

Distribution environmental screening document (DESD)
Reticulation Powerlines and Ancillary Services

Ratified and accepted by
Environmental Practitioner
Environmental Specialist
Head of Engineering Survey
(one signature please)

Accepted by Land Owner/s/Users
I have seen the completed document and accept the recommendations made.

Assessor/s

Form completed by: [Thabelo Mugwedi](#) Signature:

In consultation with: [Eliphus Lehloka \(0735149141\)](#)

Signature:
CAPACITY (e.g. land owner, specialist): [Survey technician](#)

Date: 06 September 2020

Instructions

1. Fill the report in as neatly and completely as possible.
2. Where the question / statement is not applicable mark N/A.
3. The form must be completed in consultation with someone who knows the area well and who can also predict if any future development is envisaged (e.g. a land owner, land user, specialist, etc.).
4. Indicate sensitive areas on a map and/or spanning plans.
5. When in doubt, consult the Environmental Practitioner in your region.

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The purpose of this *DESD* is to:

1. Determine whether the project should be subject to R982, R983, R984 published in terms of the National Environmental Management Act No. 107 of 1998:EIA Regulations of June 2014 as amended.
 2. To determine whether the project is subject to further licensing like the National Water Act 36 of 1998 Section 21: water use licence.
 3. Identify and firstly avoid or secondly mitigate the negative impact of Eskom’s activities in line with both Legislation and Eskom’s Environmental Policies.
 4. Guide route selection, construction and maintenance of this power line.
- **NOTE Complete the report before the survey!!!**
 - **This is not an office exercise.**
 - **Extra sheets of paper may be added and referenced if insufficient space has been provided.**
 - **This document is only valid for three (3) years from this document date.**

Methodology

- ❖ *A GIS Desktop study and research on environmental aspects in the Bethlehem area was done.*
- ❖ *A site visit to the area under study was conducted.*
- ❖ *The portions of the proposed route where access was possible were screened physically during the site visit.*
- ❖ *Consultation with the CNC feeder custodian regarding environmental aspects on his property was made.*

1. Project description

Project name/Survey: SVR cable reroute

Area Bethlehem.....

Project number File number

Rural scheme/

Feeder JUP 11kV line re-route

Voltage: 11Kv

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Supply from
(Scheme name, pole numbers for tee-off)

Total length of line....3761 m

Supply to
(Farm name, etc.)

2. Scope of Works

- ❖ Rebuild and reroute the portion of the JUP 11kV powerline that is currently deep in cultivation lands and change conductor.

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3. Brief description of the surrounding area

The study area is located within the Bethlehem area, Eastern Free State and falls under the Dihlabeng local municipality. The proposed study area falls between two permanent bodies of water that are stagnant. One side of the proposed area of construction of this powerline there is a pond and on another side, there is a large dam. The area is in a farming area and the farm is used for grazing of dairy cattle.

Physical environments

4.1 Water: streams rivers dams wetlands springs floodplains OTHER

Present condition:

The area where each of the proposed pole positions are planned to be planted falls within 500m of a wetland with some of the pole positions being inside the actual wetland. Most of the pole positions however are going to be planted in the cultivation fields. The proposed powerline on one section runs parallel with the large dam. There is a distance of close to 100m between the edge of the dam and the route of the powerline and in that space between the proposed powerline and the dam, there are numerous plants that are characterized with wetlands and areas of fresh water. It is characterized with vegetation growth, surface and sub-water systems related to the grassland vegetation region systems.

Potential impact (e.g. of erosion):

- ❖ Water bodies might be polluted by the leaking of oil from oil filled equipment and/or vehicles.
- ❖ Littering into the water bodies might take place during construction of the line.
- ❖ Water birds might collide with the power line which can lead to increase in bird mortality.

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❖ Affecting the banks of water bodies and natural flow of water can occur as well as building within wetlands, which can trigger the need for a water use license if activities listed under section 21 of the National water act 36 of 1998 are carried out. The relevant activities include:

(i) Altering the bed, banks, course or characteristics of a watercourse

Continuing without a general authorization water use license will lead to a legal contravention.

Mitigation measures:

- ❖ No vehicles or construction trucks should be driven over natural streams and channels.
- ❖ Vegetation of riparian habitat should not be removed
- ❖ Vehicles and oil containing equipment should be serviced to avoid oil contamination of water during construction and maintenance of the powerline.
- ❖ All stationary vehicles must have drip trays placed underneath the oil sump area to monitor defectiveness.
- ❖ Ensure that Water bodies that serve as drinking water sources for animals are not polluted and impacted on by construction vehicles and other human activities.
- ❖ Vehicles must not be serviced in the wetland area.

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- ❖ **Install bird flappers on the entire line to reduce the likelihood of collisions from water birds.**
 - ❖ **Ensure that a General Authorization (GA) is in place and granted by DWS for the proposed powerline before construction can take place.**

4.2 Soil: sandy rocky clayey OTHER...Loam soil.

Present condition:

The soil is mainly a mix of clay and loam in the area and the plain is undulating. The soil is also high in fertility and has a favorable wetness.

Potential impact (e.g. of erosion):

- ❖ The **loss of highly organic top soil** might occur due to the clearance of vegetation for the cable installation and other construction processes.
- ❖ **The pollution of land and soil** may occur out of oil leaks from construction vehicles and oil filled equipment.
- ❖ **Littering**, this is a contravention of **section 26, 27 of the NEMA: Waste Act 59 of 2008**, which prohibits the unauthorized disposal of waste and littering, might take place during the project.
- ❖ Removing excessive vegetation will **increase the risk of erosion** in the area.
- ❖ Increase of soil sediment loads and dust generation and transportation into the wetlands
- ❖ The driving of heavy vehicles in the area might **compact soil to be impermeable which can lead to bare soil exposure.**

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Comments/ Mitigating measures:

- ❖ Minimal vegetation removal should take place during site clearance for construction.
- ❖ Soil should be re-deposited in the same order as it is excavated where practicably possible, in order to retain the fertile top soil.
- ❖ Soil stockpiles should be kept in a safe place for re-use and re-filling of trench. These stockpiles should be secured by packing or covering them with bricks or any other method that would prevent wind or water erosion.
- ❖ Vehicles and equipment to be used on site should be serviced regularly to avoid oil leaks.
- ❖ **No littering** should take place and all waste should be cleaned up and removed from site at end of working day during construction and site rehabilitation.
- ❖ **Compaction** should occur according to the type of soil found at excavation.
- ❖ Should signs of erosion appear then the area should be **rehabilitated immediately**.
- ❖ **Ripping of soil around damaged areas** should take place following construction.

4.3.Topography mountains ridges hills valleys ravines dongas OTHER

Present condition:

The proposed line traverse over a hill where excavations are being made for gravel material for road construction in the area (See figure 5).

Potential impact (e.g. of erosion):

- ❖ Potential soil erosion by means of water, wind and other means may take place in the area as excavation and traffic increase is going to take place.

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- ❖ Construction vehicles and activities de-compacts the soil and increase its porosity and the infiltration of water, which will ultimately decrease the run-off of water to other parts of the area.

Comments/mitigating measures:

- ❖ The current vegetation should be left as far as possible in its original state.
- ❖ The creation of multiple access routes to the construction point should be avoided.
- ❖ Vehicles must be driven at a moderate speed (max 60km/h) and steep slopes should be avoided as far as possible.
- ❖ Soil stockpiles should be kept in a place where it cannot be eroded away in order to preserve top soil by covering it up with stones or other construction materials.
- ❖ The existing trench should be reused as far as possible.

Figure 1: The proposed

4. Natural environment

5.1 Flora: **indigenous** protected **exotic** OTHER

Brief description and conservation status (e.g. rare, etc., mention trees/bush/grass) ...

The proposed project is located in Highveld grassland group is evident in the area with a presence of numerous geophytes and a diversity of flowering plants besides grasses. A low frequency of Themeda thiandra and related grasses present. The vegetation type is also associated with intact, healthy

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wetlands and river ecosystems. There area also a few weeping willows that flows the flow of the water body close to some of the poles of the proposed powerline. Majority of the vegetation along the route of the proposed powerline was however, grass (weeds) in maizemeal fields.

Potential impact (e.g. permit applications)

- ❖ Construction processes and vehicular movement might disturb vegetation. .
- ❖ Veld fires may also pose a risk of vegetation disturbance.
- ❖ The acceleration of soil erosion might occur due to the removal of vegetation.
- ❖ Trees might be cut and removed without the land owner's consent
- ❖ Birds that nest in trees might lose habitat due to removal of trees.
- ❖ Tree debris and other vegetation waste might be left on the property and lead to land owner complaint and alien invasive species might propagate to inappropriate locations.
- ❖ Fuel leaks and excessive dust particles falling on the land might affect the land ability to revegetate.
- ❖ Siltation and sedimentation into the wetland might affect the potential for hydrophytes

Comments/ mitigating measure:

- ❖ Minimal removal of vegetation.
- ❖ No fires should be started in the open grasslands.
- ❖ Use existing roads and tracks and drive with the speed limit of 60km/h on gravel roads according to Eskom rules.
- ❖ Vehicles and equipment must be regularly serviced to avoid chemical fluid leaks in the veld.
- ❖ Refrain from littering and/or the burning of waste at all times.

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- ❖ Consult with land owner before the removal or cutting of trees on their property.
- ❖ Clean up and remove all debris and vegetation waste generated from the bush clearance.
- ❖ Separate the first 10cm of soil, as fertile topsoil, from the subsoil layers where practicably possible
- ❖ Do not establish soil stockpiles inside water bodies.
- ❖ Secure the stockpiles with materials for it not to erode into surrounding areas
- ❖ Remove excessive soil from the site and rip the soil for revegetation to take place. Continue to rewet the area after ripping and monitor vegetation growth.
- ❖ Vegetation management should be done in accordance with the **CONTRACT SPECIFICATION FOR VEGETATION MANAGEMENT SERVICES ON ESKOM NETWORKS (DST-240-52456757)**.

5.2 Fauna: **mammals** **birds** OTHER

Brief description and conservation status:

The primary grassland and wetland area create a large variety of important habitat for small mammals **rats, moles** etc. The bird species that were observed on the date of the site visit were mainly geese with the spur winged goose being the most common. . There are also **CATTLE** farming in the area as the entire farm where the proposed route will be is in a dairy farm.

Potential impact (e.g. threat of electrocution, collision, etc.)

- ❖ There is a possible disturbance of natural habitat for birds and small mammals.

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- ❖ Poaching might take place.
 - ❖ The loss of livestock due to vehicle accidents involving wild animals might occur.
 - ❖ Bird nests might be damaged which leads to destruction of habitat.
 - ❖ Bird and power line collision incidents

Comments/mitigating measures:

- ❖ Minimal vegetation clearance in this area should take place.
- ❖ No poaching of birds and wild animals should take place.
- ❖ The land owner must be informed of when construction is going to commence in order for him to relocate their livestock to another camp.
- ❖ **Property gates** should be opened and closed according to the landowner's request.
- ❖ No animal on the properties should be disturbed.
- ❖ Do not disturb the bird nests found in the sweet thorn trees and where they occur on the proposed site.
- ❖ No fires should be started on any Eskom construction site.
- ❖ Vehicles should be driven at a speed limit of **60km/h on a gravel road** according to Eskom rules.
- ❖ Employees who are going to work on site during construction and maintenance of the cable should **always consult with the landowner before doing so.**
- ❖ Construction must take place during normal working hours.

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5. Social environments

6.1 Restricted areas:	nature/game reserves	hiking trails	tourism routes	parks	recreational areas
residential-areas	green belts	sacred/holy grounds	OTHER ...		

Brief description

There is a farmhouse in close proximity to the route of the proposed powerline. The line however does not traverse this farmhouse.

Potential impact e.g. threat of encroachment, etc.:

- ❖ There is a risk of noise pollution and dust that can cause a disturbance of the household members in the residential area and to occupants on municipal land.
- ❖ A safety risk, in terms of vehicle accidents, is posed to farming community members, especially workers walking to and from the farm.

Comments/ Mitigating measures:

- ❖ The construction site must be clearly barricaded to avoid injury to farm occupants.
- ❖ Vehicles must drive at a moderate speed.
- ❖ Construction must take place during the day to avoid disturbance of residents at night.
- ❖ The occupants of the farm should not be engaged by contractor workers, unnecessarily.

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6.2 Visual aesthetics: easily seen **hidden** Partially.....
..

Brief description:

The proposed power line will be visible over the plain close to the gravel road leading up to the farm. The proposed line will then be hidden behind three existing lines for the rest of the route next to a fence.

Potential impact:

No visual and aesthetic impact foreseen

Comments/ Mitigating measures:

- ❖ The power line must be aligned along the fences and close to existing infrastructure

6.3 Sensitive areas: historical sites archaeological landmarks monuments ruins natural heritage sites
OTHER **Paleontological sites...**

Present condition:

The paleontology sensitivity map on the SAHRA GIS system indicates that the sensitivity ranges from moderate to high on the proposed site.

Potential impact:

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Unlawfull disturbance or collection of fossils and paleontological assemblages might take place during construction.

Comments/mitigating a measure:

- ❖ Field assessment based on the findings of a desktop study for paleontological finds must be carried out prior to construction.
- ❖ **SAHRA must provide permission for construction to continue.**
- ❖ Should fossil remains be discovered during construction, on the exposed surface or be exposed by excavations, The Environmental Officer must be contacted immediately.
- ❖ The exposed fossil remains should be protected (in situ) while the EO alert SAHRA (South African Heritage Resources Agency).
- ❖ A Professional paleontologist should be appointed for appropriate mitigation to be followed.

6. Economic environments

7.1 Land use: crops orchards **grazing** crop spraying
game farming forestry areas mining OTHER

Brief description:

The study area is mainly covered by Highveld grassland and its associated trees like ash tree and sweet thorn trees. There is cattle farming activities in the area and open spaces are used for grazing land.

Potential impact:

- ❖ Grazing cattle and other animals in the area might be disturbed and/ or pouched on during construction.

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- ❖ Potential land pollution might have a negative impact on productivity in terms of grazing land and crops.
 - ❖ Potential of water pollution might affect grazing land produce negatively due to the contamination of underground/ seepage flow of water.
 - ❖ Legal contravention due to illegal mining of gravel at registered burrow pit.

Comments/ Mitigating measures:

- ❖ Minimal removal of vegetation should take place.
- ❖ Littering and land pollution must be prevented at all times.
- ❖ Livestock should not be disturbed and vehicles must drive at a moderate speed which is max 60km/h on gravel roads according to Eskom rules.
- ❖ Inform the land owners of when construction is going to commence.
- ❖ Keep waste disposal bins on site at all times.
- ❖ No vehicle must be serviced on site

7.1.1 Commercial: factories shops OTHER

Brief description:

N/A

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Potential impact:

❖ N/A

Comments/ Mitigating measures:

❖ N/A

7.1.2 Infrastructure: roads railways communications power lines air fields
 pipelines sewage OTHER

Brief description:

There are currently 11kV powerlines that are running in the farm which the proposed powerline will be traversing at various areas. There is also a gravel road that is used to access the farm house as well as the various areas of the farm.

Potential impact:

❖ Gravel roads might deteriorate due to erosion caused by the traffic increase on it.

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- ❖ The existing power lines might be damaged due to construction activities.
 - ❖ The risk of encroaching into line clearances during construction

Comments/mitigating measures:

- ❖ Comply with way leave conditions and landowners requests to promote healthy relationships with customers and stakeholders.
- ❖ Use existing access roads to access the site.
- ❖ Do not drive more than 60km/h on gravel roads.
- ❖ Do not remove vegetation next to the gravel road.
- ❖ Maintain the gravel road during construction if severe erosion takes place.
- ❖ Rehabilitate the gravel road close to its original state before leaving the construction site.
- ❖ Do not litter and/ or pollute on site.
- ❖ Adhere to Eskom safety standards when working within close proximity to powerlines already on the property.

8.1 Impact criteria

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The criterion below was used to assess the significance of the impacts. The significance ratings in relation to characteristics of powerline building activities are determined. These ratings are defined in terms of the magnitude, Likelihood, Business risks, Regulatory scrutiny and Stakeholder interest.

LIKELIHOOD	MAGNITUDE
<p>High (3):</p> <p>Routine or ongoing activity or impact. Is known to have occurred on routine basis in the past. Impacts associated with the aspects are likely to emerge soon. Impacts are known.</p> <p>Medium (2):</p> <p>Periodically occurs once or twice a year. Impacts that are likely to occur within one year.</p> <p>Low (1):</p> <p>Very infrequent, every several years. Impacts associated with the aspects are several years away</p>	<p>High (3):</p> <p>Aspect has a recognized global environmental impact. Widespread or permanent ecological damage locally. Remediation would take longer than one year. Could result in a major public health hazard.</p> <p>Medium (2):</p> <p>Aspect could result in a major uncontained or sustained environmental release impacting on a regional or local environment only. Ecological damage can be remedied within one year. Health hazard to humans in the immediate vicinity, but not resulting in .critical or fatal.</p> <p>Low (1):</p> <p>Little or no ecological effect and no measurable impact on human health.</p>

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BUSINESS RISK/ BENEFITS	REGULATORY SCRUTINY	STAKEHOLDER INTEREST
<p>High (3):</p> <p>Aspect poses significant risk. Early response necessary. Industrial initiatives underway/developed. May have major impact on competitive position. May have a significant impact on value of Eskom's assets.</p> <p>Medium (2):</p> <p>Aspect is likely to pose risk.</p> <p>Low (1):</p> <p>Aspect does not pose significant risk. No need for early response. No industry initiative associated with aspect. Does not threaten competitive position. Does not affect values of Eskom assets</p>	<p>High (3):</p> <p>Regulated by Legislation. High potential for regulatory action or limitations to operate (subject to regulatory inspections & historical compliance problems)</p> <p>Medium (2):</p> <p>Regulated & Legislated, however not a priority in terms of enforcement</p> <p>Low (1):</p> <p>Relatively unimportant, Little or no potential for regulatory action (e.g. not regulated; not a target of enforcement).</p>	<p>High (3):</p> <p>Very important to public and customers. Aspect has the potential to cause damage to corporate reputation. Ongoing dialogue has begun; negative perception, possibility for third party lawsuits. Customers expect superior performance by Eskom in managing this aspect.</p> <p>Medium (2):</p> <p>Important to the public and customers. The aspect is likely to cause damage to corporate reputation.</p> <p>Low (1):</p> <p>Relatively unimportant; the public is unaware or is aware but it is not an issue. No threat to corporate image. It is not an issue with customers.</p>

SIGNIFICANCE OF THE IMPACTS:

The significance of the unmanaged and managed impacts has been assessed through consideration of the likelihood of the impact occurring, the magnitude over which the impact will be experienced, and the level of business risk, regulatory scrutiny and stakeholders interest the impact will have on the environment.

The formula for calculating the significant environmental impacts score is:

(Likelihood X Magnitude)

+ Regulatory scrutiny

+ Stakeholder interest

+ Business risk/benefit

The significant rating, as determined by the Operating unit, is as follows:

- 0 – 5: Low
- 6 -10: Medium
- 11 – 18: High

Impacts with a value greater than or equal to 11 will be considered as significant.

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ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

Environmental awareness training

Impact management outcome: All onsite staff are aware and understands the individual responsibilities in terms of this EMP.

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Untrained workers	Pollution Degradation Legal contravention	High	<ul style="list-style-type: none"> ❖ All staff must receive environmental awareness training prior to commencement of the activities; ❖ The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course; ❖ Refresher environmental awareness training is available as and when required; ❖ All staff are aware of the conditions and controls linked to the EA and within the EMP and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMP; ❖ The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: <ul style="list-style-type: none"> a) Safety notifications; and b) No littering. ❖ Environmental awareness training must include as a minimum the following: <ul style="list-style-type: none"> a) Description of significant environmental impacts, actual or potential, related to their work activities b) Mitigation measures to be implemented when carrying out specific activities; 	Low	Contractor Environmental Officer	Lecture and demonstrations	Pre-project	Eskom Environmental Officer	Once-off	Attendance registers

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			<p>c) Emergency preparedness and response procedures; d) Emergency procedures; e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures; g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures; j) Fire prevention; and k) Disease prevention.</p> <ul style="list-style-type: none"> ❖ A record of all environmental awareness training courses undertaken as part of the EMP must be available; ❖ Educate workers on the dangers of open and/or unattended fires; ❖ A staff attendance register of all staff to have received environmental awareness training must be available. ❖ Course material must be available and presented in appropriate languages that all staff can understand. 							
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Site Establishment development

Impact management outcome: Impacts on the environment are minimised during site establishment and the development footprint are kept to demarcated development area.

Impact Assessment					Implementation			Monitoring		
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Site layout, Planning, Loss of topsoil, Site camp positioning and location	Pollution Degradation Legal contravention, Erosion	High	<ul style="list-style-type: none"> ❖ A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management; ❖ Location of camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through; ❖ Sites must be located where possible on previously disturbed areas; ❖ No construction camp and/or storage of material and equipment under the transmission line servitude. ❖ The camp must be fenced in accordance with the section on Fencing and gate 	Low	Contractor Project Manager	Execution of activities in accordance with the approved Method Statement.	Pre-project	Eskom Environmental Officer	Once-off	Daily/Weekly registers; photographs

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			installation; and ❖ The use of existing accommodation for contractor staff, where possible, is encouraged.							
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Access roads

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Contractor workers, Construction activities, Equipment	Unauthorised access to site, Injuries, Damages, general disturbance	Medium	<ul style="list-style-type: none"> ❖ An access agreement must be formalised and signed by the EPM, Contractor and landowner before commencing with the activities; ❖ All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition ❖ All contractors must be made aware of all these access routes. ❖ Any access route deviation from that in the 	Low	Eskom Project Manager	Lecture and demonstrations	Pre-project	Eskom Environmental Officer	Once-off	Signed-off access agreement

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			<p>written agreement must be closed and re-vegetated immediately, at the contractor's expense;</p> <ul style="list-style-type: none"> ❖ Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads; ❖ In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with section 4.9: photographic record; prior to use and the condition thereof agreed by the landowner, the EPM, and the contractor; ❖ Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands ❖ Access roads must only be developed on a pre-planned and approved roads. 							
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Water Supply Management

Impact management outcome: Undertake responsible water usage.

Impact Assessment					Implementation			Monitoring		
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Water	Water resource depletion	Medium	<p>Ensure water conservation is being practiced by:</p> <ul style="list-style-type: none"> ❖ Minimising water use during cleaning of equipment; ❖ Undertaking regular audits of water systems; and ❖ Including a discussion on water usage and conservation during environmental awareness training. ❖ The use of grey water is encouraged. 	Low	Eskom Project Manager	Written supply agreement will be entered into with a suitable supplier.	Duration of project	Eskom Environmental Officer	Once-off	Signed-off supply agreement

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Storm and waste water management

Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided.

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Contaminated water	Surface and underground water pollution, Loss of biodiversity	Medium	<ul style="list-style-type: none"> ❖ Runoff from the cement/ concrete mixing areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager; ❖ All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility; ❖ Natural storm water runoff not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the EEO; ❖ Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the EEO 	Low	Contractor Project Manager and Contractor Environmental Officer	As per approved Method Statement	Duration of construction	Eskom Environmental Officer	Daily/Weekly	Daily/Weekly registers; photographs; Approved Method Statement.

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Solid and hazardous waste management

Impact management outcome: *Wastes are appropriately stored, handled and safely disposed of at a recognised waste facility.*

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Waste	Surface and underground water pollution, Loss of biodiversity	Medium	<ul style="list-style-type: none"> ❖ All measures regarding waste management must be undertaken using an integrated waste management approach; ❖ Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided; ❖ A suitably positioned and clearly demarcated waste collection site must be identified and provided; ❖ The waste collection site must be maintained in a clean and orderly manner; ❖ Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal; ❖ Staff must be trained in waste segregation; ❖ Bins must be emptied regularly; ❖ General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company; ❖ Hazardous waste must be disposed of at a registered waste disposal site; ❖ Certificates of safe disposal for general, hazardous and recycled waste must be maintained. 	Low	Contractor Project Manager	Waste management done in accordance with the stated impact management actions, with emphasis on recycling where possible. Written agreements or approvals will be obtained for disposal of wastes at appropriate Licensed facilities.	Duration of construction	Eskom Environmental Officer	Daily/Weekly	Daily/Weekly registers and photographs; Training registers; Safe disposal certificates

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Protection of watercourses and natural channels

Impact management outcome: Pollution and contamination of the watercourse environment and or natural channel erosion is prevented.

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Construction equipment	<ul style="list-style-type: none"> ❖ Surface and underground water pollution. Loss of biodiversity. ❖ Altering of banks and beds of watercourses 	Medium	<ul style="list-style-type: none"> ❖ All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities; ❖ In the event of a spill, prompt action must be taken to clear the polluted or affected areas; ❖ Where possible, no development equipment must traverse any seasonal or permanent wetland ❖ There must not be any impact on the long term morphological dynamics of watercourses. 	Low	Contractor Project Manager	Water management must be done in accordance with the existing electrification EMP and stated impact management actions.	Duration of construction	Eskom Environmental Officer	ongoing	Daily/Weekly registers and photographs

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Protection of fauna

Impact management outcome: Disturbance to fauna, loss of biodiversity and habitat is minimised.

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Construction equipment and workers	<ul style="list-style-type: none"> ❖ Loss of fauna ❖ Disturbance of habitat ❖ Legal contravention 	Medium	<ul style="list-style-type: none"> ❖ No interference with livestock must occur without the site or adjacent landowners' written consent and with the landowner or a person representing the landowner being present; ❖ The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development program; ❖ Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present; ❖ Special recommendations of an avian specialist must be obtained, if required, and adhered to at all times to prevent unnecessary disturbance of birds; ❖ No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas; ❖ No deliberate or intentional killing of fauna is allowed; ❖ In areas where snakes are abundant, snake deterrents to be deployed to prevent snakes climbing onto or into infrastructure and being electrocuted, potentially also causing power outages; and ❖ No Threatened or Protected species (ToPs) and/or protected fauna as listed 	Low	Contractor Project Manager	Prohibiting any hunting or killing of faunal species through training program.	Duration of construction	Eskom Environmental Officer	Ongoing	Training

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according NEMBA (Act No. 10 of 2004) and relevant provincial ordinances may be removed and/or relocated without appropriate authorisations/permits

Safety of the public

Impact management outcome: All precautions are taken to minimise the risk of injury, harm or complaints.

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Construction equipment and workers	<ul style="list-style-type: none"> ❖ Injury and/or harm to public members. ❖ Damage to Eskom Image 	Medium	<ul style="list-style-type: none"> ❖ Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.; ❖ All unattended open excavations must be adequately fenced or demarcated; ❖ Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding; ❖ Ensure structures vulnerable to high winds are secured; <p>Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged</p>	Low	Contractor Project Manager and Health & Safety Officer	As per the Health & Safety Plan	Duration of construction	Health & Safety Officer	Daily/Weekly	Daily/Weekly registers and photographs. Approved Health and Safety Plan. Complaints and Incident register

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Sanitation

Impact management outcome: Clean and well maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Human waste	<ul style="list-style-type: none"> ❖ Human health risk ❖ Ecological impact 	Medium	<ul style="list-style-type: none"> ❖ Mobile chemical toilets are installed onsite if no other ablution facilities are available; ❖ The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances; ❖ Where mobile chemical toilets are required, the following must be ensured: <ul style="list-style-type: none"> a) Toilets are located no closer than 100 m to any watercourse or water body; b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMP; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards; g) A copy of the waste disposal certificates must be maintained. 	Low	Contractor Project Manager	Chemical toilets will be placed and maintained by a service provider in accordance with contract between contractor and the supplier.	Duration of construction	Eskom Environmental Officer and Health & Safety Officer	Daily/Weekly	Daily/Weekly registers; Copies of signed service certificates

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Prevention of disease

Impact Management outcome: All necessary precautions linked to the spread of disease are taken.

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Virus/ Disease	<ul style="list-style-type: none"> ❖ Human health risk ❖ Ecological impact 	Medium	<ul style="list-style-type: none"> ❖ Undertake environmentally-friendly pest control in the camp area; ❖ Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS; ❖ The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area; ❖ Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable; ❖ Free condoms must be made available to all staff on site at central points; ❖ Medical support must be made available; ❖ Provide access to Voluntary HIV Testing and Counselling Services. 	Low	Contractor Project Manager and Health & Safety Officer	As per the Health & Safety Plan	Duration of construction	Eskom Environmental Officer and Health & Safety Officer	Daily/Weekly	Daily/Weekly registers; photographs. Health & Safety Plan

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Emergency procedures

Impact management outcome: *Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.*

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Environmental Emergency situations	<ul style="list-style-type: none"> ❖ Human health risk ❖ Ecological impact 	Medium	<ul style="list-style-type: none"> ❖ Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; ❖ The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation; ❖ All staff must be made aware of emergency procedures as part of environmental awareness training; ❖ The relevant local authority must be made aware of a fire as soon as it starts; ❖ In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see Hazardous Substances section). 	Low	Contractor Project Manager	Adherence to the Eskom Distribution Grid's Emergency Preparedness Plan or development and implementation of a project-specific Emergency Response Action Plan (if required).	Duration of construction	Eskom Environmental Officer and Health and Safety Officer	Daily/Weekly	Daily/Weekly registers; photographs. Training registers

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Hazardous substances

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Uncontrolled hazardous substances	<ul style="list-style-type: none"> ❖ Human health risk ❖ Ecological impact ❖ Legal contravention 	High	<ul style="list-style-type: none"> ❖ The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible; ❖ All hazardous substances must be stored in suitable containers as defined in the Method Statement; ❖ Containers must be clearly marked to indicate contents, quantities and safety requirements; ❖ All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers; ❖ Bunded areas to be suitably lined with a SABS approved liner; ❖ An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis; ❖ All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS's); ❖ All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet; ❖ Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be 	Low	Contractor Project Manager	As per the Construction Method Statement and relevant Impact Management Actions	Duration of construction	Eskom Environmental Officer and Health and Safety Officer	Daily/Weekly	Daily/Weekly registers; photographs; Training registers

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			<p>made available;</p> <ul style="list-style-type: none"> ❖ The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers; ❖ The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall); ❖ The floor of the bund must be sloped, draining to an oil separator; ❖ Provision must be made for refuelling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained; ❖ All empty externally dirty drums must be stored on a drip tray or within a bunded area; ❖ No unauthorised access into the hazardous substances storage areas must be permitted; ❖ No smoking must be allowed within the vicinity of the hazardous storage areas; ❖ Adequate fire-fighting equipment must be made available at all hazardous storage areas; ❖ Where refuelling away from the dedicated refuelling station is required, a mobile refuelling unit must be used. Appropriate ground protection such as drip trays must be used; ❖ An appropriately sized spill kit kept onsite 							
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			relevant to the scale of the activity/s involving the use of hazardous substance							
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Dust emissions

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Falling dust particles	<ul style="list-style-type: none"> ❖ Human health risk ❖ Ecological impact 	Medium	<ul style="list-style-type: none"> ❖ Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the EEO; ❖ Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present; ❖ During high wind conditions, the EEO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether 	Low	Contractor Project Manager	As per the Construction Method Statement and relevant Impact Management Actions	Duration of construction	Eskom Environmental Officer	Ongoing	Daily/Weekly registers; photographs

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			<ul style="list-style-type: none"> until the wind speed drops to an acceptable level; ❖ Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind; ❖ Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the EEO; ❖ Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas; ❖ For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise it. 							
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Noise
Impact Management outcome: Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.

Impact Assessment					Implementation			Monitoring		
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Construction noise	<ul style="list-style-type: none"> ❖ Human health risk ❖ Ecological impact 	Medium	<ul style="list-style-type: none"> ❖ The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only; ❖ All vehicles and machinery must be properly maintained; ❖ Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers; ❖ Develop a Code of Conduct for the construction phase in terms of behaviour 	Low	Contractor Project Manager	As per Project Method Statement and Equipment Maintenance Program compliant with required impact management actions	Duration of construction	Eskom Environmental Officer	Daily/Weekly	Daily/Weekly registers; Equipment maintenance records

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of construction staff.
 ❖ Operating hours must be kept to during the construction phase.
 ❖ Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.

Fire prevention
Impact management outcome: Prevention of uncontrollable fires.

Impact Assessment					Implementation			Monitoring		
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Environmental Emergency situations	<ul style="list-style-type: none"> ❖ Human health risk ❖ Ecological impact 	Medium	<ul style="list-style-type: none"> ❖ Designate smoking areas where the fire hazard could be regarded as insignificant; ❖ Firefighting equipment must be available on all vehicles located on site; ❖ The local Fire Protection Agency (FPA) must be informed of construction activities; ❖ Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site; ❖ Two way swop of contact details between EEO and FPA. 	Low	Contractor Project Manager	As per the Eskom Distribution Emergency Preparedness Plan or Emergency Response Action Plan.	Duration of construction	Eskom Environmental Officer; Health & Safety Officer	Daily/Weekly	Daily/Weekly registers; photographs.

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Cabling and Stringing

Impact management outcome: No environmental degradation occurs as a result of stringing.

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Cabling and stringing waste	<ul style="list-style-type: none"> ❖ Human health risk ❖ Ecological impact 	Medium	<ul style="list-style-type: none"> ❖ Residual solid waste (off cuts etc.) shall be recycled or disposed of in accordance with the Section on Solid waste and hazardous Management; ❖ Management of equipment used for installation shall be conducted in accordance with the contractor method statement on Management hazardous substances and any associated spills shall be conducted in accordance with the Section on Hazardous substances. 	Low	Contractor Project Manager	As per the Project Method Statement and Waste Management Plan	Duration of construction	Eskom Environmental Officer; Health & Safety Officer	Daily/Weekly	Daily/Weekly registers; photographs.

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Socio-economic

Impact management outcome: Enhanced socio-economic development

Impact Assessment						Implementation			Monitoring	
Aspect	Impact	Impact Significance rating	Impact Management Actions	Residual impact Significance rating	Responsible person	Method of implementation	Timeframe	Responsible Person	Frequency	Evidence of compliance
Electrification project	❖ Positive impact through local labourer employment	Medium	<ul style="list-style-type: none"> ❖ Develop and implement communication strategies to facilitate public participation; ❖ Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process; ❖ Sustain continuous communication and liaison with community via ward councillor ❖ Create work and training opportunities for local stakeholders; and ❖ Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to site and to workers 	High	Contractor Project Manager	As per the Impact Management Actions	Duration of construction	Eskom Environmental Officer	Daily/Weekly	Daily/Weekly registers; photographs.

8.2 Impact before mitigation

What impact will this project have on elements 4 to 7?

1. Physical

Low impact (0-5) Medium impact (6-8) High impact (11-18)

2. Natural

Low impact (0-5) Medium impact (6-8) High impact (11-18)

3. Social

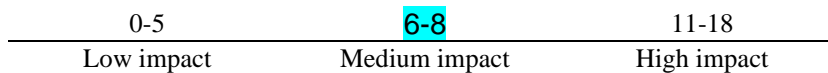
Low impact (0-5) Medium impact (6-8) High impact (11-18)

4. Economic

Low impact (0-5) Medium impact (6-8) High Impact (11-18)

Overall impact before mitigation:

This section addresses the overall environmental impact of the project before mitigation is applied. The impacts as assessed in the above three spheres (physical, natural and social) need to be considered to determine the overall impact



If the overall impact is between 11 and 18, contact the Environmental Practitioner or specialist.

8.3 Impacts after mitigation

What impact will this project have on elements 4 to 7?

5. Physical

Low impact (0-5) Medium impact (6-8) High impact (11-18)

6. Natural

Low impact (0-5) Medium impact (6-8) High impact (11-18)

7. Social

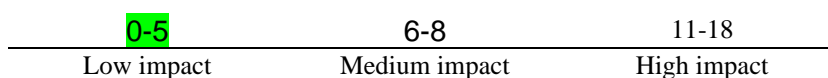
Low impact (0-5) Medium impact (6-8) High impact (11-18)

8. Economic

Low impact (0-5) Medium impact (6-8) High Impact (11-18)

Overall impact after mitigation:

If the overall impact is between 11 and 18, contact the Environmental Practitioner or specialist



Annex A

Environmental Management Plan

1 General conditions

- 1.1. The Eskom project manager or coordinator shall be responsible for ensuring that the land owners have been informed before any work is carried out on site. Contractors shall find out if the land owners have been informed before moving onto site.
- 1.2. No fences, gates or locks shall be damaged to obtain access onto a line route. Arrangements shall be made in advance to obtain permission for access.
- 1.3 Use of private roads shall be arranged in advance. Any damage to private roads shall be repaired at the contractor's expense and to the satisfaction of the land owner. This shall be the responsibility of the project manager or co-ordinator.
- 1.4 Gates shall be left as they are found, i.e. closed gates shall be kept closed and open gates shall be left open. Gates to adjacent properties or onto public roads shall be closed at all times. Any Eskom gates installed on the line route shall be kept closed and locked except while stringing is taking place. Open gates shall be guarded to prevent animals straying and unauthorized persons and vehicles entering into adjacent camps or properties.
- 1.5 Permission shall be obtained from land owners before any water is used.
- 1.6 No fires shall be lit on private property. If fires are lit on Eskom's property or in the construction camp, provision shall be made that no accidental fires are started. No fire wood shall be collected in the veld.
- 1.7 If activities that can cause a fire are carried out, fire extinguishers shall be available on site and in the construction camp.
- 1.8 No property may be accessed after normal working hours except with the permission of the land owner. Privacy shall be respected at all times.
- 1.9 Eskom, Eskom's contractors and their employees shall at all times be courteous towards land owners, tenants and the local community.
- 1.10 Eskom, Eskom's contractors and their employees shall not cause damage to property, crops or animals. Activities that may cause conflict with land owners, tenants, the local work force or the local community shall be avoided. Should conflict arise it shall be immediately reported to the Eskom project manager or coordinator.
- 1.11 Vehicles shall be driven at a moderate speed on private roads and stay within the statutory speed limit on public roads.

**PROCEDURE FOR
ENVIRONMENTAL
ASSESSMENT OF RETICULATION AND SUB-
TRANSMISSION PROJECTS:
ANNEX Q OF CAPITAL INVESTMENT IN THE
DISTRIBUTION BUSINESS**

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1.12 All movement of vehicles shall take place on the established Eskom servitude road or on private roads as agreed in advance. Keep to existing tracks. No movement shall take place through the veld. Special care shall be taken to prevent excess damage during wet weather.

1.13 If any vehicle should get stuck, the damage shall be repaired immediately so that no deep ruts remain.

1.14 Any damage to private property shall immediately be reported to Eskom and the owner. The damage shall be rectified immediately if possible and/or appropriate compensation shall be paid to the owner at the discretion of the project manager/co-ordinator in consultation with the property owner. A record of damages and rectifying action shall be kept. The land owner's satisfaction with the outcome of rectifying action shall be obtained in writing.

1.15 A proper system of waste management shall be instituted in the construction camp. This entails that sufficient waste bins are available on site and in the construction camp. The waste shall be dumped at an approved waste disposal site. No containers, scrap metal, conductor etc. shall be left on site. All scrap shall be removed and taken to an appropriate disposal site. No oil, diesel or other chemicals shall be spilled or discarded anywhere. If an accidental spill occurs, it shall be reported immediately and cleaned to the satisfaction of Eskom and the land owner. No waste shall be left in the veld or on the line route.

1.16 Washing and toilet facilities shall be provided on site and in the construction camp. The facilities shall comply with Eskom standards and shall have the approval of the land owner.

1.17 No human excrement shall be left in the veld. If no toilet facilities are available such waste shall be buried immediately.

1.18 Herbicides shall only be applied with Eskom's permission and in accordance with the **CONTRACT SPECIFICATION FOR VEGETATION MANAGEMENT SERVICES ON ESKOM NETWORKS (DST-240-524567571)**.

19 Camp and office sites shall be dismantled and removed after completion of the construction phase of the project. The site shall be rehabilitated to as close as possible to its original condition to the satisfaction of the land owner which shall be in writing.

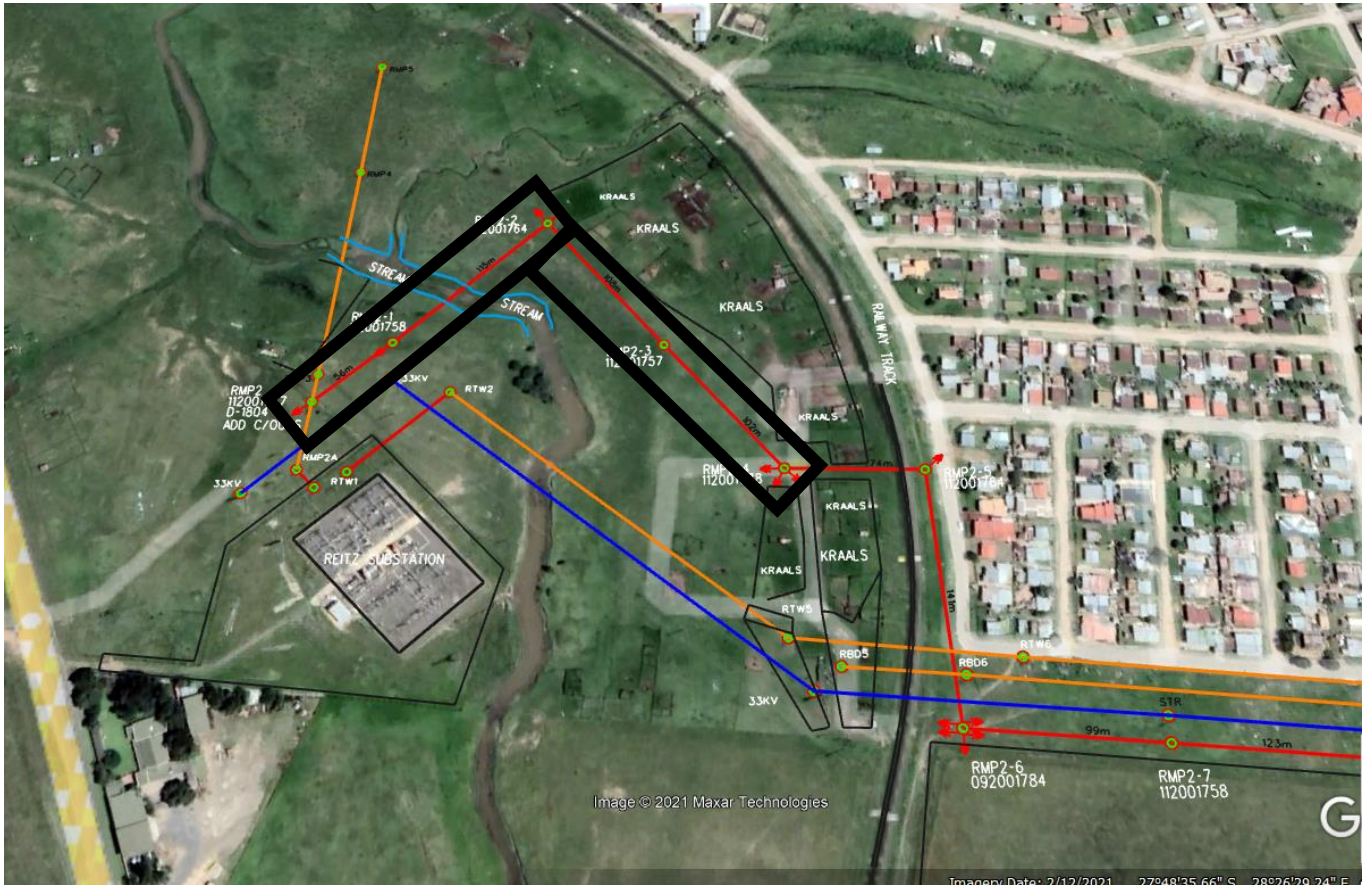
1.20 All excavations shall be enclosed to prevent animals or people from accidentally falling into excavations.

1.21 No trees shall be cut or removed without prior permission from the landowner. Permits shall be obtained for the cutting and removal protected trees (protected trees shall be dealt with in 2, Special conditions).

2 SPECIAL RECOMMENDATIONS

(Specific issues identified during the scoping as needing attention i.e. erosion berms, bird flappers, protected trees. etc.).

- Install bird flappers on the new power line portion from RMP2 up to RMP2-4 (In black boxes in the image)
- These line portions are perpendicularly aligned to sun sets and sun rise which blinds birds and makes them prone to collision.
- The line portions are crossing an East-West flight path hence posing a danger to water birds



TYPICAL MITIGATION MEASURES

ENVIRONMENTAL CONCERNS	MITIGATION MEASURES
AGRICULTURE	
Loss of standing crop due to access road and tower work site.	<ul style="list-style-type: none"> - limit width of access and size of tower site. - avoidance of crop areas. - monetary compensation for crop loss. - time construction to avoid growing season.
Soil Compaction	<ul style="list-style-type: none"> - scheduling activities to times of the year when soils are least susceptible to compaction. - stop activities when ground conditions are

PROCEDURE FOR ENVIRONMENTAL ASSESSMENT OF RETICULATION AND SUB-TRANSMISSION PROJECTS: ANNEX Q OF CAPITAL INVESTMENT IN THE DISTRIBUTION BUSINESS

	<ul style="list-style-type: none"> - poor. - use of equipment with low bearing capacity. - chisel ploughing.
Construction of new lines	<ul style="list-style-type: none"> - locate access roads along existing traffic routs.
Topsoil – subsoil mixing/soil rutting	<ul style="list-style-type: none"> - scheduling activities. - stop activity when ground conditions are poor. - use of equipment with low bearing capacity. - use of gravel roads. - addition of manures to offset fertility loss. - compensation for reduced soil productivity. - removal of spoil and/or bentonite from foundation operations. - Segregation of topsoil and subsoil.
Disturbance to farm operations	<ul style="list-style-type: none"> - maintain contact with landowner/tenant regarding preferences.
Loss of livestock	<ul style="list-style-type: none"> - employ noise control measures near sensitive livestock. - Construction of farm gates. - Securing farm gates. - Clean-up construction materials which could be ingested. - Compensation for lost, injured livestock.
SOCIAL IMPACTS	
Noise and Vibration	<ul style="list-style-type: none"> - limit this type of work to daylight hours. - observe protocol or applicable municipal by-laws. - use of appropriate methods where available.
Mud and Dust	<ul style="list-style-type: none"> - wetting down dry soils. - chemical control of dust. - cleaning roads to remove mud. - temporary planting of grasses.
Aesthetics	<ul style="list-style-type: none"> - screen with natural or planted vegetation restoration. - avoid linear access down the right-of-way. - addition of topsoil to gravel access roads. - hoarding construction sites. - installation of landscaping in advance of site completion.
Inconvenience	<ul style="list-style-type: none"> - select route and method of installation to suit landowners' conditions. - select timing of activity.
Heritage resources	<ul style="list-style-type: none"> - avoidance/isolation. - design measures to make facility less obtrusive. - screening. - alternate methods of equipment. - protection by use of enclosures, barrier

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	<ul style="list-style-type: none"> fencing, covering. - salvage in conjunction with SAHRA. - relocation in conjunction with SAHRA.
Tourism and recreation resources	<ul style="list-style-type: none"> - design measures to make facility less obtrusive or disruptive. - screening and restoration. - minimise noise and dust. - safety precautions to protect the public. - scheduling to avoid peak use periods.
WATER QUALITY	
Sedimentation of streams due to erosion from the right-of way.	<ul style="list-style-type: none"> - minimise use of slopes adjacent to streams during soils testing, construction and maintenance. - maintain a cover crop. - retain buffers.
Stream bank erosion.	<ul style="list-style-type: none"> - mechanical erosion control. - retain shrubby stream bank vegetation and selectively cut or prune trees during line clearing/maintenance. - selective spraying of herbicides. - Mechanical erosion control.
Impedance of natural flow streams/others surface waters.	<ul style="list-style-type: none"> - use and maintenance of appropriate stream crossing device.
Ponding or channelization of surface waters due to rutting.	<ul style="list-style-type: none"> - timing activities to stable ground conditions. - use of gravel roads.
Contamination of surface or ground waters through spills or leaks of toxic substances.	<ul style="list-style-type: none"> - spill control material and procedures readily available. - site selection where possible.
Soil compaction/topsoil-subsoil mixing.	<ul style="list-style-type: none"> - avoidance of rutting by vehicles where possible. - construction timing. - use of gravel roads. - use of vehicles with low bearing pressures. - stop activities when ground conditions are poor.
Wind/water erosion.	<ul style="list-style-type: none"> - avoidance of areas with high erosion potential. - timing activities to the most stable ground conditions. - slope stabilisation. - mechanical erosion control. - vegetation erosion control. - recompaction of trenches. - avoid trenching parallel to the fall of a slope.
Contamination by petrochemicals.	<ul style="list-style-type: none"> - spill control material and procedures made readily available. - restoration methods investigated.