4. CONCLUSIONS

4.1. SUMMARY OF IMPACTS

The change processes are grouped per project phase in Table 1 together with the significance of potential impacts before and after mitigation. The significance of potential impacts is then grouped per change process in Table 2. The positive impacts are given in italics.

Table 1: Summary of Impacts per Phase

CHANGE PROCESS	CHANGE PROCESS	SIGNIFICANCE (pre-mitigation)	SIGNIFICANCE (post-mitigation)
PRE CONSTRUCTION AND CONSTRUCTION			
ECONOMIC	*Direct formal job opportunities for local individuals and/or contractors*	*Medium +*	*High +*
	Indirect formal and/or informal job opportunities for local individuals and/or contractors - if accommodated in the communities	*Medium +*	*High +*
	Compensation for servitude	*Low +*	*High +*
	Visibility of construction activities that could lead to indirect economic change	High -	Medium -
LAND USE	Temporary loss of cultivated land due to construction activities	Medium -	Low -
	Temporary loss of grazing land due to construction activities - cattle	Medium -	Low -
	Temporary loss of grazing land due to construction activities – game	High -	Medium -
	Mining	High -	Low -
	Impact of construction activities on movement patterns of local community	Medium -	Low -
DEMOGRAPHIC	Relocation as a result of servitude negotiation	High-	Depends on individual/families
	Influx of construction workers on size and composition of local community	Medium -	*Medium +*
	Influx of job seekers on size and composition of local community	Medium -	Low -
	Outflow of locally employed labourers to move with the construction team	*Medium - and medium +*	*Medium +*
EMPOWERMENT AND INSTITUTIONAL	*The negotiation process*	*Low - to High +*	*Low + to Medium+*

	Control - feels lack of control because of presence of construction and maintenance workers.	*Medium -*	*Low + or Medium +*
ENVIRONMENTAL	Pollution and fire risk on construction workers and local community, economic	Medium - to High -	Low -
SOCIO-CULTURAL	Integration with local community, including risk of spreading STI and HIV/AIDS	Very high -	High -
	Construction related noise	Medium -	Low -
OPERATION			
ECONOMIC	*Direct formal job opportunities for local individuals and/or contractors*	*Low +*	*Medium +*
	Indirect formal and/or informal job opportunities for local individuals and/or contractors	*Low +*	*Medium +*
	Visibility of Transmission power line that could lead to indirect economic change	High -	Medium -
	Increase in electricity	*High +*	*High +*
LAND USE	Permanent loss of cultivated land due to presence of pylons on the land	Medium -	Low -
	Permanent loss of grazing land due to presence of pylons on the land	Medium -	Low -
	Impact of Transmission power lines on mining activities	High -	Medium -
	Impact of Transmission power lines on game	High -	Medium -
	Impact of Transmission power lines on spatial development	Medium -	Low -
	Impact of Transmission power lines on movement patterns of local community	Low -	Low /
SOCIO-CULTURAL	Integration of maintenance workers with local community, including risk of spreading STI and HIV/AIDS	High -	Medium -
	Presence of Transmission power lines on physical well-being	Low -	Low -
	Presence of Transmission power lines on mental well-being	High -	Medium -

Table 2: Summary of Impacts per Change Process

PHASE	IMPACT	SIGNIFICANCE (pre-mitigation)	SIGNIFICANCE (post-mitigation)
ECONOMIC CHANGE PROCESS			
PRE-CONSTRUCTION AND CONSTRUCTION	*Direct formal job opportunities for local individuals and/or contractors*	*Medium +*	*High +*
	Indirect formal and/or informal job opportunities for local individuals and/or contractors	*Medium +*	*High +*
	Compensation for servitude	*Low +*	*High +*
	Visibility of construction activities that could lead to indirect economic change	High -	Medium -
OPERATION	*Direct formal job opportunities for local individuals and/or contractors*	*Low +*	*Medium +*
	Indirect formal and/or informal job opportunities for local individuals and/or contractors	*Low +*	*Medium +*
	Visibility of Transmission power line that could lead to indirect economic change	High -	Medium -
LAND USE CHANGE PROCESS			
PRE-CONSTRUCTION AND CONSTRUCTION	Temporary loss of cultivated land due to construction activities	Medium -	Low -
	Temporary loss of grazing land due to construction activities - cattle	Medium -	Low -
	Temporary loss of grazing land due to construction activities – game	High -	Medium -
	Mining	High -	Low -
	Impact of construction activities on movement patterns of local community	Medium -	Low -
OPERATION	Permanent loss of cultivated land due to presence of pylons on the land	Medium -	Low -
	Permanent loss of grazing land due to presence of pylons on the land	Medium -	Low -
	Impact of Transmission power lines on mining activities	High -	Medium -
	Impact of Transmission power lines on game	High -	Medium -
	Impact of Transmission power lines on spatial development	Medium -	Low -
	Impact of Transmission power lines on movement patterns of local community	Low -	Low /

PHASE	IMPACT	SIGNIFICANCE (pre-mitigation)	SIGNIFICANCE (post-mitigation)
DEMOGRAPHIC CHANGE PROCESS			
PRE-CONSTRUCTION AND CONSTRUCTION	Relocation as a result of servitude negotiation	High-	Depends on individual/families
	Influx of construction workers on size and composition of local community	Medium -	Medium +
	Influx of job seekers on size and composition of local community	Medium -	Low -
	Outflow of locally employed labourers to move with the construction team	Medium – and +	Medium +
ENVIRONMENTAL CHANGE PROCESS			
PRE-CONSTRUCTION AND CONSTRUCTION	Pollution and fire risk on construction workers and local community	Medium to high -	Low -
SOCIO-CULTURAL			
PRE-CONSTRUCTION AND CONSTRUCTION	Integration with local community, including risk of spreading STI and HIV/AIDS	Very high -	High -
	Construction related noise	Medium -	Low -
OPERATIONAL	Integration of maintenance workers with local community, including risk of spreading STI and HIV/AIDS	High -	Medium -
	Presence of Transmission power lines on physical wellbeing of local community	Low -	Low -
	Presence of Transmission power lines on mental wellbeing of local community	High -	Medium
EMPOWERMENT AND INSTITUTIONAL CHANGE PROCESS			
PRE-CONSTRUCTION AND CONSTRUCTION AND OPERATION	*The negotiation process*	*Low - to High +*	*Low + to Medium+*
	Control - feels lack of control because of presence of construction and maintenance workers.	*Medium -*	*Low + or Medium +*

4.2. PREFERRED FINAL ROUTE

The study corridor for the EIA consisted of a number of options within the corridor. Finally, these alternatives have to be assessed in order to come up with a final preferred corridor from a social perspective. The assessment is based on information available to the social specialist to date. Based on these assessments as set out in 4.2.1-4.2.4, the proposed route corridor is as follows:

From Matimba B, follow the existing lines on the eastern side. Coming to the different options before entering Spitskop, cross over to the eastern option at point C on the map to enter Spitskop. Exiting from Spitskop, of the two options, follow the western option, and then turn east well south of Bojating. Cross the R511 after Thaba Tolo Game Reserve, and enter Dinaledi from the eastern option as opposed to the western option.

The arguments for this final route corridor are discussed in the sections ahead.

4.2.1. *Options north of Spitskop*

UNDESIRABLE AREAS		
Impact category	**Criteria**	**Comments**
Social	Areas currently occupied by human settlements	None
	Areas earmarked for future development (e.g. of residential units)	None
Land use	Areas occupied by open cast mining activities or surface infrastructure of underground mines	The options don't cross mining activities as such.
Tourism	Conservation areas/ lodges/ tourism destinations (more so eco-tourism)	The study corridor traverses many private game farms, but no conservation areas. It does traverse the planned Heritage Park, of which the application is in the process of being approved. This part of the HP, which the middle and western options north of Spitskop traverse, will be a community owned game reserve. The international definition of eco-tourism is not only experiencing nature, it includes diverse community activities and cultures of a country's inhabitants as well as its sensitive natural resources. This HP will therefore be an eco-tourism destination in the true sense, benefiting a whole community.

HIGHLY UNDESIRABLE AREAS		
Impact category	**Criteria**	**Comments**
Social	Areas in close proximity of current human settlements	The eastern route passes by the least humans settlements, mainly Swartklip mine town. The middle and western routes pass close to a higher number of communities.
	Areas earmarked for future development (e.g. of residential units)	None.
Land use	Areas occupied by cultivated land	Irrigation along the western route might be affected.
	Areas in close proximity of underground mining	All three options.
Tourism	Buffer zones around conservation areas / lodges / tourist destinations	The eastern route will fall in the buffer zone of the proposed Heritage Park.
SOMEWHAT UNDESIRABLE AREAS		
Impact category	**Criteria**	**Comments**
Social	Areas far removed from existing settlements	The eastern route is the furtherest removed.
	"Greenfields" areas (areas not currently occupied by any infrastructure)	The southern parts of the eastern and the middle route.
Land use	Areas far removed from existing road infrastructure	The southern part of the eastern and middle route.
	Areas occupied by livestock farming	The western route, some parts of the other routes.
Tourism	Areas with potential for future development as tourist destinations/ recreational areas	The Heritage Park is in the process of being proclaimed.

In light of the preceding assessment, the eastern route is the preferred route. Although is does go through game farms, and does not follow existing infrastructure, the argument is that:

- Although no formal future developments are planned for the villages in this area, one can assume that villages will grow towards each other and then possibly into the servitude or in close proximity of the servitude. This could lead to health and safety impacts.
- The Heritage Park will be an eco-tourism destination, benefiting a whole community. Another three Transmission power lines alongside the existing one which already traverses the proposed HP might render the proposed game reserve unviable.

- The eastern route passes less villages, which is better from a health and safety perspective.
- All the options go through game reserves. Most of the game reserves in the western option have lines crossing them or running along the border. In the eastern option, the proposed Transmission power lines should run along the border of game farms or existing infrastructure.
- Running the line in the eastern corridor will also not affect the landing strip.
- To decrease risk, it is not preferable that Transmission power lines cross over each other. It is therefore proposed that the Transmission power lines cross over to the eastern option at point C on the map. In this way the existing Transmission power line will be crossed once, and run alongside an existing dirt road and cultivated land instead of game farms. An estimate of three game farms will be affected in the eastern route.
- There is enough space to the south of Swartklip mine town, and should town development happen here, it will be controlled.

4.2.2. ***Options south of Spitskop***

It is proposed that the 2x400kV Transmission power lines to Dinaledi follow the western option. This option follows an existing 400kV Transmission line, as well as road infrastructure. Villages are across the road and will in all probability develop towards each other across the road from the lines. For a great part of this route, the line passes right next to mining property.

The eastern option goes through pristine areas, not too close to existing villages. Bojating will probably develop into the eastern option, towards the road. In both cases, 2x400kV Transmission power lines will have to be crossed. Turning east, the options should pass well south of Bojating.

4.2.3. ***Options north of Dinaledi***

It is proposed that the 2x400kV Transmission power lines to Dinaledi follow the eastern option. This option will steer well clear of planned and existing developments in the area, as well as water pipelines and canals (see map). Although it passes close to mining activities in the south, it follows an existing line indicating that the interference with mining activities will probably be of low impact. This option also means less impact on land with high agricultural potential.

Should the western option be the overall preferred option; the crossover to the western option should be at point D on the map to avoid the area earmarked for future town development. It follows an existing line which passes a game reserve, and relocation of a small village of people will be necessary. This village has the character of an informal settlement with old and dilapidated houses as well as shacks. It is estimated that 50 people live in the village. It is highly likely that relocation will benefit the inhabitants of this village.

4.2.4. ***The route along the R511***

Another area of concern is the area marked 6 on the map. Here the proposed study corridor follows the R511; the northern side of the road has game reserves. From the north the order is: the Thaba Tolo Game Reserve, followed by Lankgewag and Uitspan. Lankgewag and Uitspan seem like low key game reserves. Thaba Tolo already has a Transmission power line along its border next to the road.

The southern side of the road has, from the north: cultivated land with some irrigation and the Tshokwane Game Reserve. There are two communication masts.

It is proposed that the route sticks to the southern side of the road to cross over to the northern side once it has passed Thaba Tolo. The irrigation will not be affected.

4.2.5. Upgrading of Spitskop and Dinaledi substations

The upgrading of the Spitskop substation will not impact significantly on people, tourism or land use activities. The upgrading of the Dinaledi substation will not impact significantly on people, tourism or land use activities. Existing infrastructure must be used as far as possible. Rehabilitation should be deemed acceptable by the ECO.

5. ENVIRONMENTAL MANAGEMENT PLAN INPUT

The EMP provides guidelines to the contractor regarding the environment and supplements Eskom's specification on Transmission power line towers and line construction. The objective of the EMP is to ensure that[11]:

- Environmental management considerations are implemented from the start of the project.
- Precautions against damage and claims arising from damage are taken timeously.
- The completion date of the contract is not delayed due to problems with land owners arising during the course of construction.

To ensure the effective implementation of the EMP requirements, an Environmental Control Officer (ECO) is appointed on site. The ECO is a representative from Eskom and has to maintain the following reporting systems on site:

- A complaints register should be kept.
- A weekly report including feedback from stakeholders should be submitted to the environmental manager.
- A monthly report including feedback from stakeholders should be submitted to the project manager.
- All non performances (ito the EMP) should be recorded.
- The ECO should ensure that agreements between land owners, the contractor and Eskom are formalised and filed.
- The ECO should produce documentation containing information for each tower outlining design, property names, owners and contact details, special conditions, landscape and land use, vegetation control / conservation, activity (farming), houses on servitude, gate positions, bird guards, flappers and aircraft warning spheres, line crossings and access roads to towers and servitude.

In addition to ensuring that environmental impact mitigation measures are implemented on the construction site, the ECO is responsible for communicating construction related issues with land owners, land users and surrounding communities. The ECO is responsible to ensure that issues are addressed and that communication is effective. If the ECO cannot sort out problems with land owners, the assistance of the environmental manager or negotiator is called in to address the problem.

[11] Framework EMP for the proposed Majuba-Umfolozi 765kV Transmission power line, March 2006, prepared by BKS

In managing communication, it is important for the ECO to follow up immediately on problems and indicate how long it will take to sort out the problem reported. Their responsibilities regarding communication include the following:

- To inform land owners of the construction programme and when any changes occur in the programme.
- To explain the construction process to land owners.
- To address any complaints from land owners or land users.
- To ensure that land owners' contract conditions are honoured.
- To ensure contractors implement the EMP.
- To inform land users and affected communities on the construction process.
- To ensure land owners have the ECO contact details.

From a social perspective, it is recommended that the following mitigation measures be included in the EMP, and that the ECO be briefed in this regard[12].

5.1. Access Roads

- Signage must be used to indicate where and which construction activities are taking place.
- All gates should be locked and clearly marked. The land owner should have a key to the gate, as well as the contractor.
- Roads should be maintained.
- Speed limits should be adhered to.
- Rehabilitation of roads should happen after construction.
- Roads should be upgraded before construction should the condition of the roads be unable to handle the traffic load.
- Existing road infrastructure should be used as far as possible.

5.2. Claims for Damages

- All anticipated crop damage should be noted while access negotiations are underway.
- Any damage to commercial crops should be recorded immediately.
- The contractor is liable for all unnecessary damage to the environment and crops.
- All claims and complaints should be handled immediately.
- All agreements should be confirmed in writing.

5.3. Compensation and Negotiation

- Negotiation agreements should detail such aspects as the exact location and extent of the servitude, and access arrangements and maintenance responsibilities.

[12] This section informed by this report, Comparative Post-hoc Assessment completed by MasterQ Research, March 2007, Framework EMP for the proposed Majuba-Umfolozi 765kV Transmission power line, March 2006, prepared by BKS,

- Consult with Regions on bush clearance requirements before negotiations with land owners start. Ensure that Regions' requirements from land owners are addressed either by incorporating it in negotiations or raising the issue with land owners during negotiations.
- Ensure that land owners have the option to conduct negotiations in their own language.
- Ensure that negotiators record everything that is discussed with land owners.
- Should land owners negotiate to conduct certain construction activities such as bush clearance on their property, specifications on how these activities should be conducted, should be clearly stipulated in the contract with the land owner.
- Land owners should be provided with all the necessary information so that they could prepare themselves on what to expect during construction and be able to negotiate satisfactory conditions. Negotiation skills will be necessary throughout the process, even in the maintenance stage, and good preparation about rights will be of great assistance.
- The process should be conducted with the necessary respect, and the negotiator should be transparent about the process and expectations (do not engage in "empty promises"). Care should be taken to accommodate land owners who are not knowledgeable on the negotiation process and/or do not have the resources or capacity to make informed decisions.
- Land owners should be made aware that a pre- and post evaluation of their land value is possible.
- Ensure that relocation is properly explained to affected communities. Actively manage the relocation process by acquiring the relevant information prior to the start of construction.
- The process should be conducted with the necessary respect, and the negotiator should be transparent about the process and expectations (do not engage in "empty promises").
- Negotiations should preferably be done through an organised group or formal structures to ensure that land owners are protected.
- Land owners should be compensated for the loss of cultivated land.
- Upon agreement between the land owner and Eskom, land owners should be compensated for the permanent loss of portions of the land that is unreachable due to the presence of the pylon(s) and servitude.
- Address land loss issues (at towers) with tribal authorities during negotiations to ensure that land users on tribal land are compensated (either with provision of additional land or financially) for land lost due to the construction of the power line.
- Ensure that compensation to game farmers for construction during hunting season is addressed in negotiations.
- Compensation for loss of income during operation should be measured and compensated for.
- Loss of livelihood should be assessed in its totality, including the potential loss of income as a result of loss of tourists as a result of the line. This includes compensation for loss of tourists during the construction process – the land owner may decide not to take any bookings during the construction period, and Eskom should compensate for it.
- Negotiators should only be allowed to negotiate construction of the line within the approved route corridor.
- The valuator should be experienced in valuating the land in question, e.g. game farms.
- Land owners should be allowed to get in an independent valuator.
- The negotiation should be done for the whole servitude and not part of the servitude.
- Land owners should be made aware that a pre- and post evaluation of their land value is possible.

- Payment to crop owners on traditional land: these farmers might not have a bank account and ways of payment should be negotiated up front.
- Should a power line negatively impact on the economic activities of property owners (e.g. game farming and eco-tourism), Eskom should take the issue of the total depreciation of the farm into account when compensation amounts are calculated.
- If necessary, mitigation measures should be implemented to avoid any negative impact on animals (e.g. fencing off the construction area).
- Where possible, pylons should be located on the border of the farmland to lessen the loss of grazing land.
- It is suggested that construction not take place during animal breeding months or during the main hunting seasons.
- Where possible, pylons should be located on the border of the game farms and away from capturing nets to lessen the potential impacts.
- Note: Some houses and lodges will be located in close proximity to the power lines. Although relocation will not be necessary for these owners, Eskom negotiators should expect requests for compensation and/or relocation from the owners of these properties as the impact of three and four Transmission power lines close to the place called "home" could be highly significant.

5.4. CONSTRUCTION PLANNING

- The land owner should be informed about the project plan.
- Changes to the plan should be communicated timeously.
- A Fire Management Plan should be in place.
- Existing access roads should be used.
- Access roads should be planned with the land owner.
- Eskom or its appointed contractor(s) should assist with the temporary relocation of livestock.

5.5. CONSTRUCTION SITE

- Prevent cattle movement through the site by erecting a fence around the site.
- Construction activities are limited to the area as demarcated by Eskom and shown on the site plans.
- Refuse on site should be discarded in sealed bins and/or covered skips. Refuse should be removed from the site on regular intervals (at least once a week) and disposed of at an approved waste disposal site.
- The construction site shall have the necessary ablution facilities, i.e. chemical toilets if such facilities are not available on site at commencement of construction. The Contractor shall supply a wastewater management system that will comply with legal requirements and be acceptable to Eskom.

5.6. CONSTRUCTION VILLAGES

- Proper management plans for construction villages should be developed and implemented, which should include but is not limited to:
  - Controlled access;
  - Sufficient portable chemical toilets on site and at the construction village;

- Refuse on site should be discarded in sealed bins and/or covered skips. Refuse should be removed from the site on regular intervals (at least once a week) and disposed of at an approved waste disposal site; and
- Construction village rules ("house rules") that aims to control noise levels, conduct, etc.

- A demobilisation plan should be developed and implemented to ensure that construction workers move out of the area upon completion of the construction phase.
- Keep stakeholders informed on in migration into an area.

5.7. EMPLOYMENT OPPORTUNITIES

- Maximise the use of local labour during construction.
- Specify the proportion of local labour to be used in the construction of a high voltage Transmission power line. Based on the maximum proportion of local labour recorded in different teams, as well as feedback from contractors, at least up to 40% of the labour force could be made up of local labour.
- Specify the proportion of women to be employed for construction. At least 25% of local labour employed should be women.
- Consider making use of the local trade unions, if available, to enhance the recruitment process.
- Food vendors should register with the project to prevent unwanted loitering outside the construction village and/or site.
- Indirect job opportunities should also be offered to the local community, e.g. by employing local domestic workers.
- Local steering committees can be used to identify local people for employment. A local person can be identified in the local community – this could happen through the Department of Labour – and this person establishes a steering committee. The contractors communicate their needs to the steering committee that compile a list of people that are available for employment. Alternatively, the Unions can be asked for assistance, or the Local Economic Development Forum.
- Local leaders should be made aware that only **limited** job opportunities will be created.
- The local leaders should also be informed about the nature of a linear project, and that labourers will probably move along the route as construction progresses. Labourers may choose to terminate employment is they moved away from home too far, and transport becomes too expensive or a problem. This will then afford opportunities to other communities.
- The potential employee should undergo induction training about the site rules and regulations. Should the applicant agree to these rules, a contract is signed with him.
- Individuals with the potential to develop their skills should be afforded training opportunities. Eskom should be involved in this process.
- Mechanisms should be developed to provide alternative solutions for creating job security upon completion of the project. This could include formal and/or informal training on how to look for alternative employment, information on career progression, etc. to ensure that people are equipped to seek other jobs with the skills that they have gained.
- Develop a procurement policy that is easy to understand and ensure that local subcontractors also comply with the procurement policy and any other applicable policies.
- Ensure that local subcontractors receive the necessary support in terms of resources.
- Agree on specific performance criteria prior to appointment.
- Identify the segment that might benefit from informal indirect opportunities, and consider assisting them with skills development and subsidising initiatives that are sustainable.

- Encourage construction and maintenance workers to use local services.
- Preferably, house construction workers in local communities.
- Should an international contractor be used, the SIA should be extended to address the potential social impacts.

5.8. FIRE PREVENTION

- No open fires shall be allowed on site under any circumstance. The Contractor must have fire-fighting equipment available on all on site vehicles, especially during the winter months.
- A Fire Management Plan should be in place and should be drafted with the municipalities, land owners, Eskom and contractors.
- An emergency plan should be developed outlining standard operating procedures in the event of fire or other mechanical breakdowns. The community should be aware of who to contact in the event of an emergency.

5.9. HEALTH AND SAFETY

- An aggressive STI and HIV/AIDS awareness campaign should be launched, which is not only directed at construction workers but also at the community as a whole.
- Condoms should be distributed by placing them at centrally located points and by ensuring that construction workers and community members are aware of the availability and location of condoms. The distribution of condoms should be approached with the necessary cultural sensitivity.
- Access at the construction site should be controlled to prevent sex workers from either visiting and/or loiter at the construction village.
- Local women should be empowered. This could be achieved by employing them to work on the project, which in turn would decrease their (financial) vulnerability.
- Regular leave should be given to contractors.
- Clinic on site/close to a site.
- Also focus training on local community. Include training with women focus on family planning, gender relations.
- Provide entertainment to workers.
- Construction workers should be clearly identifiable. Overalls should have the logo of the construction company on it and/or construction workers should wear identification cards.
- Educate communities surrounding the high voltage Transmission power line on the legislation regarding their conduct around the power line. Also explain the presence of electric magnetic fields and mitigation of health potential health impacts as a result of the power line.
- Provide a safe passage way for community members to minimise the impact on movement patterns.
- Fence off the construction site to prohibited unauthorised access by community members, thereby placing themselves in potential unnecessary danger.
- Community awareness on the safety mechanisms of a Transmission power line and potential dangers.
- 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?
- 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.

- Traffic: keep to speed limits, keep to authorised roads, use signage to warn people about traffic movements.
- Educate surrounding communities about the dangers of living in the servitude.
- A form of signage on the pylons 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 should take responsibility to move people out of the servitude. Educate surrounding communities about the dangers of living in the servitude. The use of signage on the pylons to indicate that it is dangerous should be considered.
- In some way a barrier (psychological and/or physical should indicate that no structures should be built in the servitude.
- Eskom together with municipalities should make decisions about whose responsibility it is to move people out of the servitude.

5.10. POLLUTION

- Construction activities should be restricted to daytime hours between 07:00 and 19:00.
- Adjacent property owners should be consulted and notified of any activities that could lead to excessive noise levels.
- Adjacent property owners should also be consulted beforehand if any night time construction activities were to take place.
- Construction villages should be located away from the local community to ensure that noise levels at the village do not affect the local community during the night time.
- Dust pollution could be restricted by the tarring of the access roads.
- If access roads are not tarred, it should be watered down regularly to compact the soil and restrict dust pollution to an extent.
- Residents should be consulted prior to activities that could cause large amounts of dust pollution.
- Fines should be implemented for littering.

5.11. PUBLIC RELATIONS

We propose the following;

- Intra-conflict:
  - Weekly forum meetings between contractors and construction workers to address any issues and/or concerns pro-actively.
  - Consider the use of a uniformed salary structure whilst construction workers are on site.
- Inter-conflict:
  - Ensure that a transparent recruitment process takes place prior to construction.
- Assist with the temporary relocation of livestock.
- Land should be rehabilitated upon completion of the construction activities before the land is handed back to the land owner.
- Ensure that rules and expectations from local communities surrounding the site and at construction camps on how construction workers are to behave are identified and communicated to them. A ‘community watch’ could be identified and empowered to report issues regarding construction workers’ conduct to Eskom.

- Ensure that Eskom employees are aware of their responsibility in terms of Eskom's relationship with land owners and communities surrounding power lines. Implement an awareness drive to relevant sections to focus on respect, adequate communication and the 'good neighbour principle'.

5.12. SAFETY AND SECURITY

- No camping should be allowed on any private property. If the Contractor wants to leave guards on site, it should only be done with the written consent of the Land owners involved.

6. SOURCES CONSULTED

Municipal Documents

Lephalale IDP 2005 / 2006

Madibeng LM IDP Analysis

Rustenburg LM IDP 2002 / 2003

Thabazimbi IDP

Other documents/sources

Interview with Pat King, 15/02/2007, Royal Bafokeng.

MasterQ Research, 2007. Comparative Post-hoc Assessment completed for Eskom for the Matimba TI Project. Main researcher: Suzanne Wessels.

All sources listed in the Comparative Post-hoc Assessment, MasterQ Research, 2007.

All documents listed in the footnotes of this document.

MasterQ Research, 2007. Socio-economic survey completed for Eskom for the Matimba TI Project.

MATIMBA B - MARANG 2 x 400kV / DINALEDI 400kV

Transmission Line EIA

SOCIAL AND TOURISM

MAP DATE: 27 March 2007

10 0 10 20 30 Kilometers

LEGEND

- Sub Stations
- Schools
- Health Care Facilities
- Buildings
- Railway Stations
- Urban / Built-up areas

Roads
- National Road
- Main and Arterial Road
- Secondary Road
- Streets and Other Access Roads
- Tracks and Footpaths
- Railway Line

Rivers
- Perennial Rivers

Proposed Alternative Alignments for Transmission Line
- Matimba - Marang Option
- Matimba - Marang5 km wide corridor
- Matimba - Dinaledi Option
- Matimba - Dinaledi 5 km wide corridor

Eskom MTS lines
- 400kV
- 275kV
- 132kV
- 88kV
- Study Area
- Provincial Boundaries
- Nature Reserves
- Main Farm Boundaries
- Perennial Dams and Wetlands

Data collected during field trip, landcover data
- Centre Pivots
- Cultivated, commercial, irrigated
- Cultivated, commercial, dryland
- Mines & Quarries
- Urban / Built-up (residential)
- Urban / Built-up, (industrial)
- Future Residential
- Future Mining
- Tribal Authorities
- 1 Scattered Residential
- Degraded areas: mostly stock breeding
- Natural areas : mostly Game Farming
- Tourism Route
- Mining properties

Data captured by GPS
- Landing Strip
- Cell Phone Towers
- Possible Relocation
- Mining
- Tour Operators
- Tourism (Sightseeing, restaurants etc.)

Data digitised from SG 1:50 000 tiffs
- Golf Course
- Grave
- Kraal
- Murasie/Ruin

MAP SCALE: 1:225 000 (A0)
PROJECTION: WGS84, Lo27

MAP DATE: 27 March 2007.
MAP VERSION: 3
SOFTWARE: ArcView3.2, ArcGIS9
SOURCES: SG; SA Explorer; STATSSA; ESKOM
CREATED BY:
GIS Corporation

Margen INDUSTRIAL SERVICES
pba
GIS Corporation

MATIMBA
MATIMBA B
LEPHALALE
ELLISRAS
MARAKELE NATIONAL PARK
ATHERSTONE NATURE RESERVE
BON ACCORD NATURE RESERVE
THARAZIMBI
PILANSBERG MADIKWE CORRIDOR
MADELENE ROBINSON NATURE AREA
PILANSBERG NATURE RESERVE
MAGALIESBURG NATURE RESERVE
RUSTENBURG NATURE RESERVE
VAALKOP DAM NATURE RESERVE
BORAKALALO NATIONAL PARK
ONDERSTEPOORT NATURE RESERVE
DWAALBOOM
SWARTKLIP MINE TOWN
SPITSKOP
NORTHAM
AMANDELBULT MINE TOWN
DINALEDI
MARANG
TRIDENT
BIGHORN
ARARAT
RUSTENBURG
BOJATING
RAMOKOKASTAD
MOGWASE
KOEDOESPRUIT
WILGESPRUIT
MOOIKWE
BARBEBA
BETHANIE
HARTBEESTFONTEIN
MOGOND
MOOINDOI
BAPONG BRITS
BRITS
SONOP
KOSMOS
IFAFI
MEERHOF
PECANWOOD
EAGLES LANDING
MELODY
AKASIA
MAKAPANSTAD
LEEUPOORT
ROOIBERG
WEST
MIDDLE
EAST
A
B
C
D
1
2
3
4
5
6
7
8
9
10

APPENDIX B

Impact Assessment Criteria

These criteria are drawn from the EIA Regulations, published by the Department of Environmental Affairs and Tourism (April 1998) in terms of the Environmental Conservation Act No. 73 of 1989. These criteria include:

METHODOLOGY TO ASSESS IMPACTS

Impact assessment must take account of the nature, scale and duration of effects on the environment whether such effects are positive (beneficial) or negative (detrimental). Each issue / impact is also assessed according to the project stages from planning, through construction and operation to the decommissioning phase. Where necessary, the proposal for mitigation or optimisation of an impact is noted. A brief discussion of the impact and the rationale behind the assessment of its significance has also been included.

RATING SYSTEM USED TO CLASSIFY IMPACTS

The rating system is applied to the potential impact on the receiving environment and includes an objective evaluation of the mitigation of the impact.

Extent (distribution)	National 4	Regional 3	Local 2	Site 1
Duration (Time Period of Impact)	Permanent 4	Long-term 3	Medium-term 2	Short-term 1
Intensity	Very High 4	High 3	Moderate 2	Low 1
Probability of occurrence	Definite 4	Highly Probable 3	Possible 2	Improbable 1

Table 1: Criteria for the classification of environmental impacts[1]

CATEGORY	DESCRIPTION OF DEFINITION
Nature	A brief written statement of the environmental aspect being impacted upon by a particular action or activity.
Extent (Scale) • Site • Local • Regional • National	 • Within the construction site. • Within a radius of 2 km of the construction site • Provincial (and parts of neighbouring provinces). • The whole of South Africa.
Duration • Short-term • Medium-term • Long-term • Permanent	Indicates what the lifetime of the impact will be. • The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase • The impact will last for the period of the construction phase, where after it will be entirely negated • The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter • The only class of impact which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient
Intensity • Low • Medium • High	Describes whether an impact is destructive or benign. • Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected • Effected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way • Natural, cultural and social functions and processes are altered to extent that they temporarily cease

[1] Criteria for the classification of impacts are as per the EIA Regulations Guideline Document, published by the National Department of Environmental Affairs and Tourism in April 1998.

CATEGORY	DESCRIPTION OF DEFINITION
• Very high	• Natural, cultural and social functions and processes are altered to extent that they permanently cease
Probability	Describes the likelihood of an impact actually occurring.
• Improbable	• Likelihood of the impact materialising is very low
• Possible	• The impact may occur
• Highly probable	• Most likely that the impact will occur
• Definite	• Impact will certainly occur

Significance

Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

Table 2: Criteria for the rating of classified impacts environmental impacts

Significance	Using the scoring in Table 1, the significance of impacts is rated as follows.
• Low impact	• A low impact has no permanent impact of significance. Mitigatory measures are feasible and are readily inistituted as part of a standing design, construction or operating procedure
• Medium impact •	• Mitigation is possible with additional design and construction inputs
• High impact	• The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment
• Very high impact	• Permanent and important impacts. The design of the site may be affected. Intensive remediation os needed during construction and/or operational phases. Any activity which results in a “very high impact” is likely to be a fatal flaw.

Status • Positive (+) • Negative (-) • Neutral	Denotes the perceived effect of the impact on the affected area. • Beneficial impact. • Deleterious or adverse impact. • Impact is neither beneficial nor adverse. • It is important to note that the status of an impact is assigned based on the *status quo* – i.e. should the project not proceed. Therefore not all negative impacts are equally significant.

The suitability and feasibility of all proposed mitigation measures will be included in the assessment of significant impacts. This will be achieved through the comparison of the significance of the impact before and after the proposed mitigation measure is implemented. Accumulative Impacts will be evaluated and assessed in a separate chapter.