40 km North-West of Eskom's existing Simpron substation in the Mpumalanga Province. This PSS will have an installed capacity of 1 520 MW, and is scheduled to be in operation by 2014. In order to integrate this PSS into the electricity transmission network, Eskom Transmission is proposing the following:

- » The construction of a new 400kV substation, in close proximity to the PSS (hereafter referred to as the Steelpoort Substation).
- » The construction of two 400kV transmission power lines looping in and out of the Duvha-Leseding 400kV transmission power line to the proposed Steelpoort Substation.
- » A 400kV transmission power line between the proposed Steelpoort

Substation and the existing Merensky Substation, located near the town of Steelpoort.

- » The establishment of an additional feeder bay within the existing footprint of the Merensky Substation to connect the new 400kV transmission power line. This extension to the substation will be accommodated within the existing Eskom property boundaries at this existing substation. No impacts are anticipated to be associated with this extension work, and therefore this was not required to be considered in detail within the EIA.
- » Associated works to integrate the proposed new substation into Eskom's electricity transmission grid (including the construction of service/access roads, the construction of a communication tower at the substation site, etc).

This project is to be known as the Steelpoort Integration Project.

2. Environmental Impact Assessment

The proposed Steelpoort Integration Project is subject to the requirements of the Environmental Impact Assessment Regulations (EIA Regulations) published in terms of Section 24(5) of the National Environmental Management Act (NEMA, No 107 of 1998).

The Environmental Scoping Study has been undertaken in accordance with these Regulations. This Environmental Scoping Study aimed at identifying potential issues associated with the

proposed project, and defining the extent of studies required within the EIA. This was achieved through an evaluation of the proposed project, involving the project proponent, specialists with experience in EIAs for similar projects, and within the study area and a consultation process with key stakeholders that included both relevant government authorities and interested and affected parties (I&APs). In terms of the EIA Regulations, feasible alternatives (including the 'do nothing' alternative) have been considered within the Scoping Study.

3. Consideration of the 'do-nothing' alternative

The 'do-nothing' alternative is the option of not constructing the Steelpoort Integration Project.

The electricity demand in South Africa is placing increasing pressure on Eskom's existing power generation and transmission capacity. South Africa is expected to require additional peaking capacity by 2007, and baseload capacity by 2010, depending on the average growth rate.

In response to the need for additional peaking capacity, Eskom is planning the planning a new PSS approximately 40 km North-West of Eskom's existing Simplon substation in the Mpumalanga Province. In order to integrate this PSS into the electricity transmission network, and thereby transmit the electricity generated to the country, Eskom Transmission is proposing the construction of a substation and power

lines to integrate Steelpoort PSS into the Transmission grid.

The 'do nothing' alternative will therefore result in the PSS not being integrated into the transmission network and the power generated by the PSS not being transmitted.

The 'do nothing' alternative is therefore not considered to be a feasible alternative.

4. Evaluation of Substation Site Alternatives Identified

The location of the proposed new substation is constrained by the location of the PSS (determined through a separate EIA process), technical and economic constraints and physical factors (such as the underlying geotechnical conditions and the local topography). Therefore, only **one reasonable and feasible substation site** has been identified for consideration within the EIA process.

This proposed site is generally flat, with a slight slope to the south-east. The proposed substation site occurs within *Kirkia wilmsii-Acacia caffra* Mountain Bushveld in a part of the study area that is classified as having high sensitivity from an ecological perspective. The site is located adjacent to steep mountain slopes classified as having very high sensitivity and near to a non-perennial drainage line (200 m away) containing *Acacia gerrardii* woodland.

The broader area surrounding the substation site will be developed for the PSS (including the establishment of the

lower dam, associated buildings and access roads), which will result in a significant alteration of the local environment.

The majority of potential impacts identified to be associated with the construction and operation of the proposed substation are anticipated to be localised and restricted to the proposed Steelpoort Substation site. No environmental fatal flaws were identified to be associated with the site, although a number of issues requiring further study have been highlighted. These issues will be assessed in detail within the EIA phase of the process.

5. Evaluation of Transmission line Corridor Alternatives Identified for the turn in lines to the Duvha-Leseding line

As a result of topographical constraints of the area between the Steelpoort Substation and the existing Duvha-Leseding 400kV transmission power line only **one reasonable and feasible alternative transmission power line corridor** was identified for consideration within the EIA process (refer to Figure 1).

Technical alternatives identified for the construction of the lines looping-in and -out of the existing Duvha-Leseding 400kV transmission power line to the proposed Steelpoort Substation are:

- » The construction of **two 400kV lines in parallel**, each with a servitude width of 55 m in width. This would involve the use of

conventional towers which are approximately 35 m in height.

- » The construction of the two 400kV lines as a **double-circuit line**. This would involve the use of one tower of approximately 55 m in height, which could accommodate both lines. This option would require a single servitude of 55 m in width.

The proposed turn-in lines cross some areas of high to very high ecological sensitivity, and potentially impact on the communities of Hlogotlou on the plateau. As the construction of a single double-circuit line instead of two power lines in parallel would limit the amount of space required for the establishment of the powerline (i.e. 55 m vs. 110 m) the use of this technical option could minimise the majority of impacts on both the biophysical and social environment. The **option of constructing a single double-circuit line** is the **preferred option** from an environmental perspective.

However, if self-supporting double circuit towers are used, it will result in more perching space for birds on the towers. This, in turn, could result in a bigger risk of streamer-induced faulting on these towers. This has the potential to impact on the operation of the transmission power line.

No environmental fatal flaws were identified to be associated with the proposed transmission power lines, although a number of issues requiring further study have been highlighted. These issues will be assessed in detail within the EIA phase of the process.

6. Evaluation of Transmission line Corridor Alternatives Identified for the Steelpoort-Merensky 400kV line

Two reasonable and feasible alternatives were identified for consideration for the construction of the proposed Steelpoort-Merensky 400kV line (refer to Figure 1), i.e.:

- » An alignment to the west of the R555, approximately following this road more for the majority of the route to the Merensky Substation, referred to as the **western alternative**.
- » An alignment to the east of the R555 and the De Hoop Dam to the Merensky Substation, referred to as the **eastern alternative**.

Through the public consultation process and the evaluation of potential impacts, a number of localised sub-alternatives were identified for consideration, i.e.:

- » The northern sub-alternative
- » The southern sub-alternative
- » The R555 sub-alternative

The identified transmission power line alternatives cross different proportions of habitats in different sensitivity classes and potentially impact on numerous land uses and communities.

From the specialist studies undertaken there are varying conclusions with regards to the preferred alternative alignment for the proposed Steelpoort-Merensky 400 kV transmission power line. The following has been concluded:

- » The **western alternative** will minimise potential impacts on ecology and agricultural potential as this alternative traverses transformed areas. The selection of the **northern sub-alternative** will aid in further minimising ecological impacts.
- » The **R555 sub-alternative** is nominated as the preferred option from an avifauna perspective as this alternative holds the least risk of bird interactions.
- » The **eastern alternative** is nominated as the preferred alternative from a social and heritage perspective.
- » The **southern sub-alternative** is nominated as the preferred option from a visual perspective.

The eastern alternative crosses the DWAF Conservation Area, an area which is protected in terms of the National Forests Act (No 84 of 1998), and any activities which may cause deforestation in this area (such as the establishment and maintenance of a power line servitude) are prohibited. DEAT and DWAF have indicated that an alignment through this Conservation Area would, therefore, not be considered favourably for authorisation. This is considered to be a fatal flaw to the establishment of a transmission power line within this section of the eastern alternative alignment. Therefore, this section of the eastern alternative is eliminated as a feasible option. Therefore, from a social and heritage perspective, the next best option will need to be selected for further investigation.

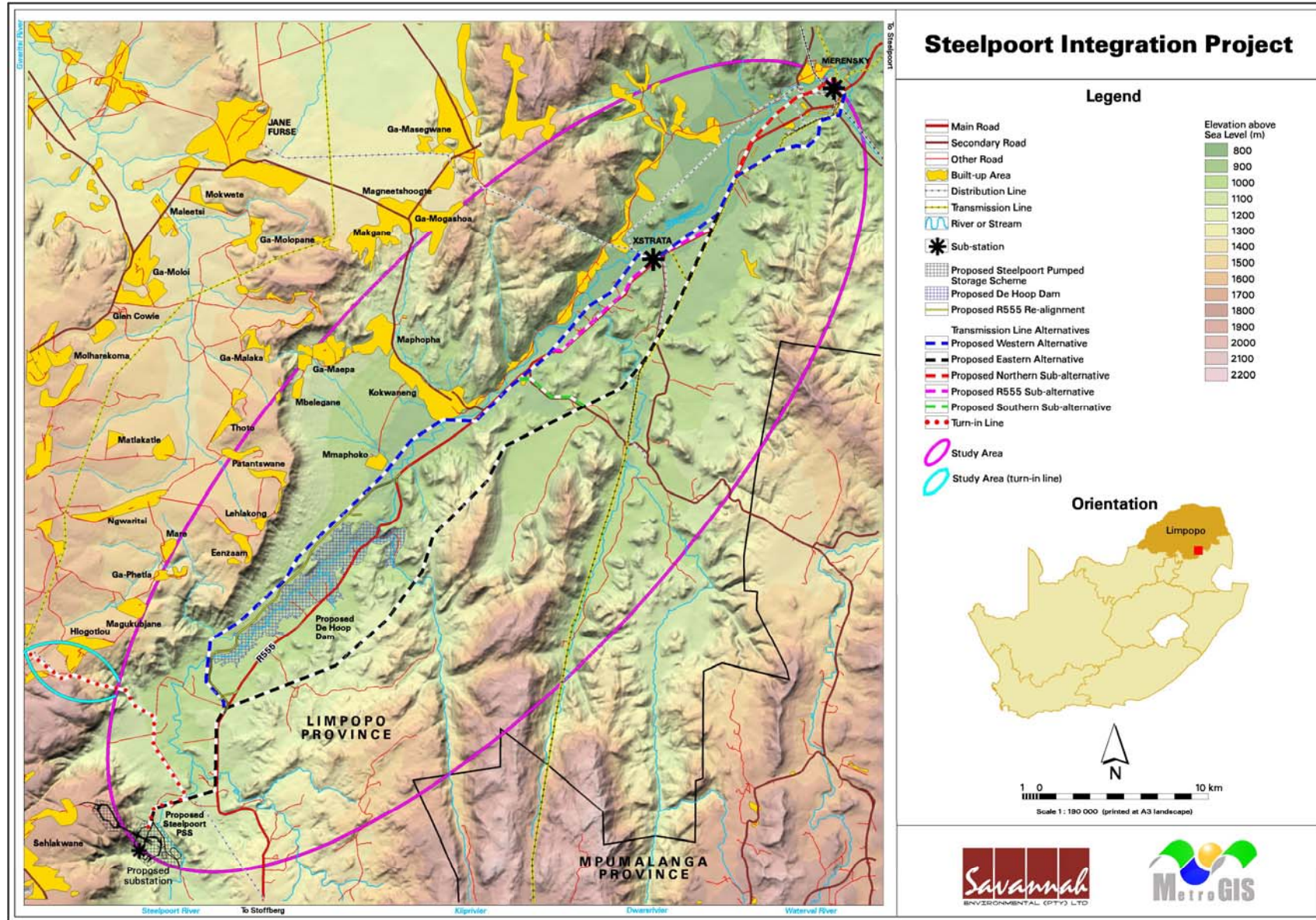


Figure 1: Map showing alternatives considered within the Environmental Scoping Study

From a heritage perspective, the majority of sites of potential significance which could be potentially impacted are located within the south western section of the study area. Alignment of the proposed transmission power line along any of the sub-alternatives identified will make little difference to the significance of the potential impacts on these sites. Impacts on these sites may be of high significance and this aspect requires further investigation within the EIA phase.

From an overall social perspective, the second preferred alignment is the western alternative following the **R555 sub-alternative** alignment. Potential impacts associated within this alternative could potentially include impacts on settlements, established tourism areas (game lodges) or areas with tourism potential (the De Hoop Dam). Therefore, detailed assessment of this alternative will be required in the EIA phase of the study in order to define mitigation measures which are required to be implemented in order to minimise potential impacts.

A possible mitigation measure includes a slight deviation on the western alternative where this alignment crosses the portion of Tigershoek 140JS belonging to Mr J Roux. It is proposed that the western alternative be re-aligned in this area to follow the R555 more closely in order to minimise the cumulative impact on this property. This proposed deviation will require

further investigation within the EIA phase in order to assess potential impacts associated with this proposed deviation.

From the above it is clear that there are varying conclusions with regards to the preferred alternative alignment for the proposed Steelpoort-Merensky 400 kV transmission power line. In order to make clear recommendations regarding the preferred alternative, more detailed studies are required to be undertaken within the EIA phase for the **western alternative**, the **southern sub-alternative**, the **R555 sub-alternative** and the **northern sub-alternative** (refer to Figure 2). Potentially significant impacts identified are required to be further assessed through the undertaking of detailed specialist studies for these alternatives.

A number of issues requiring further study have been highlighted through the environmental scoping study. These issues will be assessed in detail within the EIA phase of the process.

7. Evaluation of Cumulative Impacts

Apart from the proposed Steelpoort Integration Project which is the subject of this scoping study, there are currently numerous development projects underway in the study area, including:

- » The investigation into the establishment of a Pumped Storage Scheme (being

- undertaken by Eskom Generation)
- » The investigation into a pipeline alignment to provide water to the PSS from the De Hoop Dam (being undertaken by DWAF in consultation with Eskom)
- » The investigation of numerous new mining operations within the northern portion of the study area (being undertaken by various mining companies)
- » The investigation of residential developments in the northern section of the study area (being undertaken by the Greater Tubatse Local Municipality).

These developments will all impact in some way on the surrounding environment.

In addition, current operations and infrastructure in the area which may impact on the environment include:

- » The construction of the De Hoop Dam & associated infrastructure (being undertaken by DWAF)
- » The realignment of the R555 to the west of the De Hoop Dam (being undertaken by DWAF)
- » Numerous mining operations being undertaken within the northern section of the study area by various mining companies

- » Existing transmission and distribution power lines and substations
- » Existing gravel and tarred roads (including the R555 which passes through the centre of the study area).

There is, therefore, the potential for the proposed project to add to the cumulative impact on the environment in the area. Potential cumulative impacts identified include:

- » Potential impacts on flora, fauna and ecological processes
- » Potential impacts on heritage sites
- » Potential impacts on aesthetics and the visual character of the area
- » Potential impacts on the social environment, including impacts on tourism potential and land use

In order to determine the significance of cumulative impacts associated with the proposed Steelpoort Integration Project, these potential cumulative impacts will require further investigation within the EIA.

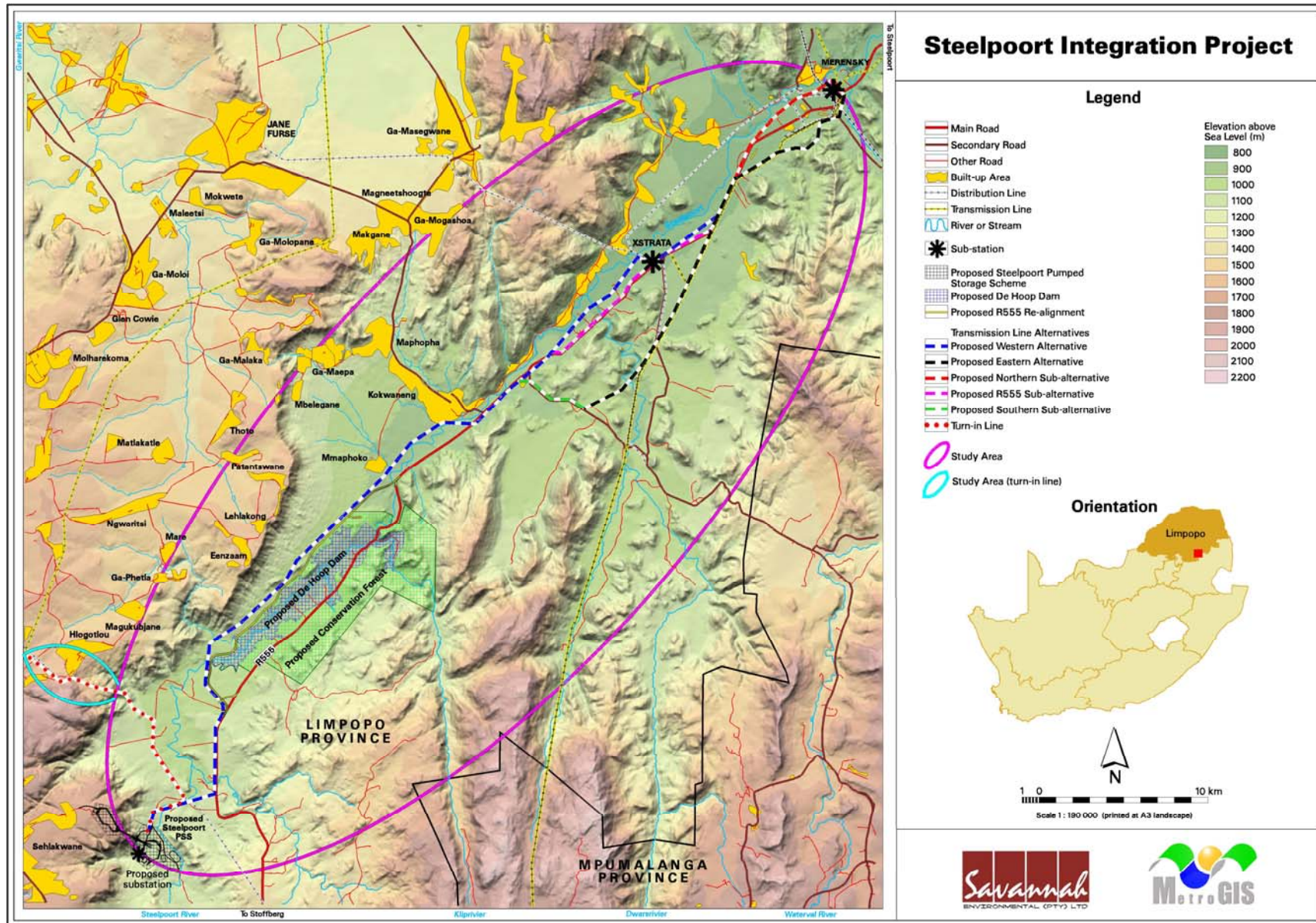


Figure 2: Alternatives nominated for investigation within the EIA

PURPOSE OF THE DRAFT ENVIRONMENTAL SCOPING REPORT

Eskom Holdings Limited (Eskom) is currently undertaking an Environmental Impact Assessment (EIA) process to determine the environmental feasibility of the proposed Steelpoort Integration Project in the Limpopo Province. Eskom has appointed Savannah Environmental, as independent environmental consultants, to undertake the EIA. Afrosearch, as specialist PPP consultants are undertaking the required public participation process on behalf of Savannah Environmental. The EIA process is being undertaken in accordance with the requirements of the National Environmental Management Act (NEMA; Act No. 107 of 1998).

This Draft Environmental Scoping Report documents the outcome of the Scoping phase studies of the EIA process, and contains the following:

- » An overview of the proposed project and a description of the feasible alternatives considered;
- » A description of the environmental issues identified and evaluation of the potential impacts associated with the proposed project;
- » Issues, concerns and suggestions raised by stakeholders to date;
- » Scoping and nomination of preferred alternatives for all components of the project; and
- » A description of the scope of the environmental impact assessment phase.

In accordance with the EIA Regulations, a primary aim the main purpose of the Draft Environmental Scoping Report is to provide stakeholders with an opportunity to verify that the issues they have raised to date have been captured and considered within the study, and to raise any additional key issues for consideration. The Final Scoping Report will incorporate all issues and responses prior to submission to the National Department of Environmental Affairs and Tourism (DEAT), the decision-making authority for the project.

PUBLIC REVIEW OF THE DRAFT ENVIRONMENTAL SCOPING REPORT

The Draft Scoping Report has been made available for review at the following public places in the project area from **10 August 2007 to 10 September 2007**:

- » Offices of Elias Motsoaledi Municipality
- » Offices of Greater Tubase Municipality
- » Offices of Makhuduthamaga Municipality
- » SAPS Burgersfort
- » SAPS Roosennekal
- » Laerskool Roosennekal
- » Laerskool Steelpoort
- » www.savannahSA.com

Please submit your comments to

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The due date for comments on the Draft Scoping Report is **10 September 2007**

Comments can be made in any of the following ways:

- » Written submissions via fax, post or e-mail; or
- » Comment by telephone.

PUBLIC MEETING

All interested and affected parties are invited to attend a public meeting to be held on **18 August 2007** at the **Steelpoort Primary School** at **10:30 – 12:30**.