

**PROPOSED MOKOPANE INTEGRATION PROJECT**

**SOCIAL IMPACT ASSESSMENT**  
As part of the  
**ENVIRONMENTAL IMPACT ASSESSMENT PROCESS**

**TRANSMISSION POWER LINE CORRIDORS,  
SUBSTATION SITES AND TURN-IN LINES**

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## EXPERIENCE RECORD

This report was compiled by **Ms Anita Bron**, with an economic review by **Mr Raoul de Villiers**, all from **MasterQ Research**.

**Ms Anita Bron** – MA (Research Psychology), MA (Social Impact Assessment – in process), BA Hons (Psychology), BA (Psychology, Criminology and Penology); a social impact assessment specialist with 7 year experience. Ms Bron specialises in social and market related research studies, as well as monitoring and evaluation processes. She has extensive experience in the social assessment of linear developments, such as transmission power lines. As a social specialist, her main duties include the primary as well as secondary collection of data, analysing and processing such data and based on the findings of such research, conduct an assessment of expected social impacts within a range of change processes. Her experience within the social development realm enables her to conduct informed assessments of potential impacts and based on the results of such assessments; provide input in terms of mitigation measures to be included in Environmental Management Plans. Ms Bron is a member of the South African Monitoring and Evaluation Association and the IAIA. She was a guest lecturer at the Universities of Johannesburg and Witwatersrand.

**Mr Raoul de Villiers** (M. Com, M. Econ) is a specialist in the manner in which large project based work is planned, with a special focus on determining the business and economic viability of projects. He is also an experienced Project Manager and has assisted large corporations and government departments with the execution of capacity building, restructuring and systems development projects. He has had a strong strategic focus, being involved in projects that have an organisation wide or industry wide impact. Mr de Villiers is a member of the IAIA.

The EIA regulations (1182 and 1183, as amended) states, amongst others, that an independent consultant must be appointed to act on behalf of the client and to ensure that the public participation process is managed properly. In this regard MasterQ Research submits that it has:

- The necessary required expertise to conduct socio-economic impact assessments, including the required knowledge and understanding of any guidelines or policies that are relevant to the proposed activity;
- Undertaken all the work and associated studies in an objective manner, even if the findings of these studies are not favourable to the project proponent;

- No vested financial interest in the proposed project or the outcome thereof, apart from remuneration for the work undertaken under the auspices of the above-mentioned regulations;
- No vested interest, including any conflicts of interest, in either the proposed project or the studies conducted in respect of the proposed project, other than complying with the required regulations; and
- Disclosed any material factors that may have the potential to influence the competent authority's decision and/or objectivity in terms of any reports, plans or documents related to the proposed project as required by the regulations.

## EXECUTIVE SUMMARY

The proposed Mokopane Integration Project is required as a result of the fact that the existing transmission power lines in the area do not have sufficient capacity to distribute the additional 4 500MW of power that will be generated by the new Medupi Power Station, without compromising the transmission network's reliability.

The proposed project includes the construction of a new substation in the Mokopane area as well as transmission power line infrastructure to integrate the new substation into the transmission network. The proposed Mokopane Integration Project will therefore include the following components:

- The construction and operation of a new 400/132kV substation near Mokopane;
- The integration of this substation into the transmission network by looping one of the existing Matimba-Witkop 400kV transmission power lines in and out the substation (i.e. two transmission power lines in parallel over a distance of approximately 10km);
- The construction and operation of a new 400kV transmission power line between the proposed Delta substation (near the Medupi Power Station) and the proposed Mokopane substation, covering a distance of approximately 150km;
- The construction and operation of a new 400kV transmission power line between the proposed Mokopane substation and the existing Witkop substation, covering a distance of approximately 60km;
- The construction and operation of a new 400kV transmission power line between the proposed Delta substation and the existing Witkop substation, covering a distance of approximately 200km; and
- The associated infrastructure, such as access roads, communication tower, etc., to integrate the new substation into the transmission grid and also to accommodate the new transmission power lines at the existing substations through, for example, the construction of new feeder bays at these substations.

As part of the Environmental Impact Assessment (EIA), an Environmental Scoping Study of the study area was completed and this included a Social Economic Scoping Study. The Socio-economic Impact Assessment (SEIA) followed, and the results of the SEIA contained in this report form part of the final Impact Assessment Study as part of the EIA.

The overall objective of the SEIA was to identify preferred Corridors and a preferred substation site. The SEIA aimed to:

- Identify the manner in which the proposed project might affect the lives of people and communities within the receiving environment, negative and/or positive by describing and assessing
  - the change processes to be expected in the affected social systems with the proposed project (baseline current and into the future);
  - the change processes to be expected in land use with the proposed project (baseline current and into the future); and
  - the change processes to be expected in the affected tourism activities and developments with the proposed project (baseline current into the future).

The following were considered:

- Demographic processes (the number and composition of people – e.g. number of tourists);
- Economic processes (the way in which people make a living and the economic activities in society – e.g. income from tourists);
- Geographical processes (land use patterns – e.g. how land is developed for tourists);
- Empowerment, institutional and legal processes (the ability of people to be involved and influence decision making processes; and the role, efficiency and operation of governments and other organisations); and
- Socio-cultural processes (the way in which humans behave, interact and relate to each other and their environment and the belief and value systems which guide these interactions – e.g. the way in which the landscape contribute to tourist expectations and experiences).

Considering all of these processes, potential social health impacts were also assessed. The aim was then to:

- Rate the identified potential impacts to determine severity and significance;
- Identify measures that should be put in place to enhance positive impacts and to reduce the significance of negative impacts; and
- Give Environmental management Plan (EMP) input.

Primary and secondary data sources were used to supplement data collected in the Scoping Phase in order to fulfil the objectives of the study.

**Primary data** collection methods involved a field trip by motor vehicle on the 1<sup>st</sup> to the 4<sup>th</sup> of December 2008 and again on 21, 22 and 28 July 2009. Data collected in the Scoping Phase during a field trip by motor vehicle on 10 and 12 June 2008, and a fly over on 11 June 2008 was also considered. Interviews and focus group discussions were held. The site visits included aspects such as:

- Interviews with landowners around economic issues;
- Visual observations of the route alternatives including structures, land use and current economic activities; and

- Examination of updated project description details to determine possible social and economic benefits and impacts.

Supplementary to the primary data, **secondary data** collection methods included the perusal of the following documentation:

- Obtaining the most recent demographic indicators from StatsSA;
- Obtaining economic related information from information gathered for the social components on the SEIA;
- Perusing the various locality maps generated through the project process;
- Sourcing of South African literature on Transmission power lines and their impact specifically on farming and hunting/conservation;
- A desktop aerial study of the affected area through the use of *Google Earth (2007)*;
- Issues, comments and questionnaire sheets submitted to the Public Participation Process (PPP) consultant.

A distinction was made between change processes and impacts. A **change process** was defined as change that takes place within the receiving environment as a result of an intervention. A potential **social impact** follows as a result of the change process occurring. However, a change process can only result in an impact once it is experienced as such by an individual/household/community/organisation on a physical and/or cognitive level.

The impacts that were assessed included:

- Geographical Processes
  - Description and Assessment of the Psycho-social Impacts as a result of involuntary resettlement.
  - Description and Assessment of mental/psycho-social and physical health impacts as a result of land use changes during construction and operation.
- Demographic processes
  - Description and Assessment of physical health impacts as a result of influx of workers during construction and operation.
  - Assessment of physical health impacts as a result of influx of job seekers during construction and operation.
- Socio-cultural processes
  - Description and Assessment of impact on social cohesion as a result of influx of workers during construction and operation.
  - Description and Assessment of nuisance impacts during construction and operation.
  - Description and Assessment of impact on sense of place during construction and operation.
- Bio-physical processes

- Description and Assessment on health impacts as a result of bio-physical changes during construction and operation.
- Economic Processes
  - Description and Assessment of the impact on hunting and tourism industry output as a result of project activities.
  - Description and Assessment of impact on hunting and tourism industry employment.
  - Description of economic injections and Assessment of project related economic output.
  - Description and Assessment of employment impact.
  - Description and Assessment of potential impacts on property values.

In order to assess the Corridor alternatives in respect of their anticipated social impacts, a distinction was made between the following impacts:

**Category 1:** Impacts that are not expected to differ between the proposed Corridor alternatives, e.g. the number of construction workers that will be needed for the proposed project remains the same, irrespective of the chosen alternative; and

**Category 2:** Impacts that are expected to differ between the proposed alternative Corridors, e.g. the number of households to be resettled increases if the development traversed densely populated areas as opposed to skirting populated areas.

### Category 1 Construction Impacts

Category 1 Impact	Significance	
	Before Mitigation	After Mitigation
<b>Corridors</b>		
Physical health impacts as a result of presence of construction workers.	32-72 Moderate- High	25-45 Low- Medium
Physical health impacts as a result of the influx of job seekers.	25-54 Medium	27-46 Low-Medium
Impact on health as a result of pollution of natural environment by construction workers and construction activities.	24-30 Low-Medium	21-27 Low

<b>Category 1 Impact</b>	<b>Significance</b>	
	<b>Before Mitigation</b>	<b>After Mitigation</b>
Psycho-social impact as a result of socio-cultural changes.	32 Medium	24 Low
Socio-cultural changes as a result of nuisance impacts.	21 Low	21 Low
Increase in employment opportunities.	36 Medium Positive	50 Medium Positive
Loss of employment.	20 Low	10 Low
Economic impact on hunting and tourism.	44 Medium	36 Medium
<b>Substation Sites</b>		
Impact on mental and/or physical health as a result of changes in land use activities.	32 Medium	28 Low
Impact on sense of place	28 Low	28 Low

### Category 2 Construction Impacts

Category 2 Impact	Significance	
	Before Mitigation	After Mitigation
Psycho-social impact as a result involuntary re-settlement (Corridor 1).	36-56 Medium	27-42 Low-Medium
Psycho-social impact as a result involuntary re-settlement (Corridor 7, 2, 8, 4-6).	27-42 Low-Medium	18-28 Low
Impact on mental and/or physical health as a result of changes in land use activities (Corridor 1).	Crop: 21-Low Cattle: 24-Low Game: 36-Medium	Crop: 12-Low Cattle: 14-Low Game: 24-Low
Impact on mental and/or physical health as a result of changes in land use activities (Corridor 2, 7).	Crop: 28-Low Cattle: 32-Medium Game: 36-Medium	Crop: 18-Low Cattle: 21-Low Game: 24-Low
Impact on mental and/or physical health as a result of changes in land use activities (Corridors 8,4,5,6)	Crop: 28-Low Cattle: 24-Medium Game: 36-Medium	Crop: 18-Low Cattle: 14-Low Game: 24-Low

**Category 1 Operation Impacts**

<b>Category 1 Impact</b>	<b>Significance</b>	
	<b>Before Mitigation</b>	<b>After Mitigation</b>
<b>Corridors</b>		
Physical health impacts as a result of presence of maintenance workers.	24-54 Low-Medium	16-36 Low- Moderate
Impact on health as a result of pollution of natural environment by maintenance workers and maintenance activities.	14 Low	14 Low
Changes in community cohesion as a result of socio-cultural changes.	24 Low	14 Low
Socio-cultural changes as a result of nuisance impacts.	14 Low	14 Low
Loss of employment.	20 Low	10 Low
Economic impact on hunting and tourism.	44 Medium	36 Medium
<b>Substation Sites</b>		
Impact on mental and/or physical health as a result of changes in land use activities	28-40 Low-Medium	24-36 Low-Medium

### Category 2 Operation Impacts

Category 2 Impact	Significance	
	Before Mitigation	After Mitigation
<b>Corridors</b>		
Impact on mental and/or physical health as a result of changes in land use activities (Corridor 1).	Crop: 21-Low Cattle: 24-Low Game: 24-33-Low-Medium	Crop: 12-Low Cattle: 14-Low Game: 14-20-Low
Impact on mental and/or physical health as a result of changes in land use activities (Corridor 2, 7).	Crop: 18-27-Low Cattle: 24-30--Low Game: 24-33-Low-Medium	Crop: 12-18-Low Cattle: 12-18-Low Game: 14-20-Low
Impact on mental and/or physical health as a result of changes in land use activities (Corridors 8,4,5,6)	Crop: 18-27-Low Cattle: 14-20-Low Game: 24-33-Low-Medium	Crop: 12-18-Low Cattle: 6-9-Low Game: 14-20-Low
Impact on sense of place Corridor 1	48 Medium	44 Medium
Impact on sense of place Corridor 2	44 Medium	40 Medium
Impact on sense of place Corridor 3	40 Medium	40 Medium
Impact on sense of place Corridor 4	56 Medium	33 Medium
Impact on sense of place Corridor 7, 8. 5. 6	33 Medium	33 Medium
Property Values Corridors 1, 2, 5, 6	27 Low	27 Low

<b>Category 2 Impact</b>	<b>Significance</b>	
	<b>Before Mitigation</b>	<b>After Mitigation</b>
Property Values Corridors 8, 4	50 Medium	36 Medium
<b>Substation Sites</b>		
Substation Sites 1 and 3	24 Low	24 Low
Substation Site 4	20 Low	20 Low

The tables show that the impacts that are of medium to high significance even after mitigation are those that could occur during construction. These are the potential health impacts (HIV/Aids, STDs) as a result of the influx of construction workers. The health impacts can be such that they become a permanent condition, affecting not only the physical health but also potentially the quality of life, productivity, economic independence and psychosocial condition of the impacted persons and their dependents. This is also the reason why the potential health impacts as a result of bio-physical changes have a somewhat high rating of an impact of nearly medium significance after mitigation. Potential health impacts will not differ between the proposed corridors and the nomination of a preferred corridor is not based on the potential health impacts.

The impact of involuntary resettlement could be high and should be avoided. Should Corridor 1 be selected the likelihood of the servitude following the proposed road south of Lephalale (P138-1) is high. This will result in the involuntary settlement of people. On the other hand, this option will be in line with the Spatial Development Framework of the municipality and therefore not completely undesirable.

Corridor 8 could also lead to involuntary resettlement. It is likely that one household will have to be resettled and maybe more, should it be necessary to deviate from the existing lines as a result of technical challenges. It seems possible to avoid involuntary resettlement of households in Corridor 2, and this corridor is therefore preferred in this regard.

When considering the potential for development into the corridors, it seems a possibility that development will take place into the servitude for all corridors. Although the preference is that settlements are avoided to mitigate the potential health impacts as a result, all the corridors cross settlements. Corridor 1 crosses the lowest number of settlements and is therefore the preferred option in this regard, followed by Corridor 8 (with deviations). Corridor 2 shows rapid developments between villages closer to Lephahale, but it is more likely that these developments would occur along the main roads. The settlements in Corridors 2 and 8 should already be sensitive to the fact that development should not occur towards the servitude. Nevertheless, power lines close to settlements remain a health and safety concern and villages in this corridor also show a tendency to develop towards each other.

The other Category 2 impacts that could occur during both construction and operation are the potential psychosocial and physical health impacts as a result of changes that occur in land use activities to accommodate the construction and maintenance activities of the 2x400kV transmission power lines. However, the significance of these impacts is low and very similar for different land uses after mitigation - during construction and operation.

The selection of a preferred corridor should therefore not be based on the differences in the occurrence in crop and cattle farming activities between corridors because it is possible to manage these potential impacts and reduce the significance to a very low level. The corridor selection should also not be made on the basis of the game farming activities between corridors because the occurrence of game farms between the corridors are very similar for Corridors 1, 2 and 8. Should land use be regarded as the primary selection criteria, a detailed study should be done regarding the hectares of different land uses within the different corridors.

Rather, following involuntary resettlement and health and safety of people, the impact on sense of place should be regarded as a primary corridor selection criterion, which is closely linked to economic impacts. However, it should be kept in mind that it is difficult to determine the economic impacts of a power line on tourism activities because the indication is that people still visit nature reserves and game farms despite the presence of power lines. It is therefore more than the visual impact of the power line that could detract people from visiting a place or the mere lack of a power line that detract people from a place.

The impact on sense of place can be reversed after decommissioning, providing that rehabilitation is done to a satisfactory level (as opposed to involuntary resettlement, which is irreversible). The impact on sense of place should be considered in the context of the study area as a whole, as the impact on sense of place per farm portion will depend on a number of variables, such as the visual impact, the biodiversity impact, the

placement of the line in relation to dwellings and lodges, the activities on the land, the attachment of the landowner to the land, etc.

In light of the guiding principles of the Waterberg Biosphere, the compatibility of the transmission power lines with development plans and existing activities in the area, cultural landscape and settlements along corridors, Corridors 8 followed by Corridor 2 was preferred, as well as Corridors 5 or 6. Corridor 8 should follow the existing line without deviation, except for the alternative around Tafelkop and the deviation where it joins Corridor 2 for some distance. The transmission power lines should follow the existing lines in Corridor 7.

All **three substation sites** are relatively close to existing local roads. Due to its distance from existing settlements, Site 4 was preferred. It is also possible to avoid settlements and not affect their development should the lines come from Corridors 1, 2 and 8.

Transmission power line corridors not following the existing Matimba-Witkop transmission power lines and entering and exiting Sites 1 and 3 will potentially affect more settlements.

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## ACRONYMS

<b>CAA</b>	Civil Aviation Authority
<b>CDM</b>	Capricorn District Municipality
<b>EIA</b>	Environmental Impact Assessment
<b>EMF</b>	Electro and Magnetic Fields
<b>GPS</b>	Geographic Positioning System
<b>HIV</b>	Human Immuno-deficiency virus
<b>IDP</b>	Integrated Development Plan
<b>ICNIRP</b>	International Commission for Non-Ionising Radiation Protection
<b>LP</b>	Limpopo Province
<b>OHS</b>	Occupational Health and Safety
<b>SDF</b>	Spatial Development Framework
<b>SEIA</b>	Socio-economic Impact Assessment
<b>SEO</b>	Social Engagement Officer
<b>STD</b>	Sexually Transmitted Disease
<b>WDM</b>	Waterberg District Municipality

## 1. INTRODUCTION

The aim of the proposed Mokopane Integration Project is to disseminate the power generated at the new Medupi Power Station, thereby supporting the upsurge in demand from the platinum group metals in the Mokopane area, whilst at the same time improving the reliability of the electricity supply to the Polokwane area.

The proposed Mokopane Integration Project is required as a result of the fact that the existing transmission power lines in the area do not have sufficient capacity to distribute the additional 4 500MW of power that will be generated by the new Medupi Power Station, without compromising the transmission network's reliability. Eskom therefore investigated various options as means to optimise their transmission system and, in the instance of the Mokopane Integration Project; plan to construct new transmission power lines as an effective means to transmit electricity from the new Medupi Power Station to various substations within Limpopo Province (LP).

Currently the existing Witkop substation close to Polokwane is the only nodal point within the broader Polokwane area that supports the platinum group metals' load growth. The load forecast for this group indicated a load shift towards the Mokopane area, which cannot be supplied from the Witkop substation alone as a result of thermal, voltage stability and spatial constraints.

The proposed project includes the construction of a new substation in the Mokopane area as well as transmission power line infrastructure to integrate the new substation into the transmission network. The proposed Mokopane Integration Project will therefore include the following components:

- The construction and operation of a new 400/132kV substation near Mokopane;
- The integration of this substation into the transmission network by looping one of the existing Matimba-Witkop 400kV transmission power lines in and out the substation (i.e. two transmission power lines in parallel over a distance of approximately 10km);
- The construction and operation of a new 400kV transmission power line between the proposed Delta substation (near the Medupi Power Station) and the proposed Mokopane substation, covering a distance of approximately 150km;
- The construction and operation of a new 400kV transmission power line between the proposed Mokopane substation and the existing Witkop substation, covering a distance of approximately 60km;
- The construction and operation of a new 400kV transmission power line between the proposed Delta substation and the existing Witkop substation, covering a distance of approximately 200km; and

- The associated infrastructure, such as access roads, communication tower, etc., to integrate the new substation into the transmission grid and also to accommodate the new transmission power lines at the existing substations through, for example, the construction of new feeder bays at these substations.

Prior to implementing the project, an Environmental Impact Assessment (EIA) has to be conducted. As part of the overall EIA process that is conducted by Savannah Environmental, a Socio-economic Impact Assessment (SEIA) is conducted by MasterQ Research.

**Section 1.1** below gives a definition of a SEIA, followed by details of the summary of the findings of the Scoping Phase of the SEIA (**Section 1.2**). **Section 1.3** details the objectives of the study, whereas **Section 1.4** details the approach and methodology that were followed to meet these objectives. **Section 1.5** is concluded with a discussion of the limitations and assumptions of the study, and **Section 1.6** states the applicable legislation.

### 1.1. Definition of a SEIA

The definition of a Social Impact Assessment (SEIA) as defined by Vanclay (2002) gives an understanding of the backdrop against which this SEIA was conducted. According to this definition, a **social impact** is defined as follows:

*“The consequences to human populations of any public or private actions (these include policies, programmes, plans and/or projects) that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally live and cope as members of society. These impacts are felt at various levels, including individual level, family or household level, community, organisation or society level. Some social impacts are felt by the body as physical reality, while other social impacts are perceptual or emotional.”*

Vanclay (2002) defined a **social impact assessment** as follows:

*“SEIA is the process of analyzing (predicting, evaluating and reflecting) and managing the intended and unintended consequences on the human environment of planned interventions (policies, programmes, plans and projects) and any social change processes invoked by those interventions so as to bring about a more sustainable and equitable biophysical and human environment.”*

According to Vanclay (2002:3-10), one of the pitfalls of many SEIAs are that these studies refer to social change processes as social impacts. In this regard, Vanclay stated: *“social change processes are set in motion by project activities or policies”*, whereas

social impacts “refer to the impacts actually experienced by humans in either a corporeal (physical) or cognitive (perceptual) sense.”

Bearing this in mind, a **change process** can therefore be defined as change that takes place within the receiving environment as a result of an intervention. A potential **social impact** follows as a result of the change process occurring. However, a change process can only result in an impact once it is experienced as such by an individual/household/community/organisation on a physical and/or cognitive level.

Sadler, Verocai & Vanclay (2000) quote Vanclay (1999a): “Resettlement (relocation of a community), for example, is not a social impact, but causes social impacts such as anxiety and stress, uncertainty, disruption to daily living, potential change to family structure, as well as impacts such as homeliness. Similarly, in an (even rapidly) increasing (or decreasing) population, the presence of seasonal workers, and/or weekend residents, is not an impact per se, but it can cause other impacts, such as breakdown of the social fabric of the community, cause existing residents to experience changed perceptions about their community, and may stress the community physical infrastructure. Alcohol or other drug use are not social impacts, but are processes, which, depending on the context of their use, may cause social impacts such as family violence and economic hardship. All of the variables must be understood in their sociological context, and, of course, in their local cultural context. Homeliness, for example, does not mean the physical quality of the house, but the social relationships among the occupants of the building, and between them and the building. It is a subjective concept relating to the meaning and experience people attach to the place where they live and build their home.”

An **impact variable** points to probable social impacts as a result of the proposed project. For example, the presence of construction workers brings a demographic change to the affected community. Impact variables related to this change could be health related, economic and cultural. These variables could result in impacts on mental health, physical health, community cohesion, etc.

Based on Vanclay’s definition of a SEIA, an Economic Impact Assessment can be defined as the process of analysing the intended and unintended aspects of a project that might contribute to the creation (gain) and destruction (loss) of individual, community, regional or national economic resources.

## 1.2. Summary of Findings of the Scoping SEIA Study

The Impact Assessment Phase of the SEIA was informed by the Scoping Phase. The Corridors that were assessed in the Scoping Phase are depicted in **Figure 1.1**. The SEIA Scoping Report recommended that the final selection should be between Corridors 2 and 3, and 5 and 6. In light of mining activities along Corridor 3, which did not seem to be

avoidable, Corridor 2 was preferred. Mining activities in Corridor 2 could be avoided. However, in light of lack of detailed economic information along these two Corridors, it was recommended that both these Corridors be assessed in the EIA Phase of the project. It was recommended that Corridors 5 and 6 be studied in more detail to determine the difference in significance of impacts of land use and demographic processes.

No fatal flaws were identified, although Corridor 1 and the existing Matimba-Witkop lines going through the core areas of the biosphere were identified as a serious concern due to the fact that these reserves are protected environments of international conservation importance. Also, the potential cumulative impacts of 4 (four) transmission power lines going through an area which mainly seemed to consist of game farms, was identified as a concern.

- Loss of browsing for browsers (in the form of trees within the servitude) would be a significant land use change because the area consisted of a high number of game farms and nature reserves with game.
- Concerns regarding the potential negative financial impact as a result of a decline in tourism numbers due to the presence of power lines. Research results (MasterQ Research 2007) indicated that it was possible to carry on with game farm related activities in the presence of power lines, although the presence of lines did detract from the experience of visitors. It seemed as if the number of power lines, the placement of power lines and the size of farms were important considerations for placement of the lines in order to reduce the potential economic impact of the line on the affected properties. Eskom would want scientific proof that a reduction in tourist numbers was as a result of the lines and not other factors. Because this is not easy to prove, and it is not possible to avoid game farms altogether in this area, the final route alignment should aim to mitigate potential negative impacts of the lines on the game farms, e.g. going through areas where the visual impact would be best mitigated.
- Where mining does occur, it would be best to put lines as close to mining areas as possible (without compromising safety) to mitigate the potential impact on game farms (land use and economic).
- Situating a transmission line close to existing infrastructure, such as power lines and infrastructure related to industrial activities, consolidates visual impacts and therefore reduces the power line's impact on sense of place and the cultural landscape for visitors and local inhabitants, potentially mitigating negative economic impacts. However, this does not apply to properties with tourism activities which are already affected by power lines, as the potential negative economic impacts may be more significant due to the cumulative impacts of the lines.
- By following existing infrastructure, the potential impacts of access roads for maintenance will be reduced as existing roads can be used.

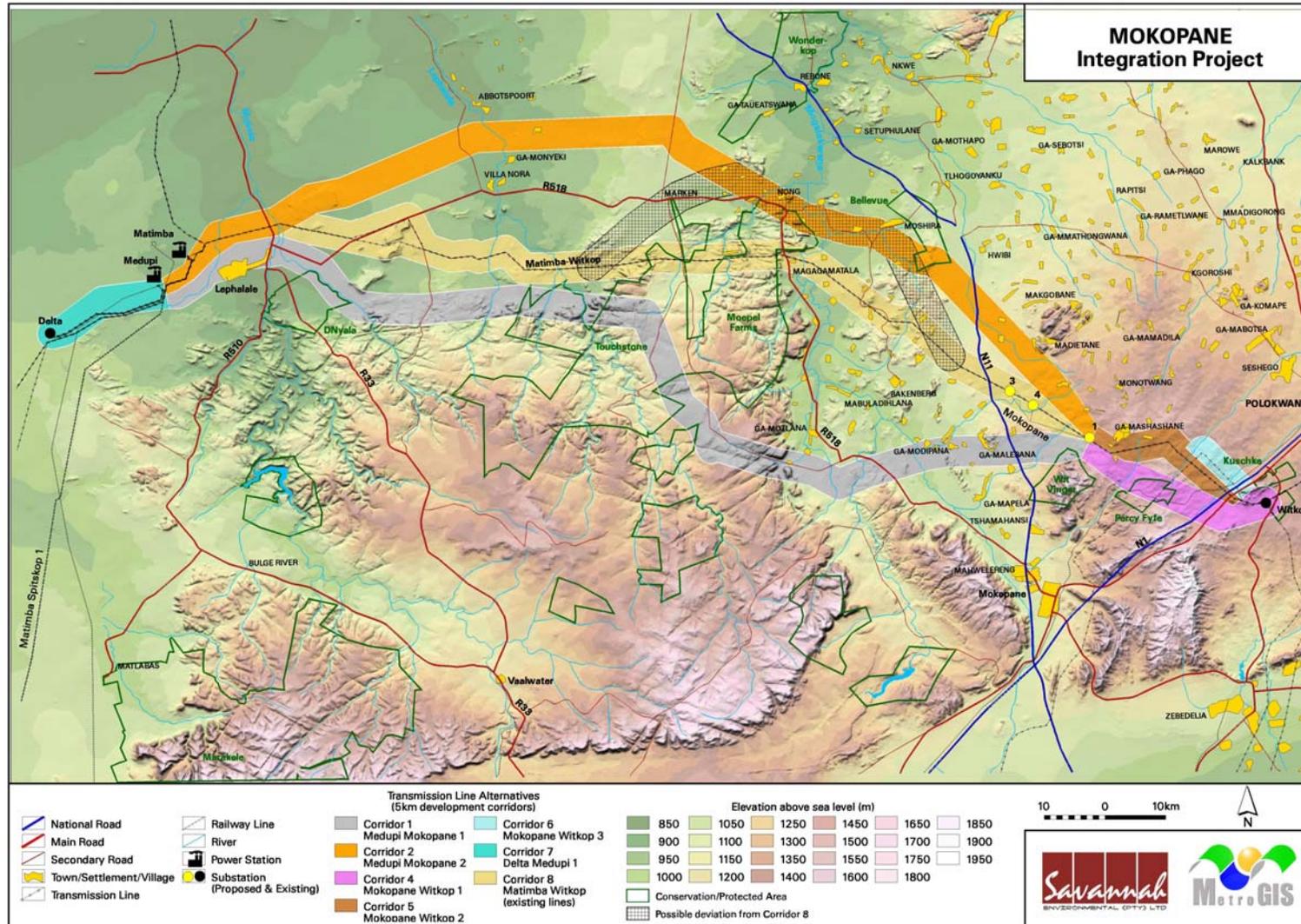
- Avoid, where possible, areas where there is no infrastructure (e.g. bushveld) to keep the sense of place intact, and attempt to avoid landing strips.
- Should game farms not be avoidable, the bigger game farms should rather be targeted in order to mitigate potential highly significant negative socio-economic impacts on smaller game farms.
- Eskom would only purchase a property if more than 50% of the property is affected by the power lines. This would not be the case in the study area as most of the properties are very extensive. Lines should therefore rather follow the borders of farms, and not go through the middle of a farm portions. The boundaries of farms should be followed to allow landowners to carry on with their game capturing activities and preserve the landscape of their farm. Following the boundaries of farms would also ensure that landowners could probably avoid these lines when they take guests out on trips.
- Should game farms be affected, lodges and hunting camps should be avoided. The homes of employees are likely to be in close vicinity of these lodges, and their homes will then also be avoided.
- Avoid, where possible, areas where game and bird watching takes place to reduce the impact on tourists' experience. These areas are likely to be watering holes and pans, and vulture restaurants.
- The input from the visual specialist is crucial to ensure that a Corridor with the least significant visual impact is selected.
- Landing strips and centre pivots should be avoided where possible.
- Tourism routes should be avoided where possible.
- It seems preferable to locate the line away from any towns or villages, as this could reduce the probability that the project would interfere with people's daily movement patterns or impact on their safety (more so during construction). However, in order to obtain a complete view of the social impacts derived from the project, it is also necessary to consider activities and structures that are associated with any transmission line. It is necessary to take into consideration the need for access roads for construction and maintenance activities. If a transmission line is remote from existing settlements, it is also likely to be far removed from existing infrastructure. The advantages described above may be neutralised by the need to construct longer access routes. For instance, longer access roads could increase the probability that:
  - The construction of these roads might necessitate the relocation of populations;
  - Access roads might interfere with people's daily movement patterns and impact on their safety;
  - Access roads might cut across private property, thereby increasing the number of landowners to be affected by construction and maintenance activities; and
  - Access roads could interfere with tourism and recreational activities.
- The disadvantages of locating the transmission line far from existing settlements would appear to be the fact that:

- It would reduce the probability that construction workers would provide a boost to the informal sector; and
- It would increase the distance that would have to be traversed by services infrastructure for construction camps. Hence, it would increase the burden on local authorities that are required to provide that infrastructure.

Based on the findings of all the specialists involved in the study, input from the public as well as a technical feasibility assessment, the Corridors were adapted. **Figure 2.1** illustrates the Corridors that were identified in the Scoping Phase to be assessed in the EIA Phase. Following results of the initial findings of the EIA study, a deviation for Corridor 8 was determined, with consideration of feedback from I&APs. The deviation is also depicted in **Figure 2.1**.



Figure 1.1: Corridors recommended for further study in the EIA Phase



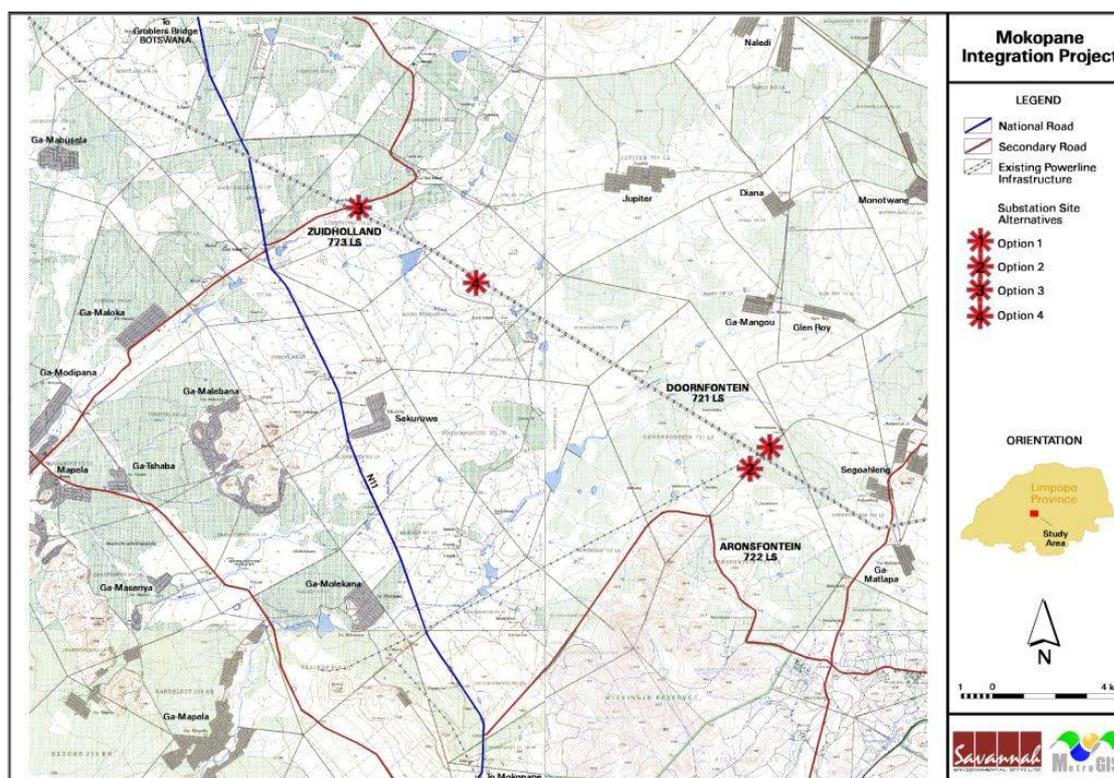
Source: MetroGis

The Scoping SEIA assessment of the substation sites was concluded as follows:

- To avoid potential negative impacts on health and safety and of displacement of people as a result of changes in current and future settlement patterns that may be affected by the proposed sites, the preferred site was identified as Site 4.
- To avoid potential negative impacts on agricultural activities as a result of the proposed transmission power line, the preferred sites were sites 3 and 4.
- It was not expected that the changes and potential impacts due to the influx of job seekers and workers would differ significantly between the alternative proposed sites, and a preferred site was therefore not selected considering demographic change processes.
- Considering the potential economic impact of the site, Site 4 was preferred.
- Considering institutional processes and the potential burden on the municipality, Site 3 was preferred because of its shorter distance from settlements and the N11, followed by sites 2 and 3.
- Considering the potential socio-cultural impacts, Site 3 is closest to settlements, followed by sites 1 and 2. Site 4 was the preferred site.

The Scoping SEIA identified Site 4 followed by Site 3 as the preferred sites. Based on the findings of all the specialists involved in the study, Site 2 was excluded from further studies. Error! Reference source not found. illustrates the substation sites that were assessed in the Scoping Phase.

**Figure 1.2: Substation Sites Assessed in the Scoping Phase**



Source: MetroGIS

### 1.3. Objectives of the SEIA Study

The overall objective of the SEIA is to recommend preferred Corridors and a preferred substation site for consideration by the competent authority and the project proponent in their decision-making process. To fulfil the objective, the SEIA will therefore aim to:

- Identify the manner in which the proposed project might affect the lives of people and communities within the receiving environment, negatively and/or positively by describing and assessing
  - the change processes to be expected in the affected social systems with the proposed project (baseline current and into the future);
  - the change processes to be expected in land use with the proposed project (baseline current and into the future); and
  - the change processes to be expected in the affected tourism activities and developments with the proposed project (baseline current into the future).

The above will be drawn up considering the following:

- Demographic processes (the number and composition of people – e.g. number of tourists);
- Economic processes (the way in which people make a living and the economic activities in society – e.g. income from tourists);
- Geographical processes (land use patterns – e.g. how land is developed for tourists);
- Empowerment, institutional and legal processes (the ability of people to be involved and influence decision making processes; and the role, efficiency and operation of governments and other organisations);
- Socio-cultural processes (the way in which humans behave, interact and relate to each other and their environment and the belief and value systems which guide these interactions – e.g. the way in which the landscape contribute to tourist expectations and experiences); and
- Considering all of these processes, potential social health impacts will also be assessed.

The aim will then be to:

- Rate the identified potential impacts to determine severity and significance;
- Identify measures that should be put in place to enhance positive impacts and to reduce the significance of negative impacts; and
- Give Environmental Management Plan (EMP) input.

The approach and methodology that were followed to fulfil the objectives are listed in **Section 1.4**, after **Table 0** that illustrates the difference between public participation, social impact assessment and the negotiation process.

**Table 1.1. Summary of Social Impact Assessment, the Public Participation and Negotiation Processes**

	<b>Social Impact Assessment</b>	<b>Public Participation Process</b>	<b>Servitude Negotiation Process</b>
<b>Practitioner</b>	MasterQ Research	Iliso Consulting	Eskom
<b>Definition</b>	<i>"The process of analyzing (predicting, evaluating and reflecting) and managing the intended and unintended consequences on the human environment of planned interventions (policies, programmes, plans and projects) and any social change processes invoked by those interventions so as to bring about a more sustainable and equitable biophysical and human environment."</i> (Vanclay, 2002).	The "...process leading to a joint effort by stakeholders, technical specialists, the authorities and the proponent who work together to produce better decisions than if they had acted independently" (Greyling, 1999). The process aims at improving "...communication between stakeholders – including the proponent – in the interest of facilitating better decision-making and/or sustainable development" (DEAT, 2002).	<i>"A process in which two or more entities come together to discuss common and conflicting interests in order to reach an agreement of mutual benefit."</i> <sup>1</sup>
<b>Objectives</b>	The overall business objective of the SIA is to assess the probable/potential social impacts on the human environment that can occur because of the design, construction, operation and decommissioning of a proposed project for consideration by the competent authority and the project proponent in their decision-making process. Part of the process is to identify and describe measures to mitigate against negative impacts and to enhance positive impacts.	The main objectives of the public participation process are to: <ul style="list-style-type: none"> <li>• Inform any and all identified I&amp;APs with sufficient information on a proposed project in such a way that the I&amp;APs are empowered to actively participate in the decision-making process; and</li> <li>• Create an entry point for I&amp;APs to raise their viewpoints (issues, comments and concerns) with regard to potential impacts, benefits and drawbacks related to a proposed project.</li> </ul>	Eskom's policy is to compensate the landowner for the strip of land that is required for a servitude. In order to do so, Eskom enters into a negotiation process with the affected landowner, with the aim to reach a servitude agreement.
<b>Timing &amp; Activities</b>	The SIA is undertaken in parallel to the overall EIA process and is normally subjected to the same timeframes as that of the EIA. The SIA consists of two distinct phases, namely a Scoping Phase and an Impact Assessment Phase. During the Scoping Phase, the baseline social context is determined, potential social impacts identified and, based on these results, develop the terms of reference/scope of work	The PP process spans across all the phases of the EIA process (scoping, EIA, etc.) and normally includes the following activities: <ul style="list-style-type: none"> <li>• Identify stakeholders;</li> <li>• Disseminating project information;</li> <li>• Managing incoming correspondence regarding the project and follow ups with</li> </ul>	The negotiation process is independent of the EIA process. Eskom has the right to engage with any landowner at any time, though they do so at risk if environmental authorisation has not been awarded.  The following process represents the steps that are followed in registering the servitude:

<sup>1</sup> [http://wps.pearsoned.co.uk/ema\\_uk\\_he\\_hollensen\\_globalmark\\_4/64/16425/4205002.cw/content/index.html#N](http://wps.pearsoned.co.uk/ema_uk_he_hollensen_globalmark_4/64/16425/4205002.cw/content/index.html#N)

<b>Social Impact Assessment</b>	<b>Public Participation Process</b>	<b>Servitude Negotiation Process</b>
<p>for the next phase. Depending on the scope of works, an SIA consist of varying activities, including:</p> <ul style="list-style-type: none"> <li>• Literature reviews and review of existing databases (secondary data sources);</li> <li>• Baseline profiling;</li> <li>• Site visit(s);</li> <li>• Social Research, including the use of surveys, interviews and/or focus group meeting discussions (primary data sources);</li> <li>• Data assessments of primary and secondary data sources</li> <li>• Data modelling;</li> <li>• Impact Assessment;</li> <li>• Identifying mitigation and/or enhancement measures;</li> <li>• Development of a Construction Social Management Plan.</li> </ul> <p>Qualitative and quantitative research methods are used to inform the SIA. Both these methods use a systematic approach to collect information. Quantitative methods focus on the “why” and quantitative methods focus on “how many.”</p> <p>A focus group is a qualitative social research method, which is one of the methods used when the social specialist wants to gain a depth understanding of specific issues, concerns and/or recommendations that I&amp;APs raised. To guide the session, a discussion guide is developed and followed. The results of these discussions are confidential to allow participants to freely participate, although a summary of issues and concerns might be made public. The results of the discussions are used in the assessment of social impacts with</p>	<p>other project team members;</p> <ul style="list-style-type: none"> <li>• Responding to stakeholder queries;</li> <li>• Organising and facilitating public events such as open days, public meetings, etc.;</li> <li>• Inform specialists about issues raised by stakeholders; and</li> <li>• Reporting on the process itself as well as the outcomes of the process.</li> </ul> <p>The public participation consultant also makes use of focus group discussions and these are usually aimed at gathering issues, concerns and opinions from a targeted group of I&amp;APs. Minutes, issues and concerns are reflected in the public participation report and specialists are informed about issues and concerns pertaining to their field of expertise. Specialists have to address these in their assessments.</p>	<ul style="list-style-type: none"> <li>• The route is usually finalised before negotiation starts.</li> <li>• Negotiators determine which properties are affected by the final route. The Survey-General is contacted to verify and confirm the legal landowners that will be affected.</li> <li>• The services of an external property valuator are procured. Properties are valued by doing a strip valuation for which price ranges for the different properties are submitted.</li> <li>• Maps are drafted for each property indicating the proposed route for the power line.</li> <li>• Eskom draws up an option to secure the servitude. The option indicates that the owner will accept that the line will cross his property, subject to conditions to be finalised in the negotiation of the servitude agreement. An option is valid for one year.</li> <li>• Eskom’s negotiators visit the landowners to start negotiations. The documentation, including the map of the affected area and the option are used to start negotiations.</li> <li>• Special conditions are negotiated and added to the standard option form. The landowner signs the option.</li> <li>• Once the servitude agreement has been signed, the terms and conditions thereof cannot be re-negotiated – landowners should thus ensure that they take cognisance of the project’s pre-construction, construction, and operational phases during the negotiation process.</li> </ul>

	<b>Social Impact Assessment</b>	<b>Public Participation Process</b>	<b>Servitude Negotiation Process</b>
	consideration of other data sources, e.g. structured interviews, literature. These inputs are not seen as representative of the whole population but are regarded as indicative of the range of sentiments/viewpoints/feelings etc. present in the population. Ideally, a group should not consist of more than 12 people – ordinarily the whole population, e.g. farmers in a corridor, has to be invited to ensure adequate numbers.		
<b>Applicable Legislation</b>	<p>Cognisance is taken of the following legal requirements and regulatory documents during the execution of an SIA:</p> <ul style="list-style-type: none"> <li>• Constitution of the Republic of South Africa, Act No. No. 108 of 1996;</li> <li>• Construction regulations under the Occupational Health and Safety Act;</li> <li>• Extension of Security of Tenure Act (Act 62 of 1997) (ESTA);</li> <li>• National Environmental Management Act (NEMA), No. 107 of 1998, as amended and Environment Conservation Act, No. 73 of 1989, as amended;</li> <li>• The Environmental Impact Assessment Regulations of 21 April 2006;</li> <li>• Relevant Labour Relations legislation;</li> <li>• Development plans in the relevant IDP/s and SDF/s; and</li> <li>• Applicable local by-laws.</li> </ul>	<p>The approach and methodology as well as the legal framework for the PPP are based on the principles embodied in the following legal framework:</p> <ul style="list-style-type: none"> <li>• The Constitution of the Republic of South Africa, Act No. 108 of 1996;</li> <li>• National Environmental Management Act (NEMA), Act No. 107 of 1998; and</li> <li>• Specific regulations, notably Regulation 28 and Chapter 6 of GN 385.</li> </ul>	<p>If the negotiation process reaches a deadlock, or if the parties failed or were unable to reach an agreement within 90 days after commencement of the negotiation process, Eskom may apply for the expropriation of the land required for the servitude, in accordance with the following legislation:</p> <ul style="list-style-type: none"> <li>• The Electricity Regulation Act (Act 4 of 2006), section 27(1);</li> <li>• The Expropriation Act (Act 63 of 1975), subsection 12.</li> </ul> <p>The landowner's rights are described in the following legislation:</p> <ul style="list-style-type: none"> <li>• Extension of Security of Tenure Act (Act 62 of 1997) (ESTA);</li> <li>• Constitution of South Africa; and</li> <li>• Prevention of Illegal Eviction from and Unlawful Occupation Of Land (Act 19 of 1998).</li> </ul>
<b>Deliverable(s)</b>	<ul style="list-style-type: none"> <li>• Social Scoping Report as part of the Environmental Scoping phase;</li> <li>• Social Impact Assessment Report as part of the Environmental Impact Assessment phase; and</li> <li>• In some cases, a Social Management Plan</li> </ul>	<ul style="list-style-type: none"> <li>• Public documentation, such as Background Information Documents, meeting minutes, an issues register, I&amp;AP database, etc; and</li> <li>• Public participation reports as part of the Scoping and EIA phases.</li> </ul>	<ul style="list-style-type: none"> <li>• Servitude agreement allowing Eskom to access that portion of land for routine and emergency maintenance procedures.</li> </ul>

	<b>Social Impact Assessment</b>	<b>Public Participation Process</b>	<b>Servitude Negotiation Process</b>
	as part of the Environmental Management Plan.		
<b>What is it NOT?</b>	It is not the official body with which to formally raise issues and concerns, i.e. it is an independent specialist study that is separate process from the public participation process, although the public participation can often be used as a vehicle to undertake public consultation.	It is not a marketing tool to 'sell' a particular project to the public or to gain public support for such a project.  It is not an assessment tool, i.e. comments and issues received by the public participation practitioner will not be addressed or assessed by them, but will be communicated to the relevant specialist.	It is not a specialist study and does not form part of the EIA.
<b>Your responsibilities</b>	<ul style="list-style-type: none"> <li>Attend and participate in social research activities when invited to do so.</li> <li>Although you are welcome to contact and/or submit written comments, questions, or concerns directly to the social specialist, formal submissions should also be directed to the public participation consultants to ensure that your comments are formally registered on a project's issues register. The public participation consultants will in turn direct your comments to the appropriate specialist for consideration in their assessment, at times requesting the specialist to formally respond to your comments.</li> <li>At times it might be necessary that you disclose sensitive information, e.g. future development plans, financial information, etc., so that such information can be considered during the assessment. Information gathered in the research process is analysed as part of the group of respondents' input and is usually not linked to your name in a report. Should you wish your name to be linked to information, you should indicate to the specialist how the information should be handled.</li> </ul>	<ul style="list-style-type: none"> <li>Respond to invitations to participate in projects that might affect you by registering on the project database. EIA processes are normally advertised in the local and/or regional press and in some cases, even in the national press;</li> <li>Complete and return project comment sheets if you are asked to do so;</li> <li>Attend public participation events that are held throughout an EIA process. Registered I&amp;APs normally receive personal invitations to such events;</li> <li>Feel free to contact the public participation consultants with your comments and queries; and</li> <li>Review and comment on reports that are placed in the public domain within the stipulated public review periods.</li> </ul>	<p>If you are involved in a servitude negotiation process:</p> <ul style="list-style-type: none"> <li>Familiarise yourself with your rights and responsibilities as outlined in the legislation mentioned above;</li> <li>Landowners have the right, within reason, to negotiate special conditions that, once accepted by both parties, will form part of the formal servitude agreement.</li> <li>Come prepared. The Eskom negotiator will explain the process, feel free to ask questions and make sure that you are clear about your role and responsibilities in the process.</li> <li>Special conditions cannot be re-negotiated once a formal agreement has been signed. Therefore, ensure that you stipulate your conditions clearly from the outset.</li> </ul>

#### 1.4. Approach and Methodology

Primary and secondary data sources were used to supplement data collected in the Scoping Phase in order to fulfil the objectives of the study.

**Primary data** collection methods involved a field trip by motor vehicle on the 2<sup>nd</sup> to the 3<sup>rd</sup> of October 2008, 1<sup>st</sup> to the 4<sup>th</sup> of December 2008 and again on 21, 22 and 28 July 2009. Data collected in the Scoping Phase during a field trip by motor vehicle on 10 and 12 June 2008, and a fly over on 11 June 2008 was also considered.

The site visits included aspects such as:

- Interviews with landowners around economic issues;
- Visual observations of the route alternatives including structures, land use and current economic activities; and
- Examination of updated project description details to determine possible social and economic impacts.

Supplementary to the primary data, **secondary data** collection methods included the perusal of the following documentation:

- Obtaining the most recent demographic indicators from StatsSA;
- Obtaining economic related information from information gathered for the social components on the SEIA;
- Perusing the various locality maps generated through the project process;
- Sourcing of South African literature on Transmission power lines and their impact specifically on farming and hunting/conservation;
- A desktop aerial study of the affected area through the use of *Google Earth (2007)*;
- Issues, comments and questionnaire sheets submitted to the Public Participation Process (PPP) consultant.

Information that was relevant to the project was identified and assessed from these sources within the context of the pre-construction, construction, operation and maintenance, and decommissioning phases of the proposed Mokopane Integration Project. The **objective** of the desk-top research was to guide the assessment and support findings as well as fill information gaps.

A detailed description of the primary data collection methods and their objectives are discussed in the remainder of this section.

A detailed description of the primary data collection methods and their objectives are discussed in detail in the rest of this section.

## **Data Collection**

### **Focus group discussions**

The aim of these workshops were to invite landowners to select a preferred Corridor for the power lines by determining what socio-economic principles could not be sacrificed and by considering the area as a whole as opposed to considering individual farms in isolation (**Appendix A**). The objective for the social specialist was to gain a depth understanding of the reasons for issues and concerns stakeholders had and to understand the main drivers for corridor selection – e.g. preservation of sense of place, history with the land and land use impacts. The findings of these focus group discussions informed the assessment of impacts (**Section 3**). Two focus group discussions were held and attendance registers are listed in **Section 6**. A third meeting did not take place because attendees who confirmed attendance did not arrive for the discussion. Impacted landowners (those impacted by the three proposed 5km corridors) were sent a written invitation by email or fax and telephonic discussions also took place. The secretaries of the Farmer’s Associations assisted with organising these groups. In the letters of invitation addressed to landowners, they were invited to request the social specialist to visit their farms. These requests were made on the days of the meetings only and were not arranged prior to the meetings. The social specialist did attempt to meet these requests within the timeframes available and with challenges of weak/no cell phone reception in rural areas.

On demand of invitees, the focus group meeting at Marken was postponed with a week to co-incide with the public participation meeting organised by the public participation consultant. Both MasterQ Research’s social specialists were not available at that time and, rather than miss the opportunity to meet with these landowners, the decision was made to send Raoul de Villiers (M.Com), and Jacobus Bron (M.Com) to attend and manage these meetings. Mr Raoul de Villiers is MasterQ Research’s economist and Mr Jacobus Bron assists MasterQ Research with statistical analyses and fieldwork. Mr Jacobus Bron attended the meeting in Lephalale to prepare for the meeting in Marken.

<b>Summary Report</b>	
Focus group discussions with farmers	Those who attended the meetings were willing to assist the team and partook in a constructive manner. The specialists were often initially negatively regarded as Eskom representatives. One group did not take place because I&APs who confirmed attendance did not arrive.

A focus group discussion was held with people in the Ga-Monare area in 2008 and people mostly attended because they were expecting jobs from the project. Focus group discussions organised for the Ga-Hlako, Diana, Ga-Mabusela, Ga-Maboela areas were not attended and Rapid Rural Appraisal was conducted in these areas instead, which included at least one interview with a local person in each area. The focus groups were organised with the help of municipalities and councillors.

The objectives were to:

- To understand the knowledge of the community about the project;
- To determine the communities involvement in projects;
- To understand the communities' possible reaction to an influx of job seekers/contractors;
- To understand the challenges/pressures in terms of HIV/AIDS, alcohol and drug abuse, teenage pregnancies etc.;
- To understand the current living conditions in the communities;
- To determine the communities source of income;
- To understand the use of municipal services in the area;
- To understand the use of land in the area;
- To understand movement patterns in the area;
- To understand the communities expectations of the project;
- To understand the concerns of the community with regards to the projects and how they think the identified concerns should be dealt with.

Summary Report	
Focus group discussions/ Interviews in villages	Only one of the five planned focus group discussions, which was organised by the councillors/municipalities took place. The majority of those who attended the focus group discussion that took place, attended because of job expectations.

### One-on-one interviews

In depth discussions were held with six landowners/farm managers, which were combined with trips to their farms for five of them. Two (2) farms in Corridor 2 was visited, one (1) in Corridor 8 and one (1) in Corridor 1 where access to a second farm was given. The owner of one (1) farm affected by both Corridors 8 and 2 were interviewed and the farm visited.

Interviews and farm visits were conducted with Rone Hennop (Gouda Boerdery), Johan de Kok (Manager, Shelanti Game Ranch), Wentzel van Wyk (Manager, Mowana Game Farm), and an estate agent in Lephalale (no farm visit) during the fieldtrip in October

2008. In 2009, visits to two farms were organised by Werner Lewies (owner of Wynberg and Durban) and Jaco Swanepoel (Environmental Manager, Sweswebe Wildlife Estate). In 2010, Mr J.J. Pretorius, representative of the Commiphora Huiseienaarsvereniging, was interviewed and the farm visited.

Raoul de Villiers interviewed Mr Kallie Erasmus from EBB Consulting. Although Mr. M.J. Nel (Corridor 1) requested a farm visit, this visit was not conducted due to problems with cell phone connectivity and timeframes. Mr Flip Booyse at Lephalale Municipality was also interviewed in 2009.

### Comparative Post-hoc Evaluation

*Post-hoc Study, Social Impacts in Constructing High Voltage Transmission Power lines, MasterQ Research, March 2007 (PHS MQR 2007).*

A post-hoc analysis of the social impacts of the construction of high voltage transmission power lines was conducted in response to the need for an evidence based approach in conducting SEIAs for high voltage lines. The analysis primarily investigated the social impacts recorded in one specific project. The case study of the construction of the Matimba-Witkop No. 2 400kV transmission line was selected for its location, the diversity of social environments surrounding the line and the fact that two different main contractors were used during construction.

The **main research objective** was to evaluate the social impacts anticipated for the construction of Matimba-Witkop No. 2 400kV Transmission Power line SEIA against the actual social impacts experienced and supplement the findings with the actual social changes that occurred during the construction of another line, the Beta-Delphi 400kV transmission power line.

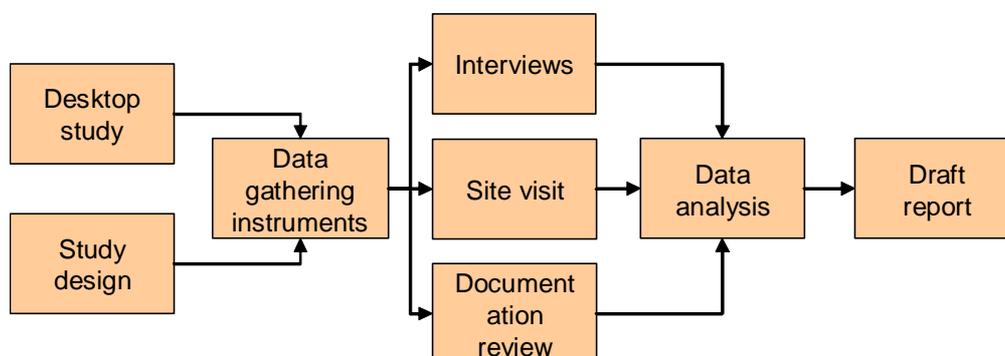
To this end, the **primary research objectives** of this study were to:

- Describe landowners' experience of the negotiation process;
- Identify the actual social impacts experienced during construction;
- Describe the nature, extent and severity of the social impacts;
- Identify mitigation measures that were effectively implemented; and
- Identify ways to improve the SEIA process.

The **secondary research objectives**, which gave context to the primary objectives, were

- To understand the EIA process;
- To understand the SEIA process in the context of the EIA process;
- To understand the negotiation process;
- To understand the construction process; and
- To understand social change processes and social impacts.

The Post-hoc study was implemented according to the diagram below:



### Field report

In general, all parties involved were willing to participate, although it was decided not to contact the landowners again for information in addition to their interviews as participant fatigue was evident.

#### Survey Research

*Draft Socio-economic Survey Report June 2007 (SES MOR 2007)*

A survey to assess the potential social and economic impacts of high voltage transmission power lines on farms was conducted. The survey was not conducted amongst the Interested and Affected Parties (I&APs) of this project, but was conducted amongst I&APs in the area affected by other Eskom projects: the Mmamabula-Delta 4x400kV Transmission power lines, The Masa-Selomo 6x765kV Transmission power lines, the 3x40kV Medupi-Dinaledi/Marang Transmission power lines. An attempt was made to supplement the information with information from I&APs of this project, the Mokopane Integration Project. A two page questionnaire was e-mailed or faxed to eight landowners who indicated they were willing to partake in a survey in a questionnaire distributed by the Public participation Consultant for the Mokopane Integration Project. Only three questionnaires were returned.

The main **objective** of this research was to assess the potential socio-economic impact of power lines as a result of a change in land use processes. The reason for the research was to assist with the assessment of potential change processes and associated impacts from a socio-economic perspective. To answer the main objective, the primary objectives were to understand the

- Impacts of power lines in terms of:
  - perceived lifestyle impact;
  - perceived financial impact;
  - perceived impact of the alignment of power lines.
- Tourism Impacts:
  - visitor profile;

- income profile;
- growth potential;
- Financial impacts on cattle and crop farming;
- Potential economic impacts on investments and future plans; and
- Potential impacts on employees.

The research was quantitative in nature. Structured telephonic interviews were conducted and took approximately 10 minutes to complete. The results were captured and assessed in SPSS, a statistical programme.

A list of approximately 103 private landowners with farms (including game farms) who registered as I&AP's for the Medupi-Dinaledi, Medupi-Marang, and Masa (Delta)-Selomo (Epsilon) projects by December 2006 made up the population. Of the 103, a total of 50 landowners partook in the study. The sample was not a representative sample of the landowners in the area as it excluded those who did not register as I&AP's and those who did not provide their telephone contact details. Relevant results are discussed in **Section 3**.

Field report
<p>Three (3) of the eight (8) landowners who were sent a questionnaire, because they indicated that they were willing to complete a questionnaire, returned their questionnaires. The weak response rate was most probably because of the confidentiality of the answers to questions, which focused on economic information. I&amp;APs who partook in the focus group discussions were not sent these questionnaires so as not to further fatigue these participants.</p>

### 1.5. Impact Assessment

All the information collected from primary and secondary sources was assessed and analysed to better understand and describe the potential social impacts. Impacts were then assessed in more detail, as illustrated in **Table 1.2**. A final significance rating for each impact before and after mitigation was then given. This information was used to select and defend final proposed route Corridor(s).

The significance weighting (S) was formulated by calculating the Consequence (C) by adding the sum of the numbers assigned to extent (E), duration (D), severity/magnitude (M) and Reversibility (R) and multiplying this sum by the probability (P) of the impact hence  $S = (E + D + M + R)P$ . The impact was then assessed in an impact assessment table.

**Table 1.2: Definitions of Impact Assessment Categories**

CATEGORY	DESCRIPTION OF DEFINITION
<b>Nature</b>	A brief written statement of the social aspect being impacted upon by a particular action or activity.
<b>Extent (Scale)</b>	The area over which the impact will be expressed. Rated from 1 to 5. 1 Meaning a localised impact and 5 meaning national or international in extent.
<b>Duration</b>	<p>Rated from 1 to 5 and indicates what the lifetime of the impact will be. Possible values are:</p> <ul style="list-style-type: none"> <li>• 1-Very Short, 0 – 1 year;</li> <li>• 2-Short, 2 – 5 years;</li> <li>• 3-Medium, 5 – 15 years;</li> <li>• 4-Long Term, &lt;15 years;</li> <li>• 5-Permanent.</li> </ul>
<b>Magnitude</b>	<p>Magnitude is quantified on a scale of 1 to 10 indicating:</p> <ul style="list-style-type: none"> <li>• 1-Minor, will not impact on processes;</li> <li>• 2-Low, Slight impact on processes;</li> <li>• 3-Moderate, processes continue in a modified way;</li> <li>• 4-High, processes may cease temporarily;</li> <li>• 5-Very High, processes may cease permanently.</li> </ul>
<b>Probability</b>	<p>Measured from 1 to 5, indicating:</p> <ul style="list-style-type: none"> <li>• 1-Very Improbable;</li> <li>• 2-Improbable;</li> <li>• 3-Probable</li> <li>• 4-Highly probable</li> <li>• 5-Definite</li> </ul>
<b>Reversibility</b>	<p>Measure from 1 to 5 indicating:</p> <ul style="list-style-type: none"> <li>• 1-Reversible (Regenerates naturally)</li> <li>• 2</li> <li>• 3-Recoverable (Needs human input)</li> <li>• 4</li> <li>• 5-Irreversible</li> </ul>
<b>Significance</b>	The significance of an impact is determined through a synthesis of

CATEGORY	DESCRIPTION OF DEFINITION
	<p>all of the above aspects. It is characterised as low, medium and high.</p> <p>It is calculated as follows:</p> <p>Significance=(Reversibility + Extent + Duration + Magnitude) * Probability</p> <p>The calculation is interpreted as follows:</p> <ul style="list-style-type: none"> <li>• &lt;30-Low</li> <li>• 30-60-Medium</li> <li>• &gt;60-High</li> </ul>
<b>Status</b>	<p>Denotes the perceived effect of the impact on the affected area.</p> <ul style="list-style-type: none"> <li>• Positive refers to a beneficial impact.</li> <li>• Negative refers to a deleterious or adverse impact.</li> <li>• Neutral means the impact is neither beneficial nor adverse.</li> </ul>

### 1.6. Limitations and Assumptions

- This study was done with the information available to the specialist at the time of executing the study, within the available time frames and budget. The sources consulted are not exhaustive, and additional information which might strengthen arguments, contradict information in this report and/or identify additional information might exist. The specialists did endeavour to take an evidence-based approach in the compilation of this report and did not intentionally exclude scientific information relevant to the assessment.
- Due to the number of properties along all Corridors, conclusions presented in this report are derived from a group of interview sessions, field trips, and supported by documentation, results of previous research and secondary sources.
- A lack of finalised project details from the project proponent means that some of the actual project economic projections may be higher or lower than estimated in this report and that the assessment could not be completed with a high level of confidence in results. In the meantime, an economic assessment was commissioned by Eskom but the findings of this assessment were not available at the time of writing this report. The economic findings in this report therefore have to be considered in conjunction with the findings of the economic study, once it is available.
- It was assumed that the motivation for, planning and feasibility study of the project were done with integrity, and that information provided to date by the project proponent, the independent environmental assessment practitioner and the public participation consultant was accurate.

- It was assumed that the decommissioning phase would be similar to the construction phase, and the decommissioning phase was therefore not assessed separately.

### **1.7. Applicable Legislation**

- The Environmental Impact Regulations of 21 April 2006;
- Construction Regulations under the Health and Safety Act (OHS Act);
- Electricity Regulation Act, No 4 of 2006, section 27;
- Extension of Security of Tenure Act (Act 62 of 1997) (ESTA);
- White paper on social development;
- Relevant Labour Relations legislation;
- Prevention of Illegal Eviction from and Unlawful Occupation Of Land (Act 19 of 1998);
- Development Facilitation Act (Act 67 of 1995);
- Applicable local by-laws.
- Constitution of the Republic of South Africa, Act No. 108 of 1996. Key rights in the Bill that have a bearing on social issues include (Barbour 2006):
  - Life: Everyone has the right to life;
  - Human Dignity: Everyone has inherent dignity and the right to have their dignity respected and protected;
  - Equality: Everyone is equal before the law and has the right to equal protection and benefit from the law; and
  - Freedom of religion, belief and opinion: Everyone has the right of freedom of conscience, religion, thought, belief and opinion.
- Environment: Everyone has the right to an environment that is not harmful to their health or well being, and to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development;
- Property: No person may be deprived of property except in terms of the law of general application, and no law may permit arbitrary deprivation of property. Property may be expropriated only in terms of the law of general application for a public purpose or in the public interest. The public interest includes South Africa's commitment to land reform and to reforms to bring about equitable access to all South Africa's natural resources. Property is not limited to land;
- Health care, food, water and social security: Everyone has the right to have access to health care services, including reproductive health care, sufficient food

and water and social security, including, if they are unable to support themselves and their dependents, appropriate social assistance;

- Language and culture: Everyone has the right to use the language and participate in the cultural life of their choice, but no one exercising these rights may do so in a manner inconsistent with any provision of the Bill of Rights;
- Cultural, religious and linguistic communities: Persons belonging to cultural, religious or linguistic communities may not be denied the right, with other members of the that community to enjoy their culture, practice their religion and use their language, and to form, join and maintain cultural, religious and linguistic associations and other organs of civil society. These rights must be exercised in a manner that is consistent with any provision in the Bill of Rights;
- Access to information: Everyone has the right of access to any information held by the state and any information that is held by another person and that is required for the exercise or protection of any rights;
- Just administrative action: Everyone has the right to administrative action that is lawful, reasonable and procedurally fair. Everyone whose rights have been adversely affected by administrative action has the right to be given written reasons;
- National Environmental Management Act (NEMA), No. 107 of 1998, as amended and Environment Conservation Act, No. 73 of 1989, as amended:
  - 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; and
  - Development must be socially, environmentally and economically sustainable.
- Sustainable development requires the consideration of all relevant factors including the following:
  - The disturbance of landscapes and sites that constitute the nations cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;
  - The use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;
  - The development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;
  - A risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and

- Negative impacts on the environment and on peoples' environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.
- Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option;
- Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons;
- Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination;
  - Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle;
  - The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured;
  - Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge;
  - Community well being and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means;
  - The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment;
  - The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected;
  - Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law;
  - There must be intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment;
  - The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the peoples' common heritage;

- The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, those responsible for harming the environment must pay for environmental damage or adverse health effects;
- The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.

The following section describes the project and study area and then proceeds to address the objectives of the SEIA.

## 2. PROJECT DESCRIPTION

The negotiation and construction process are relevant to a number of impacts discussed in **Section 3**: health and safety impacts, impacts as a result of cultural changes, and potential impacts as a result of loss of land and the negotiation process. Instead of repeating this information for every applicable impact assessed in **Section 3** the information is summarised in this section. The negotiation and construction processes form part of the process of establishing a power line, which usually consists of the following phases:

- Planning;
- EIA;
- Negotiation (discussed in the Scoping SEIA and summarised again in **Appendix B**);
- Construction (**Section 2.2**);
- Maintenance;
- Decommissioning.

The baseline description of the study area as discussed in the Scoping SEIA is repeated in relevant tables in **Section 3**. The proposed Transmission power line Corridors are located within the Waterberg (WDM) and Capricorn District Municipality (CDM). The affected local municipalities in the WDM are Lephalale and Mogalakwena Local Municipal areas. The CDM consists of five local municipalities, including the Aganang, Blouberg and Polokwane Local Municipalities.

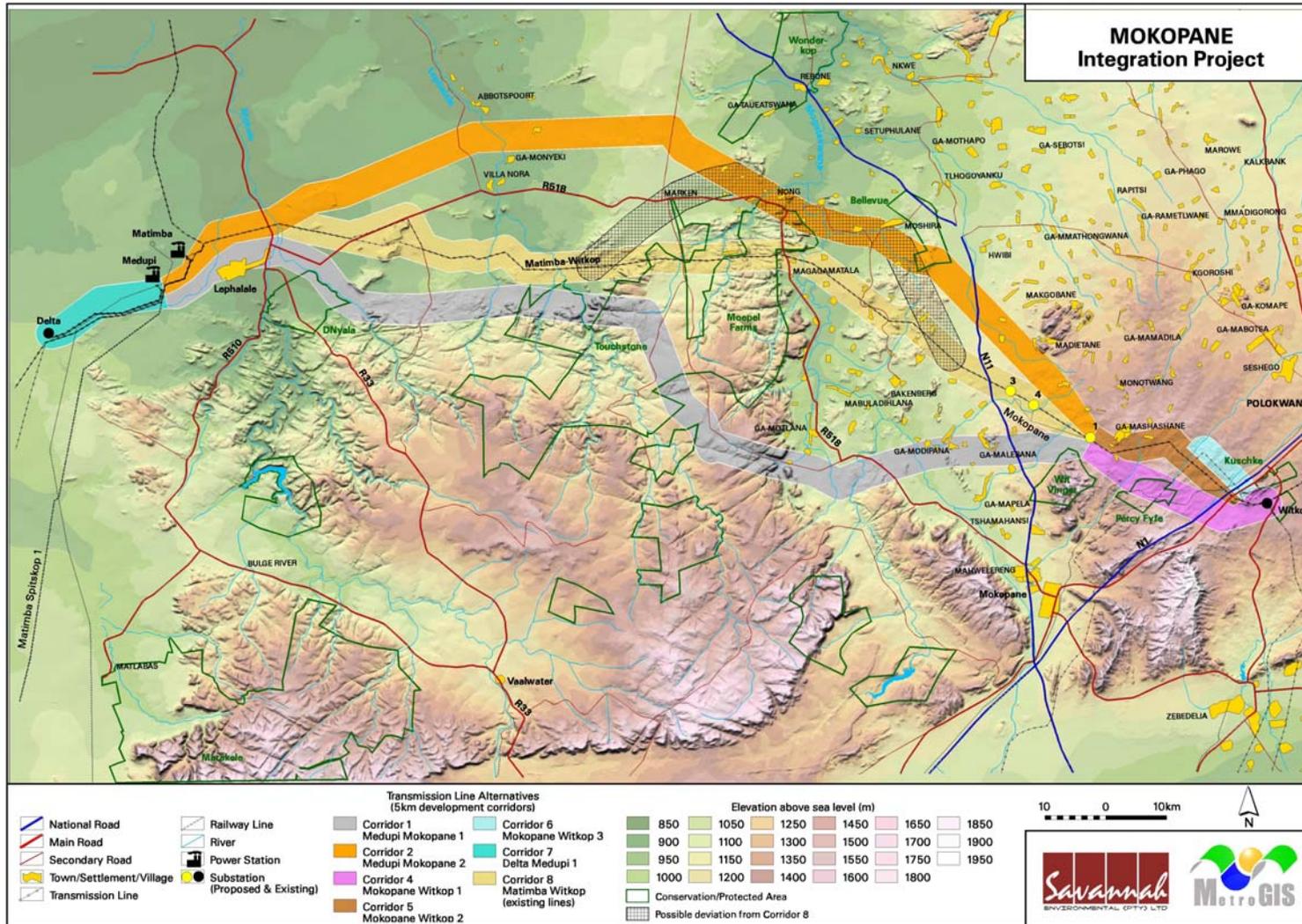
### 2.1. Planning and EIA

For detailed information regarding the Planning and EIA Phases, refer to the main EIA Report (Savannah Environmental). To summarise:

#### **Transmission Power Line Corridors**

As previously mentioned, in total there are seven (7) potential transmission power line Corridors, of which one (1) has been identified between Masa (Delta) substation and Medupi Power Station, three (3) potential alternative Corridors have been identified between the Medupi Power Station and the proposed Mokopane substation, with a further three (3) alternative Corridors between the proposed Mokopane substation and the existing Witkop substation (refer to **Figure 2.1**). One Corridor is required to be nominated between Medupi and the proposed Mokopane substations, and one between the proposed Mokopane and Witkop substations for the construction of the proposed two 400kV transmission power lines.

Figure 2.1: EIA Transmission Power Line and Substation Site Alternatives



Source: MetroGIS

### **Substation Sites**

All three of the alternative substation sites are located in the Mokopane area and are located on State-owned properties. Refer to Figure 2.1: EIA Transmission Power Line and Substation Site Alternatives for an overview of the proposed site alternatives.

**Option 1** is located on the southern border of the farm Doornfontein 721LS and on the northern border of the farm Aronsfontein 772LS, to the north of the existing Matimba-Witkop Transmission power lines.

**Option 3** is located on the farm Zuid Holland 773LR, along the existing Matimba-Witkop Transmission power lines.

**Option 4** is located on the farm Noord Braband 774LR, along the existing Matimba-Witkop Transmission power lines

## 2.2. Construction Process - Employment

Local labour (as individuals or contractors) could represent anything between 10% and 50% of the labour force during construction (PHA MQR, 2007). Where local communities or landowners demand local labour to be used, a bigger proportion of the labour force could represent local labour. However, due to the highly skilled nature of the work, problems with the quality of work could develop should certain parts of the construction process be sub-contracted to local labour. Also, the job opportunities are temporary. It could happen that those who delivered satisfactory work are offered permanent positions, but for the majority the opportunities will be short-term.

It is likely that there are no local contractors in the study area able to construct the 400kV Transmission Power lines or substation. Very specific skill and knowledge are required to construct this infrastructure, and Eskom appoints specialised contractors, and even international companies. Because of the skills levels required for the actual construction of the line and substation, local labourers are usually engaged in work that does not require a substantial amount of skill. This includes bush clearance, erection of gates and acting as security guards. However, it is possible to use 50% local labour according to the results of the Post-hoc study (PHA MQR, 2007).

In the construction of the Matimba-Witkop No.2 400kV line, local labour were said to have represented between 10 – 30% of the workforce. Based on contractors' estimation of the total number of workers employed (600), local labour represented between 60 – 180 job opportunities along the length of the line. This largely corresponds with the situation recorded at the first section of 214km of the Beta-Delphi 400kV line constructed between Dealesville and Aliwal North, where approximately 25% (or 100 workers) of the job opportunities were filled by local labour. According to experts however, in other construction projects these percentages might be less.

Information regarding the substation site team was not provided by Eskom. The following teams are active for the construction of power lines (MQR PHA 2007):

- Bush clearance team. Size: 10 – 20 depending on local conditions (e.g. less people would be needed in the Karoo than in the bushveld). This team could also be involved in erecting gates. If a separate team put up gates, a team size of around 5 people could be expected. The potential for recruiting local labour for these teams are extensive. For Matimba—Witkop No. 2 400kV, approximately 36 (details about local labour were unavailable) people were involved in bush clearance, while at Beta-Delphi 400kV eight (no local labour) people were involved.
- Foundations team. Size: 35 – 45 per team. More than one team could be used to accelerate construction. Although there is an opportunity for local labour to be recruited in this team, it is limited (up to 70% of a team at Beta-Delphi represented local labour, details about local labour used for Matimba-Witkop was unavailable).

- Assembly team. Size: 10 – 25 people per team. More than one team could be used to accelerate construction. Limited potential for recruitment of local labour (up to 25% of a team at Beta-Delphi represented local labour, details about local labour used for Matimba-Witkop was unavailable).
- Erection team. Size: 15 – 20 people per team. No potential for recruitment of local labour (no local labour was used at Beta-Delphi in this team, details about local labour used for Matimba-Witkop was unavailable).
- Stringing team. Size 120 people. Limited potential for recruiting local labour (25% local labour was used at Beta-Delphi in this team, details about local labour used for Matimba-Witkop was unavailable).
- Rehabilitation team: Size 5 – 15 depending on site conditions. These teams could be involved in different activities. Limited potential for recruiting local labour.

When construction is accelerated more workers could be expected on site. Acceleration is done by dividing the line into more than one section and appointing a contractor per section or by incorporating additional teams in the construction process. An estimated maximum of 200-250 workers will be engaged at any one time in the construction activities on the route for one line. However, construction activities are spread out across large areas of the route and continuously move along the route. The construction activity that requires the most labourers is stringing with up to 120 people engaged in the activity.

Although the average number of construction workers per construction village is around 100, up to 250 workers could stay at the village. In a rural area, this could represent a significant growth in population for the period of construction.

Information regarding the workforce during maintenance could not be estimated. The maintenance team has to clear vegetation and has to inspect the lines and conductors and the substation. Bush clearance opportunities for local people might be limited because the landowner or Eskom might want to do it. It is highly unlikely that a permanent maintenance position by a local person will be secured.

In terms of legal requirements, legislation requires contractors to comply inter alia with the OHS Act, Unemployment Insurance Fund (UIF) and employment equity principles. Capacity building of local individuals to build required skills and ensuring compliance with labour legislation have time and cost implications for the contractor, which should be considered when costing is done.

Depending on the project plan for the other transmission power lines, substations and power station in the area, it could be that the same people are used for these projects, or that one procurement procedure is followed. If lines are built at different times, but the same people are used, the length of employment and related positive impacts will be

prolonged. If different people are used, whether the lines are built simultaneously or separately, more people will benefit – but in the short term.

### **3. SOCIAL IMPACT ASSESSMENT**

In this section, potential social impacts are listed and then assessed.

#### **3.1. Identified Potential Impacts**

Many issues that were submitted to the public participation consultant were relevant to the social context and included issues around tourism. The issues that were submitted are listed in **Tables 3.1 and 3.2**. In terms of issues listed in **Table 3.2**, note that the purpose of these meetings was to identify a preferred Corridor from the stakeholders' perspective taking into account the area as a whole, as opposed to individual farms, and to gain depth understanding of the reasons for concerns. As such it was not part of the public participation process but part of the Socio-economic Impact Assessment process. The main purpose was not to raise issues and concerns but to, as groups, agree to a preferred Corridor. The majority of the stakeholders preferred Corridor 8 in order to consolidate the potential impacts by putting the proposed lines along existing lines instead of affecting a greenfield area and in the process "cutting up" the rest of the area. As per **Table 1.1**, the focus group method applied by the SIA specialist, is a qualitative social research method and is one of the methods used when the social specialist wants to gain a depth understanding of specific issues, concerns and/or recommendations that I&APs raised. To guide the session, a discussion guide is developed and followed. The results of these discussions are confidential to allow participants to freely participate, although a summary of issues and concerns might be made public. The results of the discussions are used in the assessment of social impacts with consideration of other data sources, e.g. structured interviews, literature. These inputs are not seen as representative of the whole population but are regarded as indicative of the range of sentiments/viewpoints/feelings etc. present in the population (also refer to Table 1.1).

**Table 3.1: List of Social Issues raised during Public Participation Process**

Name / Organisation	Issues Raised	Response
<p>Mr. C. Thompson (Iganu Game Ranch, attended Marken Public Meeting 19/06/2008)</p> <p>Mr. P. Visser (Mahakala's Game Ranch, fax received 07/07/2008)</p> <p>Mr. C. Brown (Mahakala's Game Ranch, email received 07/07/2008)</p> <p>Ms. FH van der Heever (landowner, Potgietusrus DLU Focus Group Meeting 06/08/2008)</p> <p>Mr. G. Van Rooyen (landowner, Potgietusrus DLU Focus Group Meeting 06/08/2008)</p> <p>Ms. I. Snyman (landowner, email received 03/09/2008)</p> <p>Mr. Werner Lewies (Ellisras DLU - landowner, Lephale Focus Group Meeting 16/02/2009)</p> <p>Mr. R. van Tonder (Marken – landowner, Marken Farmers Hall)</p>	<p>What compensation will be available to the affected parties?</p>	<p>External valuations are done on their farms, so that a total understanding of their farms and businesses can be obtained. Compensation is based on current market-related prices and will be negotiated with each affected landowner on business principles.</p>
<p>Mr Werner Lewies (Ellisras DLU - landowner, Lephale Focus Group Meeting 16/02/2009)</p> <p>Mr. W. Nel (landowner, Lephale Focus Group Meeting 16/02/2009)</p>	<p>International tourists do not want to see Tx P/Is when they visit this area, Eskom doesn't understand this and doesn't go back to evaluate the long term effects of the Tx P/I on their land. Eskom keeps building new Tx P/Is and have yet to deal with the old issues.</p>	<p>The Social Impact Assessment will assess these issues in the EIA Phase.</p>
<p>Mr. D. Strydom (Mama Tau, Lephale Focus Group Meeting 16/02/2009)</p>	<p>If there is infrastructure on the land that cannot be moved i.e. houses and</p>	<p>Once the EIA has been approved by the DEAT and authorisation is received, Eskom will</p>

Name / Organisation	Issues Raised	Response
	lodges, how will that be dealt with?	conduct one last fly-over of the chosen route and mark off on the GPS infrastructure on the land. The information gathered and mapped from this will be brought with to the farm owner during negotiations.
<b>2. Social and Safety Issues</b>		
Mr. C. Thompson (Iganu Game Ranch, attended Marken Public Meeting 19/06/2008)	Displacement will affect the local villages and population.	Acknowledged. Impacts on local villages and populations will be investigated in the social impact assessment of the Impact Assessment Phase of the study. Programmes to address displacement of populations will be implemented.
Bakone, Batlokwa and Lebelo Traditional Councils (Bakone Traditional Office Meeting 10/06/2008) Laka Traditional Council (Laka Traditional Authority Office 29/07/2008)	Protection must be provided on the towers so that the children can't climb on them. In 1980 three children died in Bakenburg after climbing on the tower and touching the cables.	Acknowledged. Eskom will ensure safety is a top priority during the construction and operation of the power line.
	All the villages have their cemeteries, grazing land and ploughing fields that must be considered when planning the transmission power line.	Acknowledged. Impacts on local villages, agricultural activities, heritage and cultural sites, etc will be investigated in specialist studies to be undertaken within the Impact Assessment Phase of the study.
	The amaKgosi request a donation from Eskom to build better schools.	Noted. This request has been passed onto Eskom for consideration.
Seleka Traditional Council (Seleka Traditional	What will Eskom do if the clinics or	Eskom will try, after evaluating all possible

Name / Organisation	Issues Raised	Response
Authority Office 29/07/2008)	schools are affected by the lines?	routes, to avoid lines that will result in the relocation of essential infrastructure such as clinics and schools. Where relocation occurs the affected parties will not be worse off than they were prior to being affected.
<p>Dikgale, Mashashane and Moletsi Traditional Councils (Capricorn District Municipality Meeting 12/06/2008)</p> <p>Laka Traditional Council (Laka Traditional Authority Office 29/07/2008)</p> <p>Shongoane Traditional Council (Shongoane Traditional Authority Office 30/07/2008)</p> <p>Lekalakala Traditional Council (Lekalakala Traditional Office, 12/06/2008)</p>	<p>The contractors must be introduced to the community. Once they are introduced they will be informed of the rules of the area. On the previous Eskom projects construction contractors damaged offices that the communities gave them to stay in. It is up to the contractors if they want to build camps or they want to rent rooms from the community.</p> <p>If any fence needs to be cut it must be fixed or gates must be put in. All the gates must be closed all the time. If they leave the gates open cattle will be lost or cattle will destroy farmlands.</p>	Noted. Eskom has established a stakeholders' department to liaise with landowners during and after construction of the lines to ensure that affected parties' concerns and areas of improvement are taken care of. These issues will be addressed in the Environmental Management Plan (EMP) for the project.
<p>Lekalakala Traditional Council (Lekalakala Traditional Office, 12/06/2008)</p> <p>Laka Traditional Council (Laka Traditional Authority Office 29/07/2008)</p>	If the line passes through this Traditional area in what way is the community going to benefit? The community does not have electricity and would like every household to have electricity.	Query referred to Eskom Distribution.
	How is Eskom going to take care of the	During construction, the construction site will

Name / Organisation	Issues Raised	Response
	grazing land and farms during and after construction?	be fenced off and access will be restricted. After construction, the site will be rehabilitated in order to make grazing and agricultural activities feasible, provided these do not interfere with Eskom infrastructure.
	Eskom must be responsible for any damages that they have caused during construction and maintenance.	This will form part of the EMP. The EMP will form part of the contract between Eskom and the construction and maintenance contractors. The contractors will be responsible for the rehabilitation of any areas damaged as a result of their activities.
Mapela, Mokopane and Bakenburg Traditional Councils (Langa Traditional Office Meeting 13/06/2008)	A binding contract should be signed between Eskom and the communities before the construction starts. Eskom must do proper investigations once the line has been selected because there are graves that may need to be moved and the proper process must be followed.	<p>Noted.</p> <p>A Heritage Impact Assessment will be undertaken as part of the EIA process. This study will also consider graves. Information from the local communities on the location of these sites is invaluable as part of this process.</p> <p>Should Eskom be granted authorisation to construct the line, a walk-through survey of the power line route will be undertaken by a heritage specialist in order to ensure that there is minimum impact on heritage sites (including graves).</p>

Name / Organisation	Issues Raised	Response
Mr. G. van Rooyen (25/08/2008, post received)	Safety and security issues regarding Eskom personnel's access to private land due maintenance.	Noted.
<b>3. Socio-economic Development</b>		
<p>Mr. C. Thompson (Iganu Game Ranch, attended Marken Public Meeting 19/06/2008)</p> <p>Mr. G. van Zyl (Cambodia Overysseel Gemeenskapgroep, fax received 08/06/2008)</p> <p>Mr. A. Swart (Marken Public Meeting 19/06/2008)</p> <p>Mr. C. Mills (Tswana Game Reserve, Lephalale Public Meeting 20/06/2008)</p> <p>Mr. D. Strydom &amp; Mrs. B. Strydom (Mama Tau, email received 23/06/2008)</p> <p>Mr. S. van Coller (Lindani Game Lodges, Vaalwater Farmers Hall Focus Group Meeting 05/08/2008)</p> <p>Mr. P. Bezuidenhout (Fairview Bowhunting, letter received 03/09/2008)</p> <p>Mr. W. van Wyk (Mowana Game Farm, letter received 03/09/2008)</p>	<ul style="list-style-type: none"> <li>• Construction of such a transmission power line will have devastating effects on the potential for inward tourist cash flow and the ability to maintain the existing fauna.</li> <li>• Severe business impacts on the tourism and hunting industries – a loss of jobs and property value will drop.</li> <li>• Tourists in this area come from Johannesburg and internationally, the transmission line will ruin the prime and pristine tourism area.</li> </ul>	Noted. These issues will be investigated as part of the Social Impact Assessment in the Impact Assessment Phase of the study.
<p>Mr. K. Basson &amp; Mrs. E. Basson (Owners De Draai, fax received 08/06/2008)</p> <p>Mr. A. Walker (Lapalala Wilderness, email received 25/06/2008)</p> <p>Mr. J. Miller (Waterberg Nature Conservancy,</p>	<ul style="list-style-type: none"> <li>• Consideration of what will happen to the value of the land and investments in the Waterberg Biosphere area.</li> <li>• The permanent damage of a pristine area for the short-term</li> </ul>	These issues will be investigated as part of the detailed specialist studies to be undertaken within the Impact Assessment Phase of the study.

Name / Organisation	Issues Raised	Response
28/06/2008)	gain of the limited lifespan of the mines in the area.	This project does not include any mining activities.
Babirwa and Nkidikitlana Traditional Councils (Babirwa Traditional Office Meeting 11/06/208) Seleka Traditional Council (Seleka Traditional Authority Office 29/07/2008)	How will the community benefit from the transmission power line? The odd job must be done by local people.	Construction and maintenance of a power line are generally highly skilled tasks. However, where unskilled or semi-skilled labour is required, this labour would be sourced from the local communities, where possible during construction.
Mr. C. Thompson (Iganu Game Ranch, attended Marken Public Meeting 19/06/2008 and Marken Focus Group Meeting 06/08/2008)	Two transmission power lines running next to each other will severely alter the landscape, and for some of the small farms in the servitude a lot more productive land will be displaced. Many small farms will be totally out of income if two 765kV lines had to run through them. Does Eskom have answers for these farmers on their current loss in income due to the proposal of these lines on their land?	Acknowledged. These issues will be investigated as part of the detailed specialist studies to be undertaken within the Impact Assessment Phase of the study.
Mr. A. Myburgh (Tholo Bush Estate, Lephalale Public Meeting 20/06/2008) Mr. C. du Plessis (TOOG, Lephalale Public Meeting 20/06/2008)	The hunting farms in this area attract a number of tourists as they are exempt farms, the international tourists can come there all year round. Being exempt farms pertains to their permits to trade with game. This is the LP's highest level of business.	Noted. These issues will be investigated as part of the Social Impact Assessment in the Impact Assessment Phase of the study.
Ms. FH van der Heever (landowner, Potgietusrus	<ul style="list-style-type: none"> <li>Their property was purchased with</li> </ul>	This issue will be investigated as part of the

Name / Organisation	Issues Raised	Response
DLU Focus Group Meeting 06/08/2008)	<p>an existing 400kV line on it; if another line comes onto this property it will affect their eco-tourism business.</p> <ul style="list-style-type: none"> <li>• Where can they get the servitude agreement and conditions for the existing line on their property?</li> </ul>	<p>Social Impact Assessment.</p> <p>Mr Bobby Richardson (Lands and Rights, Eskom) gave his details to Ms van der Heever and he will assist her in obtaining the necessary information.</p>
<p>Mr. L. de Beer (Mogalakwena Municipality, Potgietusrus DLU Focus Group Meeting 06/08/2008)</p> <p>Mr. J. Oosterhoff (Leopard Leap Lodge, Vaalwater Farmers Hall Focus Group Meeting 05/06/2008)</p>	<p>If he was a landowner whose property would be affected by the transmission power line, is it true that he cannot do anything underneath the lines i.e. farm?</p>	<p>No, the farmer can still do some activities as Eskom has certain restraints about what activities can be done in the servitude.</p>
<p>Dr R. Baber (Waterberg Biosphere Reserve, Vaalwater Farmers Hall Focus Group Meeting 05/08/2008)</p>	<p>There is very little data available on the existing environment, eco-tourism and tourism in this area, will there be a thorough socio-economic study on a more detailed level than desktop level.</p>	<p>This will be conducted during the EIA Phase of the process, and the social specialist will contact landowners who have indicated that they would be willing to be interviewed by her.</p>
<p>Mr. K. Erasmus (EBB, Marken Focus Group Meeting 06/08/2008)</p>	<p>The impact of the people should not be considered more than biodiversity. There are many proclaimed conservation areas in the southern portion of the study area, but that does not mean that the northern portion has less 'conservation' areas.</p>	<p>Stakeholders are encouraged to provide the Public Participation Office of all details regarding these conservation areas.</p>
<p>Mr. W. Esterhuizen (Marken Safaris, Marken Focus Group Meeting 06/08/2008)</p>	<p>The farms in this area are interdependent on each other, they having gaming/hunting rights on each</p>	<p>This will be investigated as part of the Social Impact Assessment.</p>

Name / Organisation	Issues Raised	Response
	<p>other's property therefore the directly affected farms are not only impacted, the line of site and surrounding farms are all affected.</p>	
<p>Mr. A. Myburgh (Tholo Bush Estate, Lephale Focus Group 04/08/2008)</p> <p>Mr. G. van Zyl (Agri Lephale and TOOG, Lephale Focus Group Meeting 04/08/2008)</p>	<p>This proposed project is affecting his sales of property daily. If there is a preferred option they need to know now so as to make decisions regarding their future planning.</p>	<p>It was stated at this meeting, by Eskom and Savannah Environmental that Proposed Corridor 1 seemed to have the least impact on the surrounding environment and that this was the preferred route.</p> <p>The Environmental Team was provided with a legitimate argument by an I&amp;AP that this statement goes against environmental legislation and Regulations, and a full assessment of each alternative needs to be undertaken before a preferred Corridor can be identified.</p> <p>At this stage, before the detailed EIA study, the Northern Route seems to be the one posing the least impact to the environment when compared to the most southerly route. The preferred route will be confirmed by a detailed EIA in consultation with landowners.</p>

Name / Organisation	Issues Raised	Response
<p>Mr. W. van Wyk (Mowana Game Farm, letter received 03/09/2008)</p> <p>Mr. G. Spanio (Jantil Farming – Marula Wildlife, letter received 03/09/2008)</p>	<p>The transmission line in the area will result in many hunters and tourist venturing to other areas, hence damaging the areas greatest source of income and in turn this will affect job opportunities in the area: future and current opportunities.</p>	<p>This will be investigated as part of the Social Impact Assessment.</p>
<p>Mr. Werner Lewies (Ellisras DLU, landowner, Lephale Focus Group Meeting 16/02/2009)</p>	<p>As landowners, they, also have to make 20 year plans to ensure that they can overcome the financial losses of Eskom in the area. It seems that Eskom is basically asking them not to invest in their property.</p>	

**Table 3.2: List of Social Impacts raised during SEIA Focus Group Meetings**

<b>Held at 10am on the 28th of July at Marken</b>	
<b>Name of I&amp;AP</b>	<b>Summary of issue</b>
Rene van der Berg	Farming on the farm Pieterman in the corridor for the line option going north of Marken (Corridor 2). We are farming on only 260ha but we have a lodge and we have made many improvements. We have hunters and tourists, and we allow our guests to hunt on other concessions. We prefer the existing Eskom route (Corridor 8).
Willie Esterhuysen	We farm on Rooibokpan with a size of 650ha. We run Marken Safari from the farm and we earn 100% of our income from hunting. Our entire farm is inside the blue line corridor (Corridor 2) and we stand to lose everything. We prefer the exiting Eskom route (Corridor 8).
J. B. Kloppers	We farm on Daggakraal, which is divided into smaller portions and of which we own about 500ha. We are on the red route (Corridor 1) and it goes right through our property. I have a pacemaker and I am scared that I will not be able to hike on my farm anymore due to the power line.
Rene Hennop	We farm the properties Gouda and Sandnek (Leerdam). The powerline option blue (Corridor 2) will be on the stoep of the lodge right in front of us. We cater for both hunters and international tourists. The whole area is tourist orientated so this will be applicable to all other farms in the area as well. At Gouda the line is on our border and goes through game enclosures. There is also Tambotie found in this area.
C. E. Ackerman	The blue line (Corridor 2) runs straight over the old homestead on the farm. The homestead is more than 100 years old. It has a large historical impact for us.
G. P. Lamprecht	I don't understand why the line does not follow the road. Access would be easier and it would be a lot cheaper to construct. Going through the bush does not make sense to me.
Caspere Spanio	We occupy the farm Turflaagte of 865ha on the blue route (Corridor 2). We get 100% of our income from tourism and the lodge is in the middle of the proposed corridor. If the line runs north of us you will see it from our porch. We prefer the exiting Eskom route (Corridor 8).
<b>Held at 10am on the 21st of July at Lephalale</b>	
Group as a whole	Concerns were raised regarding the potential economic impact on the tourism industry.
Group as a whole	Concerns were raised regarding the potential visual impact, which will impact on the tourism industry.

<b>Held at 10am on the 28th of July at Marken</b>	
<b>Name of I&amp;AP</b>	<b>Summary of issue</b>
W. Lewis	Compensation should not be once off. The damage to the land is not once-off but continuous. Eskom must rather rent the land from the landowner. Compensation must be fair. In 20 years' time the market value of surrounding farms will be higher than today and the market value of the farms with power lines maybe even lower in comparison to today. We will not listen to Eskom. Eskom must listen to our conditions.
W. Lewis	Whom should I phone at Eskom to complain about the lack of maintenance in the existing servitudes? The call centre "does not work."
W. Lewis	An SEIA should be done on the existing lines. This will give an indication of the potential impact that the proposed lines will bring about – not only during construction but also during operation. Eskom should do this first before constructing the lines and doing the EIA.
W. Lewis	Eskom should buy out the affected farm portions affected in the green corridor (Corridor 8) should the proposed lines follow the existing lines.
Group as a whole	Cattle refuse to graze in the servitude. The lines shock them. Hunters have to get off the game driving vehicles when the servitude is entered in order not to get shocked by the lines.
Dr. Botha	The exact route should be indicated to the affected landowners by GPS.
Dr. Botha	Specialists should inform landowners about their intended visits to farms. Landowners, and not the workers, have the best knowledge of the land.
Game farm owners	Eskom's maintenance helicopters come unannounced. The helicopters frighten the game, and game can hurt themselves. Maintenance teams do not inform landowners about the maintenance schedule, they leave gates open and take short cuts. They enter private property without notifying the owner.
W. Lewis	The alternative north of Tafelkop will have to be taken, and north of the road (Corridor 8). There is no space alongside the existing lines or south of the road.
Group as a whole	Why can't the existing lines be strengthened to 765kV transmission lines?
W. Lewis	The anchor line is anchored outside of the servitude. Eskom does not "maintain" the land outside the servitude. Game can hurt themselves on these anchor lines. A buck cut its leg on the anchor line.
Dr. Botha	The red corridor (Corridor 1) is technically not feasible. The area is wilderness area.

<b>Held at 10am on the 28th of July at Marken</b>	
<b>Name of I &amp; AP</b>	<b>Summary of issue</b>
W. Lewis	Although it makes sense to put the proposed lines alongside the existing lines, it means that landowners already affected by the existing lines will have even more land that is wasted – mostly due to the sekelbos that takes over because of lack of servitude maintenance. The impact of the existing lines is already enormous. Even the area between the existing servitudes are taken over by sekelbos.
W. Lewis	People will have to be resettled should the blue line (Corridor 2) be chosen. Apart from that, mining is planned in areas in and surrounding the blue lines. The green line (Corridor 8) then becomes preferable. At Trompettersfontein the coal is about 100 meters deep.
Dr. Botha	The blue line (Corridor 2) follows a more level area and it will be easier to construct and maintain lines in these areas.
Group as a whole	The lines should go underground.
W. Lewis	The construction activities should be planned to accommodate the hunting activities. The lines can't be constructed while hunting is taking place. Hunters book on average 7-8 months in advance. They do not choose a farm because of the construction activities taking place on it.
W. Lewis	This land is our "erfgrond." We have inherited the land from our predecessors and we would like to keep it the way they have known it.
	Had a known about the power lines years ago I would not have stayed here. Now there is too much sentiment towards this area and it will be difficult to move despite the presence of power lines. I am connected to the land.
Group as a whole	Where will the water come from to supply the power stations?

Issues and concerns raised by the people in traditional authorities areas during the fieldtrip included:

- The need for the line for financial benefit;
- In terms of route selection, the land of white people gets preference over black people (perceived as negative);
- Black people should get the same amount as white people for the servitude.
- A once-off payment for the servitude is not acceptable, and an annual/monthly payment is expected;
- A commencement fee must be paid;
- The Traditional Authorities should be compensated;
- Alternative land should be offered;
- Eskom tends to select the cheapest option without considering people;
- The construction workers should be introduced to the affected communities and informed about the ways of the communities;
- Ownership of the servitude should be clarified;
- Eskom should not work with the municipality because the municipality does not assist authorities;
- The Traditional Authorities wants benefits such as schools, clinics, post office, hall, technikon/technical college, market;

The following issues were highlighted by the social team in the Scoping Study:

- Impact on current establishments and planned developments for the area in terms of residential, tourism, mining and agriculture;
- The potential impact on landing strips, centre pivots and dwellings/homesteads;
- Influx of construction workers may lead to a change in the number and composition of the local population, and impact on economy, health, safety and social well-being;
- Influx of job seekers may lead to a change in the number and composition of the local population, and impact on economy, health, safety and social well-being;
- Although maintenance workers already active in the area will maintain the proposed lines, their activities may affect landowners who are not currently affected by maintenance activities;
- Direct formal job opportunities for individuals and/or contractors (economic impact);
- Indirect formal and/or informal job opportunities for individuals and/or contractors income (economic impact);
- Economic impact as a result of reduction in tourists/hunters on affected and surrounding properties;
- Economic impact as a result of reduction in tourists/hunters on affected and surrounding properties;

- Economic impact as a result of the presence of the power lines;
- Economic impact as a result of the construction and operation of the line – benefits economic growth;
- Economic impact associated with the payment of compensation (number of properties per alternative and compensation costs);
- Attitude formation against the project could have economic impacts and could impact on social well-being;
- A breakdown in the negotiation process in terms of land acquisition could severely delay the project and result in an economic impact on both the landowner as well as on Eskom;
- Additional demand on municipal services could impact on the availability of these services. A lack of services could impact on health;
- Presence of construction workers and job seekers on surrounding landowners' sense of safety and security and being in control;
- Presence of construction workers and job seekers may impact on local people's health and safety;
- Socially acceptable integration, including the risk of spreading STIs and HIV/AIDS;
- Psycho-social impact of construction activities and the presence of the lines.

### **3.2. Cumulative Impacts**

The most important cumulative impacts relate to ongoing industrial development of the Lephalale area and the requirement for transport Corridors between the area and the economic hub of Gauteng and other central regions. It is crucial that major economic participants in the region and the South African government create long term strategic plans for the region that will accommodate and enhance a wide range of economic activities including agriculture and tourism.

Some other projects planned for the area are the 2x400kV transmission power lines from Medupi to Marang and the 1x400kV transmission power line from Medupi to Dinaledi. The Medupi Power Station is currently being constructed, whilst the Masa (Delta) substation still has to be constructed. Construction of the 4x400kV transmission power lines between Mmamabula and Selomo has to commence. The EIA for the 400kV transmission power lines from Selomo to the new Mokopane substation is being conducted. It is crucial that these projects are aligned to minimise the potential negative social impacts and enhance the potential positive social and economic impacts.

### 3.3. Detailed Impact Assessment

The impacts that are discussed in this section include mental health/psychosocial impacts as well as economic impacts. Martikainen, Bartley and Lahelmac (1999) explain that *“macro- and meso-level social processes lead to perceptions and psychological processes at the individual level. These psychological changes can influence health through direct psychobiological processes or through modified behaviours and lifestyles. However, many psychosocial exposures such as unemployment (so called ‘stressful life-event’) and social networks/supports need not necessarily invoke psychosocial processes or require psychosocial explanations. Thus, unemployment that leads to loss of income and an inability to buy material necessities of life does not constitute a psychosocial explanation of health. However, a psychosocial process is operating when unemployment leads to loss of self-esteem and feelings of worthlessness that affect health via direct psychobiological processes or through modified behaviours and lifestyles. Similarly, social networks may provide instrumental and material benefits and opportunities as well as close person-to-person social contacts and emotional support; yet only the latter path seems to qualify as a psychosocial process.”*

The impacts are assessed in the following order:

- Geographical Processes- involuntary resettlement
  - Description and Assessment of the potential psycho-social impacts as a result of involuntary resettlement.
- Geographical Processes- agricultural activities
  - Description and Assessment of potential mental/psycho-social and physical health impacts as a result of land use changes during construction and operation.
- Demographic processes- **influx of workers**
  - Description and Assessment of potential physical health impacts as a result of influx of workers during construction and operation.
- Demographic processes- **influx of job seekers**
  - Assessment of potential physical health impacts as a result of influx of job seekers during construction and operation.
- Socio-cultural processes- influx of workers
  - Description and Assessment of potential impacts on social cohesion as a result of influx of workers with different cultural backgrounds to the local communities during construction and operation.
- Socio-cultural processes- nuisance impacts
  - Description and Assessment of potential nuisance impacts during construction and operation.
- Socio-cultural processes- Impact on sense of place
  - Description and Assessment of potential impact on sense of place during construction and operation.
- Bio-physical processes- impact on health

- Description and Assessment of potential health impacts as a result of bio-physical changes during construction and operation.
- Economic Processes- Impact on hunting and tourism industry.
  - Description and Assessment of the potential impact on hunting and tourism industry output as a result of project activities.
- Economic processes- impact on hunting and tourism industry employment.
  - Description and Assessment of potential impact on hunting and tourism industry employment.
- Economic processes- Employment as a result of project activities
  - Description and Assessment of potential employment impacts.
- Economic processes- Impact on property values
  - Description and Assessment of potential impacts on property values.

In order to assess the Corridor alternatives in respect of their anticipated social impacts, a distinction is made between the following impacts:

- **Category 1:** Impacts that are not expected to differ between the proposed corridor alternatives, e.g. the number of construction workers that will be needed for the proposed project remains the same, irrespective of the chosen alternative; and
- **Category 2:** Impacts that are expected to differ between the proposed alternative Corridors, e.g. the number of households to be resettled increases if the development traversed densely populated areas as opposed to skirting populated areas.

### 3.2.1 Geographical Processes – Involuntary Resettlement

**Table 3.3: Description of Psycho-social Impacts as a result of Involuntary Resettlement**

<b>Impact Assessment Profile</b>	
<i>Sector/ Impact variable</i>	Health and safety.
<i>Change process</i>	Involuntary resettlement.
<i>Impact Parameter</i>	The psychosocial effects of involuntary resettlement. Involuntary resettlement has to take place where dwellings fall in the servitude to mitigate the potential impact of Electro and Magnetic Fields (EMFs) on people. The effect of EMFs as such is not assessed here, because the servitude width is regarded as sufficient mitigation measure to mitigate the potential physical health impacts of EMFs.
<i>Category</i>	2
<i>Sources consulted</i>	Scoping Social Impact Assessment. Literature on the effect of involuntary resettlement.
<i>Areas of concern</i>	<ul style="list-style-type: none"> <li>• Those who have a long family history with their homes.</li> <li>• Those whose land will be lost to them altogether because of the size of their land compared to the size of the land taken up by the power lines crossing their land.</li> <li>• Areas where future development towards and into the servitude might take place, especially those people that don't have a choice (lack of choice usually related to poverty or tribal land given to them).</li> <li>• Labour tenants and the illiterate and vulnerable might have a poor understanding of the process of resettlement and their rights.</li> </ul>
<p><b>1. Status or incidence without the project (baseline)</b></p> <p>The status is twofold: People living in the servitude will have to be involuntarily resettled to accommodate the servitude; dwellings that are built in the servitude once the lines are operational will have to be relocated.</p> <p>Although settlement in a servitude is not allowed, action against these occurrences is not taken (<b>Figure 3.1</b>). It is not clear who takes responsibility for the removal of illegal dwellings in a servitude – Eskom, the Tribal Authority or the municipality.</p>	
<p><b>2. Projected status or incidence with the project</b></p> <p>It is likely that involuntary resettlement of people will be necessary to accommodate the new proposed transmission power lines and that people will move illegally into the servitudes during operation, necessitating involuntary resettlement during operation. <b>Figure 3.1</b> illustrates the dwellings that occur in the Corridors, after which a detailed</p>	

assessment of each Corridor is done.

### **3. Cause of projected impact**

Involuntary resettlement prior to construction of the lines.

Involuntary resettlement during operation: Experience has shown that where servitudes run in close proximity to communities, houses usually illegally develop into the servitude because of normal growth, urbanisation, and/or job expectations because of a project (such as building a power line). Development takes place mostly informally but also formally. This has negative safety and health implications for people, and needs to be considered. See **Figure 3.1** for examples of dwellings which have been developed in servitudes of various power lines.

### **4. Effect of projected impact**

Heeding the International Commission for Non-Ionising Radiation Protection (ICNIRP) guidelines, people who are settled in a servitude have to be relocated, which may have an impact on the health of people (physical and mental). The impacts as a result of relocation might be numerous and vary between people. The impacts of relocation on a person depends on the level of attachment to a place, which in turn is informed by variables such as age, number of years spent in that particular area, personality, etc. (Marriott 1997). The impact is therefore mostly on mental health, which might affect physical health. According to the IFC (International Finance Corporation) standards, involuntary resettlement of people should be avoided as far as possible to mitigate the potential impacts of involuntary resettlement.

### **5. Nature of impact**

Negative: Unmitigated involuntary resettlement could lead to landlessness, joblessness, marginalisation, food insecurity, rejection by host communities.

Positive: The process could be positive if compensation is considered adequate and the negotiation process is executed in a professional manner.

### **6. Magnitude**

The intensity of the impact is expected to reduce as time goes by. The magnitude will be limited to the families and communities affected by involuntary resettlement, as well as the host communities, i.e. the communities the displaced people move to.

### **7. Location/extent**

The extent will be on a local level, and maybe on a national level – depending on where displaced people are relocated to. It is likely that displaced people will be resettled within the study area. Demographic changes as a result of involuntary resettlement are therefore not likely to occur.

### **8. Timing**

Involuntary resettlement will have to take place prior to construction and or during operation in the case of illegal occupation of land.

**9. Phasing**

The pre-construction phase poses significant changes because relocation has to occur prior to the commencement of construction activities. People might opportunistically settle in the servitude during this phase in the hope of getting compensation but illegal occupation will mostly occur in the operational phase.

**10. Duration**

People will react differently to involuntary resettlement (positively or negatively) and the duration of the impacts will therefore depend on the impacted individuals. The impact is likely to diminish over time.

**11. Likelihood**

It is likely that involuntary resettlement will be necessary, and the impact on mental health is likely to occur amongst the relocated.

**12. Significance**

See **Table 3.4**. Mitigation is required to reduce the negative impacts and enhance the potential positive impacts.

**13. Suggested mitigation measures**

See **Table 3.4**.

**14. Cross cutting issues**

Participation: Local communities should be “watchdogs” to ensure that people do not move into the servitude during the pre-construction and operational phases.

Those who live in traditional areas might not benefit from the compensation, because the compensation will be at the disposal of the Traditional Authorities.

Sustainability: Education programmes about the dangers of moving into a servitude should be continuous.

**15. Principles**

- Avoid displacement of people.
- Avoid settlements and dwellings.
- Avoid interference with current and expected/planned future development.

**Figure 3.1: Examples of Illegal Land Occupation in a Servitude**



Medupi-Dinaledi/Marang



Zeus\_Perseus



Pilanesberg Area



Majuba-Umfolozu



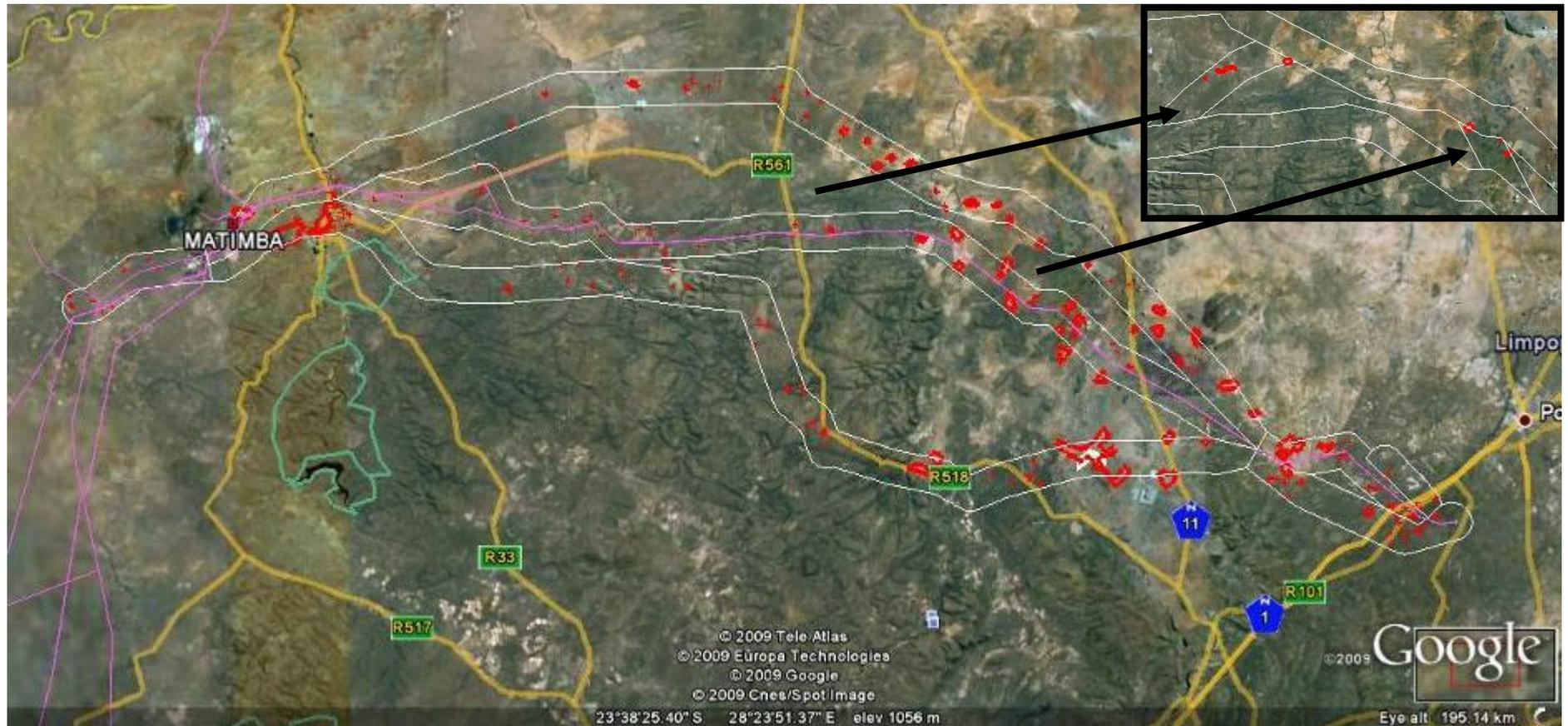
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Majuba-Umfolozu

**Figure 3.2: Occurrence of Dwellings in the Corridors**

Dwellings are highlighted in red.



Source: Google Earth and 1:50 000 maps

The potential psycho-social impact as a result of involuntary resettlement has to be kept to a minimum. Because it is difficult to determine the potential impact on a prospective basis (people’s reactions will differ), the potential impact should be managed by keeping the number of households that could be resettled to a minimum. To determine whether the proposed Corridors differ significantly in terms of number of dwellings that could be resettled, each Corridor has to be assessed separately. This assessment is subsequently done prior to completing the impact assessment table (Table 3.4)

**Corridor 1:** In addition to scattered households, the closest human settlements to this Corridor include the following areas (refer to **Figure 3.3**):

<b>Settlement</b>	<b>Location in the Corridor</b>	<b>Recommendation</b>
Onverwacht and Lephhalale.	The Corridor crosses these towns.	To avoid involuntary resettlement, the Transmission power line should go south of these towns alongside the planned P138-1 road ( <b>Figure 3.6</b> ).
Mmamatlakala and Ga-Motlana.	These villages are north of the middle line of the Corridor. Villages are likely to develop towards each other and alongside the road.	The Transmission power line should go south of these villages, south of the R561, to allow for development of villages north of the R561.
Ga-Mabulela, Mmahlogo, Mapela, Ga-Mosoge, Ga-Tshaba, Ga-Malebana.	Villages are clustered together north of the middle of the Corridor.	Avoid going through this area to avoid involuntary resettlement of people by keeping south in the Corridor.
Mogole, Mamapa Ga Masenya and Ga-Malekane.	Mogole is in the middle of the Corridor, and the other two villages to the south.	It is possible to plot a route through this area to avoid displacement. Development into the servitude is a possibility (Figure 3.3, white line).



Settlement	Location in the Corridor	Recommendation
Phetole, Jupiter, Ga-Mangou.	from Phetu, are to the right (or east) of the Corridor.	(western) border of the Corridor to avoid villages and to allow development of villages.

**Figure 3.4: Involuntary Resettlement - Areas of Concern in Corridor 2**  
(Ga-Chere, Ga-Monare, Ga-Rapadi, Nong, Mathekga, Ga-Dukakgomo)



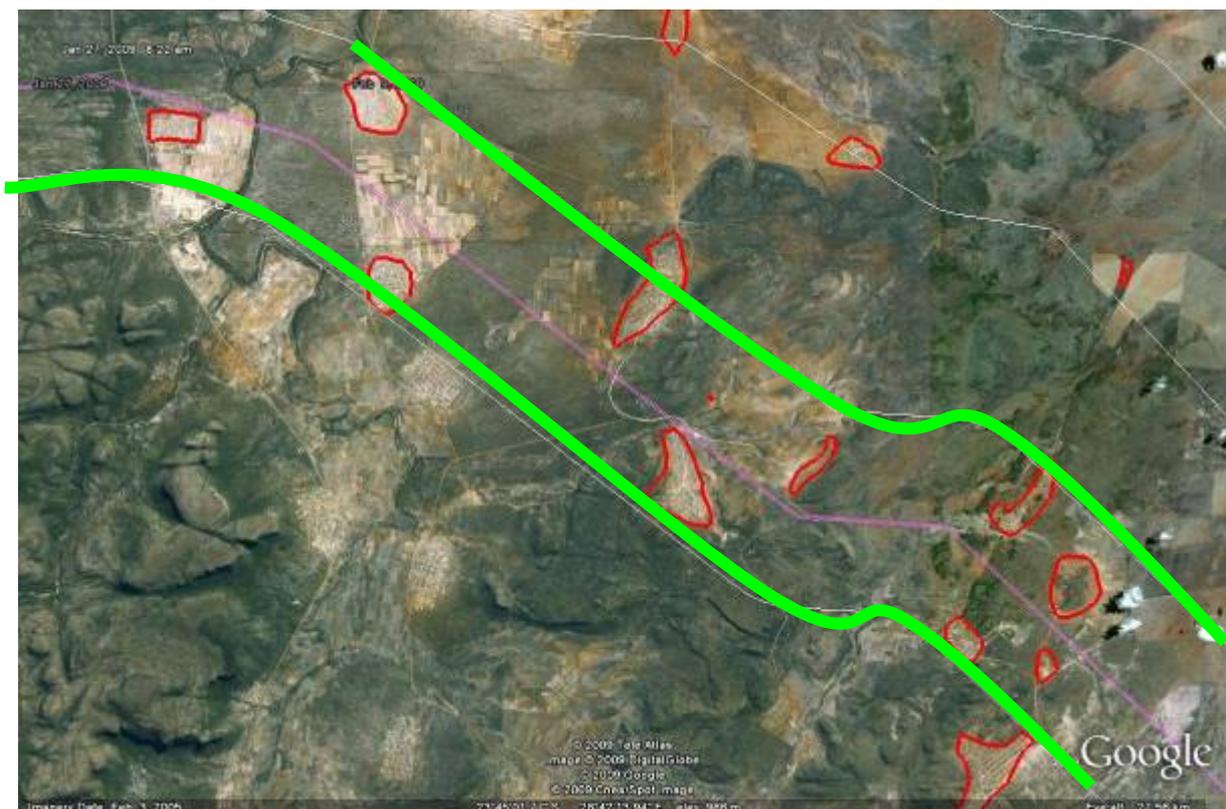
Source: Google Earth and 1:50 000 maps

**Corridor 8:** In addition to scattered households, the closest human settlements to this Corridor include the following areas (refer to **Figure 3.2**):

Settlement	Location in Corridor	Recommendation
Maropeng, Onverwacht, Lephale.	Maropeng north-west and Onverwacht/Lephale south east of the Corridor.	There is enough space between Maropeng and Onverwacht-Lephale. Follow the existing lines to better manage and integrate future development.
A number of villages between Magagamatala and Ga-Mabusela.	The existing lines should be followed ( <b>Figure 3.5</b> ).	The proposed lines should be placed to the right (north-east) of the existing lines to avoid involuntary resettlement. Of concern is the potential for development into the servitude. By following the proposed deviations these areas will be missed.

Settlement	Location in Corridor	Recommendation
Marken, Ga-mushi, Vianen, Mongatane, Garapadi, Gamonare, Nong, Ga-Mathekga, Mosuka, Gadukakgomo, Gabelelo, Mphelelo, Buffelshoek	In Corridor 2, as part of the deviation	Follow the proposed deviation to minimise potential health and safety impacts.

**Figure 3.5: Involuntary Resettlement - Areas of Concern in Corridor 8**  
(Diretsaneng, Ga-Monene, Ga-Malapile, Dipishi, Ga-Mokwana)



Source: Google Earth and 1:50 000 maps

**Corridor 7:** In addition to scattered households, the closest human settlements to this Corridor are Onverwacht and Maropong where it splits in Corridors 1 and 2.

**Corridors 4, 5 and 6:** In addition to scattered households, the closest human settlements to these Corridors include the following areas (refer to **Figure 3.2**).

Settlement	Location in Corridor		Recommendation
	Corridor 4	Corridor 5/6	
Boetse, Ga-Mashashane, Matlaleng.	Adequate space is available for the servitude to avoid these villages.	North of the existing lines.	Follow the existing lines to their north to avoid involuntary displacement of people. Of concern is the potential for development into the servitude.
Ga-Matlapa.		South of the existing lines.	
Seborwa.		North of the existing lines.	

In terms of scattered dwellings on farm portions, it is estimated that the number of dwellings that may be affected are as follows (refer to **Figure 3.2**):

Approximate number of dwellings along the Corridors
<b>Corridor 1</b>
Going south of Lephalale along the proposed road (P138-1) will result in the involuntary resettlement of people. The exact number of households depends on the location of the road. It will be possible to avoid involuntary resettlement going north of Lephalale and Onverwacht by mainly following the existing lines. Topography allowing, it will be possible to avoid involuntary resettlement of households along the rest of the Corridor.
<b>Corridor 2</b>
It will be possible to avoid involuntary resettlement going north of Lephalale and Onverwacht. Topography allowing, it will be possible to avoid involuntary resettlement of households.
<b>Corridor 8</b>
The proposed lines will have to go south of the existing lines because parts of the existing lines follow a road and there is no space between the road and the existing lines. At least one household will have to be resettled involuntary. It could be that more households will have to be resettled should it not be technically feasible to follow the existing lines at all times and deviations are necessary/the other side of the road is followed.
<b>Corridors 4, 5, 6 and 7</b>
It seems to be possible to avoid the involuntary resettlement of people.

In light of the preceding assessment the Impact Assessment Table is completed below.

**Table 3.4: Assessment of Psycho-social Impacts as a result of Involuntary Resettlement (Construction and Operation) - Corridors**

<b>CONSTRUCTION PHASE</b>		
<i>Category 2 Impact</i>	<b>Before Mitigation</b>	<b>After Mitigation</b>
<b>Impact</b>	Psycho-social impact as a result involuntary resettlement.	
<b>Extent (Scale)</b>	Site only (1)	Site only (1)
<b>Duration</b>	Very short-Permanent (1-5)	Very short-Permanent (1-5)
<b>Magnitude</b>	Low-Moderate (2-3)	Low-Moderate (2-3)
<b>Reversibility</b>	Irreversible (5)	Irreversible (5)
<b>Probability Corridor 1</b>	High (4)	Medium (3)
<b>Probability Corridors 2, 7, 8, 4-6</b>	Medium (3)	Low (2)
<b>Significance Corridor 1</b>	Medium (36-56)	Low-Medium (27-42)
<b>Significance Corridors 7, 2, 8, 4-6</b>	Low-Medium (27-42)	Low (18-28)
<b>Status</b>	Negative, could be positive for some (better circumstances for the poor)	Negative, could be positive for some (better circumstances for the poor)
<b>Mitigation</b>	<p>Construction</p> <ul style="list-style-type: none"> <li>• Areas where religious activities take place should be identified during the negotiation process and mitigation measures should be implemented to ensure that these activities can carry on.</li> <li>• Avoid the involuntary resettlement of people as far as possible.</li> <li>• If resettlement is unavoidable, residents should be sufficiently compensated for loss of livelihood and assisted with the relocation process.</li> <li>• Those with lack of negotiation skills and lack of knowledge about the negotiation process should be educated and assisted.</li> <li>• Impacted people should be informed about the timeframes for the project – not knowing when involuntary resettlement will take place will add to the stress levels.</li> <li>• Poverty and equity: A form of compensation should also be granted to individuals who are residing in informal settlements within the servitude and assistance with relocation should be given. This issue should be approached with caution as this might set a precedent for future projects (people might deliberately move onto a servitude for the purpose of receiving compensation).</li> <li>• Compensation should not focus on monetary compensation only. Where necessary, impacted people should be assisted to move, and should receive counselling. Monetary compensation should preferably not be given to the poor because of lack of experience to work with larger amounts of money. Compensation should rather be in the form of material goods and assistance, or financial guidance should be given.</li> <li>• A common standard of compensation should be applied to all properties.</li> <li>• Landowners should be made aware that a pre- and post evaluation of</li> </ul>	

	<p>their land value is possible.</p> <ul style="list-style-type: none"> <li>• Labour tenants who do not move with their employers to their new destination (e.g. where farms are bought out) should be assisted to find alternative long-term jobs.</li> <li>• The World Bank guidelines/IFC Performance Standards for involuntary resettlement should be followed.</li> <li>• Clear roles and responsibilities of Eskom and the impacted people should be formalised and adhered to.</li> <li>• Local customs should be acknowledged. E.g. the necessary ceremonies should be performed during the relocation and reburial of graves and Eskom should compensate affected families. However, this is unlikely to happen as Eskom would reroute the line and/or move towers to avoid this</li> <li>• Photos of the servitude should be taken prior to the negotiation process to monitor opportunistic settlement in the servitude for the purpose of being compensated.</li> </ul>
<p>To avoid potential negative impacts on health and safety and of displacement of people, the preferred Corridors are Corridors 2 and 8:</p> <ul style="list-style-type: none"> <li>• Corridor 1 will potentially impact the highest number of households (relocation), followed by Corridors 8 and then 2.</li> <li>• Corridor 8 already has access roads to existing lines and is therefore preferred – involuntary resettlement as a result of access roads can be avoided.</li> <li>• In terms of the current and future development of Lephalale, the town will develop between Lephalale and Onverwacht. A nodal linkage between Maropong and Onverwacht is planned. A transmission line going between Maropong and Onverwacht should therefore follow existing lines and stay on Eskom land where possible.</li> <li>• The P138-1 road to the south of these towns (<b>Figure 3.6</b>) is planned. Corridor 1 should preferably follow the planned 138-1 road. However, this will mean the involuntary resettlement of a number of people – the exact number cannot be determined at this stage.</li> </ul> <p>Between Corridors 4, 5 and 6, Corridor 4 is preferred. Corridors 5 and 6 go between Boetese and Matlaga and although there is enough there is enough space between these two villages and an existing line is followed, development might occur into the servitude. Corridor 7 is acceptable as no resettlement is foreseen.</p>	

To minimise the likelihood of development into the servitude during operation, the following mitigation measures are suggested:

- Educate surrounding communities about the dangers of living in the servitude.
- Community awareness on the safety mechanisms of a transmission power line and potential dangers.
- The awareness campaign should also focus on standard operating procedures when there is a breakdown in the line, e.g. people should steer clear of the area, who to contact, etc.
- Such an awareness campaign should be based on and addressed Frequently Asked Questions (FAQs) regarding a transmission power line, e.g. is it safe to walk underneath a transmission power line if the surrounding area is wet or it is raining?
- A form of signage on the towers should also indicate that it is dangerous.

- In some way a barrier (psychological and/or physical) should indicate that no structures should be built in the servitude.

Eskom together with municipalities and Tribal Authorities should make decisions about whose responsibility it is to move people illegally settling in the servitude.

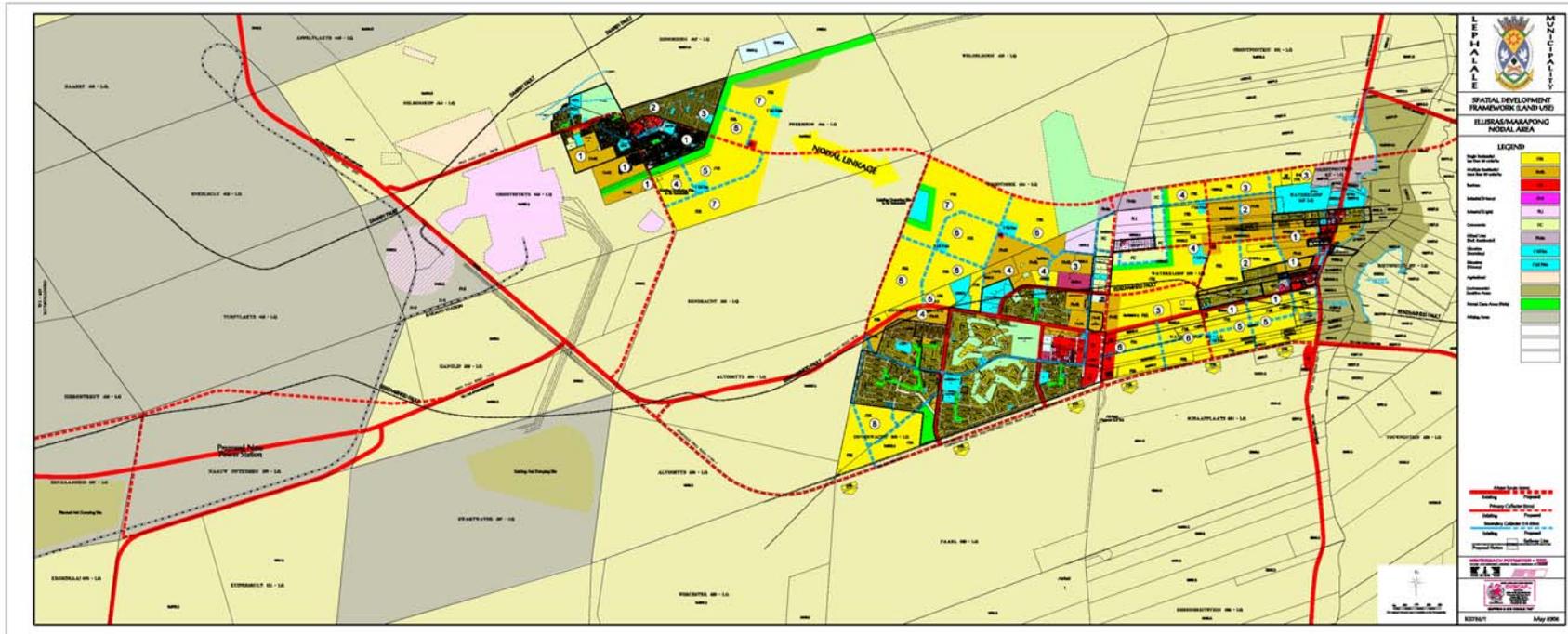
In terms of the proposed **substation sites**, no involuntary resettlement will be necessary for any of the sites and this impact is therefore not assessed with an impact table. The existing Matimba-Witkop 400kV Transmission power lines already prohibit development towards the servitude. Development is likely to occur to the north and south of the existing power lines. In terms of scattered dwellings on farm portions, no dwellings will be directly impacted by the proposed substation or turn-in lines at any of the proposed sites.

All **three alternative substation sites** are relatively close to existing local roads. The assumption is therefore that existing roads (be these local gravel roads or power line maintenance roads) will be used to access the preferred site. Considering the potential effect on settlement patterns and development (current and future), the following emerges:

- In terms of access roads, there is no preferred site.
- Due to its distance from existing settlements, Site 4 is preferred. It is also possible to avoid settlements and not affect their development.
- Transmission power line corridors not following the existing Matimba-Witkop transmission power lines and entering and exiting Sites 1 and 3 will potentially affect more settlements.

To avoid potential negative impacts on health and safety and settlements developments, the preferred site is Site 4.

Figure 3.6: Lephhalale Spatial Development Framework



Source: Lephhalale Spatial Development Framework 2006

### **3.3.1 Geographical Processes – Changes in Land use Activities**

In order to assess the potential impacts as a result of land use activities, the current and planned activities in the Corridors have to be assessed. **Figure 3.7** illustrates the land ownership and land use in the study area. Exempted game farms (**Figure 3.7**) are officially recognised and registered farms for capturing, selling and hunting of game. Exempted Game Farms in the Mogalakwena LM could not be sourced and only those in the Lephalale LM are depicted on the map.

The red arrows in **Figure 3.7** illustrate the movement corridors as identified in the Lephalale SDF. Corridors 2 and 8 are in close proximity to the main movement corridors.

#### **In terms of Game farms/nature reserves**

- Corridor 1 traverses the transitional, buffer and core areas of the Waterberg Biosphere, D’Nyala and Witvinger Nature Reserves. The game farm portions it transverses are approximately 40 in total.
- Corridor 2 mostly traverses the transitional area of the Waterberg Biosphere. The game farm portions Corridor 2 transverses are approximately 43 in total.
- Corridor 8 traverses the transitional, buffer and core areas of the Waterberg Biosphere. The game farm portions Corridor 8 transverses are approximately 35 in total.
- The game farm portions Corridor 4 transverses are approximately 5 (five) in total, including Percy Fyfe Nature Reserve.
- The game farm portions Corridor 5 transverses are approximately 2 (two) in total.
- The game farm portions Corridor 6 transverses are approximately 5 (five) in total.
- Corridor 7 transverses approximately 3 (three).

The intention of the Waterberg **Biosphere** is to

- Reconcile people and nature, not only have it as a protected area;
- Include a gradation of human intervention;
- Include a legally protected core area, a buffer area where non-conservation activities are prohibited, and a transition zone where approved practices are permitted.

Biosphere reserves are protected terrestrial and coastal environments of international conservation importance:

- They are unique categories of protected areas combining both conservation and sustainable use of natural resources;
- Biosphere reserves can be seen as building blocks for bio-regional planning and economic development;
- Biosphere reserves are community driven programmes assisted by government agencies.

**National parks and nature reserves** play a role in conserving the biodiversity, cultural landscapes, eco-systems, and species and these areas should be avoided in order to keep them as undisturbed as possible. Although game farms also play a role in conserving the biodiversity, cultural landscapes, eco-systems and species, the main activity is hunting. In light of this, Corridors 2 and 5/6 are preferred. Between Corridors 5 and 6, Corridor 5 is preferred as it follows existing lines. Corridor 7 does not traverse any national parks and nature reserves.

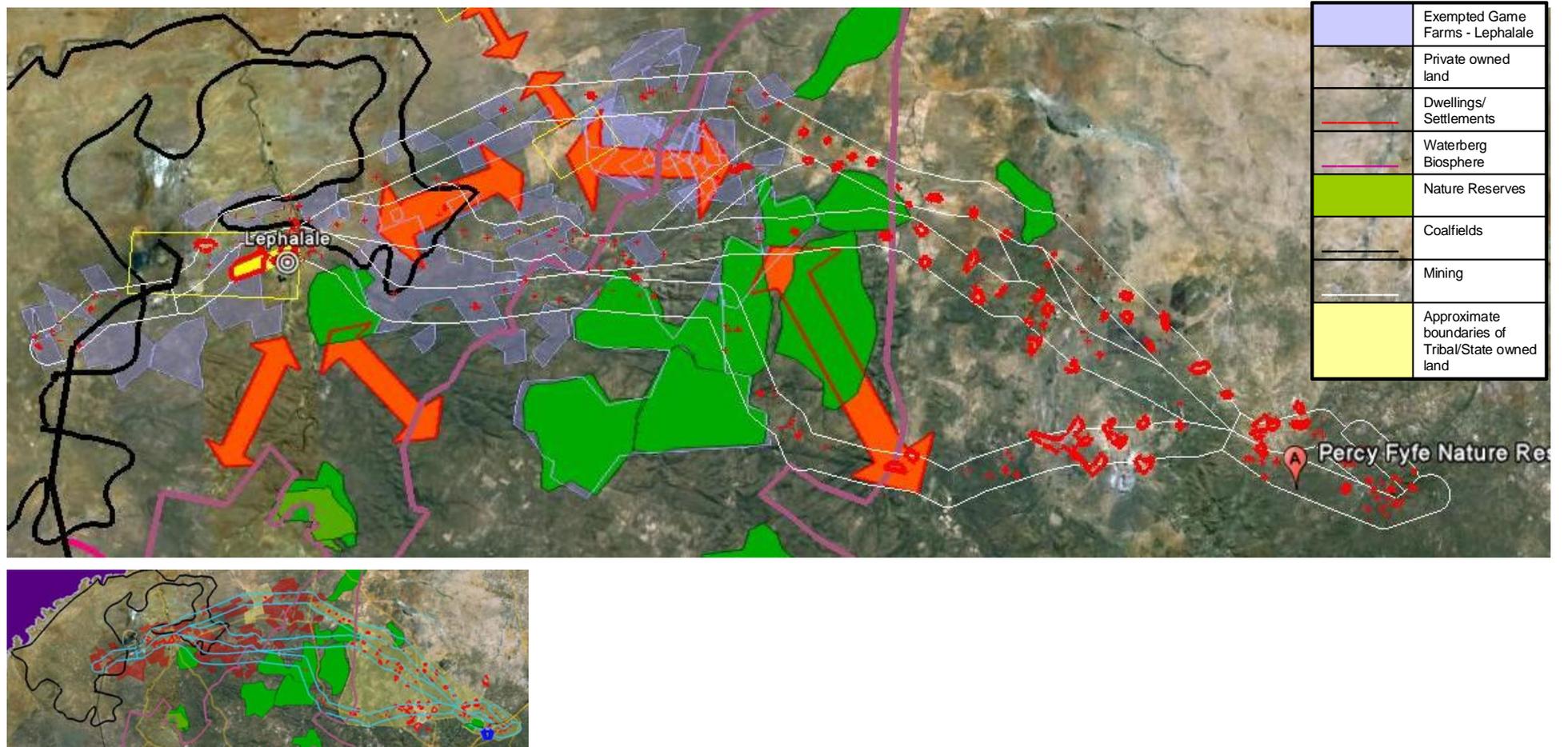
The planning of a conservancy, without hunting activities, along Corridor 1 is in an advanced stage and involves the integration of portions Norfolk, Colesberg, Adelaide, Godolpan, Mria, Woolwich, Onskuld, Duna, Adelaide, Beaufort and Branfort. The intention is to develop this area to its original natural state.

A number of private developments seem to be planned along all three Corridors, e.g. developments on Vlucht in Corridor 2. These developments, specifically regarding visual impact and impact on sense of place, should be taken into account when planning the final route and the costs of any changes necessary to accommodate the lines and mitigate the impact on sense of place and visual impacts should be carried by Eskom. For example, visual impacts on Vucht (Commiphora Huiseienaarsvereniging) could be mitigated by placing the lines in Corridor 8 along the foot of the koppie on the neighbouring farm.

**Figure 3.7** illustrates the coal fields in relation to the three proposed corridors and where coal mining could be expected to occur in future.

- Open cast mining is planned in Corridor 2, in the area of Weltevreden farm.
- Open cast mining is planned in Corridor 1, in the area of Ga-Pulca, where mining activities already occurs.
- Mining activities occur in the vicinity of Mokopane substation.
- Most of the coal field fall in Corridors 2 and 8.

Figure 3.7: Land Ownership, Land Use and Land Cover in the Corridors



Source: MetroGis, Lephhalale SDF and Google Earth

**Table 3.5: Description of Impacts as a result of changes in Land Use Activities**

<b>Impact Assessment Profile</b>	
<i>Sector/ Impact variable</i>	Health and safety.
<i>Change process</i>	Land use changes as a result of the construction activities, servitude, and presence of the line and towers.
<i>Impact Parameter</i>	Psycho-social impact (e.g. stress, anger, frustration) on landowners as a result of activities occurring in the servitude and vicinity of the line, which could potentially impact the physical safety of people and animals.
<i>Category</i>	2
<i>Sources consulted</i>	<ul style="list-style-type: none"> <li>• Comments and Responses Report.</li> <li>• Issues Registers of previous projects.</li> <li>• PHA MQR 2007.</li> <li>• Addendum to the Mmamabula-Delta 4x400kV Transmission power lines Scoping Report.</li> </ul>
<i>Areas of concern</i>	Areas with game, commercialised agriculture and irrigated areas.
<p><b>1. Status or incidence without the project (baseline)</b></p> <p>Cultivated land and natural vegetation cover a large part of the study area. Game farms and nature reserves occur in the study area. In proximity to villages, subsistence crop farming and livestock farming occur. Commercialised agriculture largely occurs in the northern part of the study area. Irrigated areas can be found along all the alternatives.</p> <p>Landowners have already been impacted as a result of the presence of the existing 2x400kV Matimba-Witkop transmission power lines - land use activities have to accommodate the lines and animals can be impacted as a result of the presence of the lines.</p>	
<p><b>2. Projected status or incidence with the project</b></p> <p>The responses from landowners who partook in the public participation process, the response from those who already have lines on their land, and responses from landowners affected by other projects indicate that the presence of the line would result in mental and physical health impacts.</p> <p><i>Cultivated land</i></p> <p>It is possible to cultivate land around power line towers, but it does complicate the process and some land for cultivation is lost. This is because the use of farming implements and equipment around/underneath power lines and anchor lines prove problematic. Cultivation activities will be more challenging during construction because of the access roads needed and occupation of additional land for construction activities.</p> <p>It is possible to irrigate under a 400kV Transmission power line, because of its height</p>	