

# Proposed 132 kV Powerline, Walmer, Port Elizabeth

## Pre-Application Draft Basic Assessment Report

Report Prepared for

**Nelson Mandela Bay Municipality**



Report Number 489647/1



Report Prepared by



April 2016

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### Report Prepared for

#### Nelson Mandela Bay Municipality

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**SRK Project Number 489647**

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## Definitions

Environment	The external circumstances, conditions and objects that affect the existence and development of an individual, organism or group. These circumstances include biophysical, social, economic, historical and cultural aspects.
Basic Assessment	An assessment of the positive and negative effects of a proposed development on the environment. The process involves collecting, organising, analysing, interpreting and communicating information that is relevant to the consideration of an application for environmental authorisation. A simpler process than EIA, that is subject to one phase (Basic Assessment) and generally does not include specialist studies.
Interested and Affected Party	Any person, group of persons or organisation interested in or affected by an activity and any organ of state that may have jurisdiction over any aspect of the activity.
Public Participation Process	A process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters relating to a proposed development.

## Abbreviations

BAR	Basic Assessment Report
BID	Basic Information Document
CBA	Critical Biodiversity Area
DBAR	Draft Basic Assessment Report
DEA	Department of Environmental Affairs
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism (Eastern Cape Province)
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECBCP	Eastern Cape Biodiversity Conservation Plan
ECO	Environmental Control Officer
ECPHRA	Eastern Cape Provincial Heritage Resources Agency
EMF	Electro-Magnetic Field
EMPr	Environmental Management Programme
IAP	Interested and Affected Party
ICNIRP	International Commission for Non-Ionizing Radiation Protection
IDP	Integrated Development Plan
kV	Kilovolt (one thousand volts)
MVA	Megavolt Ampere (one million volt amperes)
NEMA	National Environmental Management Act
NERSA	National Energy Regulator of South Africa
NMBM	Nelson Mandela Bay Municipality
PPP	Public Participation Process
RP	Responsible Person
SABS	South African Bureau of Standards
SAHRA	South African Heritage Resources Association
SRK	SRK Consulting
+ve	Positive
-ve	Negative

# **Section 1: Summary Report**



# Executive Summary

## Proposed 132kV Powerline, Walmer

### Basic Assessment Report

#### 1. Introduction

The proposed project will include the construction of a double circuit 132 kV powerline from the existing Lorraine 132 kV substation to the existing 132 kV 17<sup>th</sup> Avenue substation.

SRK Consulting has been appointed by the Nelson Mandela Bay Municipality, as the independent consultants to conduct an Environmental Basic Assessment (BA) to facilitate authorisation of the proposed 132 kV powerline in terms of the National Environmental Management Act No 107 of 1998 (NEMA) as amended, and the associated Environmental Impact Assessment (EIA) Regulations, 2014.

##### 1.1. Purpose and Structure of the Basic Assessment Report

The NEMA EIA Regulations were promulgated to put into practice the environmental management principles espoused in the Act. The Basic Assessment Report (BAR) provides the competent authority, the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), with all relevant information about the proposed activity, as well as an assessment of the potential impacts in order to inform the decision as to whether the activity should be approved and, if so, under what conditions.

This BAR comprises of two sections, of which Section 2 is mandatory in terms of the requirements for a Basic Assessment. This Summary Report is intended to provide additional contextual information in support of the application<sup>1</sup>. The BAR contains the following sections:

<sup>1</sup> Note that the full report is a collation of sections and not a sequential compilation of report chapters.

#### Section 1: Summary Report/ Executive Summary

Section 1 (this section) provides an introduction to the project; describes the approach to the Basic Assessment process and provides a description of the activity and the proposed concept alternatives considered. It also describes the public consultation process undertaken during the process, the key findings and recommendations and the way forward. In effect this section provides a summary of the key elements of the Basic Assessment.

#### Section 2: Completed DEDEAT BAR Form

Section 2 contains the completed BAR form, as prescribed by DEDEAT, submitted in support of the application for an Environmental Authorisation of the activity under the NEMA EIA Regulations. Section 2 also contains the Appendices as required by the DEDEAT BAR.

##### 1.2. Approach to the Basic Assessment

The environmental authorisation process prescribed for listed activities under Listing Notices 1, 2 and 3 published in Government Gazette Numbers R983, R984 and R985 respectively are defined in the Environmental Impact Assessment (EIA) Regulations made under section 24(5) of the National Environmental Management Act, 2008 (Act No. 107 of 1998) (NEMA).

Activity 19, listed in GN R983 (Listing Notice 1) of the NEMA EIA regulations and Activity 12 and 14 listed in GN R985 (Listing Notice 3) are the main activities associated with the proposed project, calling for an Environmental Authorisation process to be followed:

*GN R.983 Item 19: The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from – (i) a watercourse.*

The installation of the section of underground cable under William Moffet Drive will trigger this activity.

*GN R.985 Item 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where the clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan (a) In Eastern Cape (ii) Within critical biodiversity areas identified in bioregional plans; (iv) On land, where at the time of coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.*

The proposed powerline alignment will intersect CBAs identified in the Nelson Mandela Bay Municipality (NMBM) Bioregional Plan.

*GN R.985 Item 12 (xii): The development of Infrastructure or structures with a physical footprint of 10 square metres or more (c) In Eastern Cape (iii) In urban areas (aa) Areas zoned for use as public open space (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, zoned for conservation purpose.*

The section of proposed underground cable will be installed within a CBA identified in the Nelson Mandela Bay Municipality (NMBM) Bioregional Plan.

The BA process entails the assessment of the activity and the compilation of a BAR (see Section 2) for public comment. Issues and concerns raised by the public after the distribution of the Background Information Document (BID), in general inform the BAR and concerns raised on the BAR are incorporated into the report which, together with the prescribed Comment and Responses Report, is submitted to DEDEAT for a decision. A typical Basic Assessment process is depicted in the Figure 1.

### 1.3. Prescribed Requirements for the Basic Assessment

The BAR provides information about the proposed activity, a description of the affected environment (including ecological, land use and socio-economic aspects), a description of the process undertaken in order to consult the public on the activity, as well as a basic assessment of the potential impacts of the activity on the receiving environment.

Several appendices to the BAR are required as supporting documentation. These include:

- Appendix A – Site Plan(s);
- Appendix B – Photographs;
- Appendix C – Facility illustration(s);
- Appendix D - Specialist reports;
- Appendix E – Comments and Responses (Public Participation Process);
- Appendix F – Environmental Management Programme (EMPr);
- Appendix G – Other Information;
- Appendix H – Impact Rating Summary;

- Appendix I – Curriculum Vitae;
- Appendix J – Affirmation by the EAP;

This information is contained in Section 2 of the BAR.

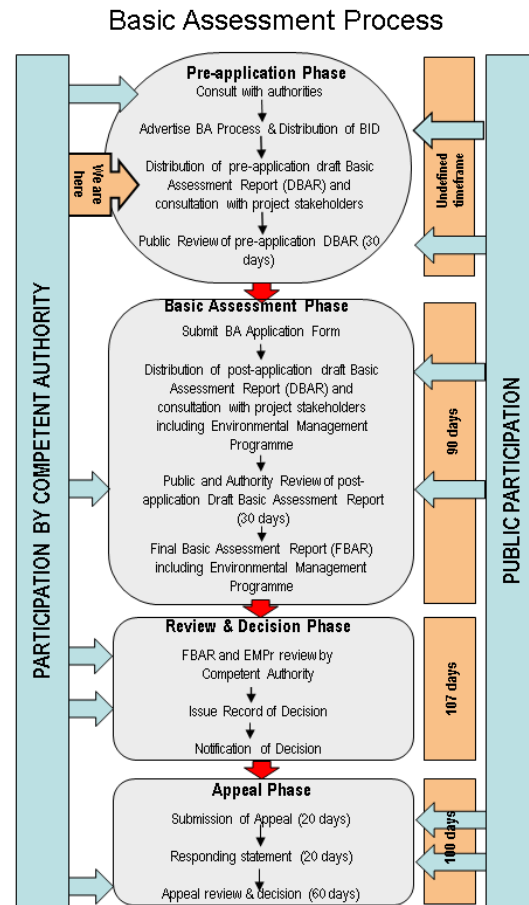


Figure 1: Typical Basic Assessment Process

## 2. Motivation for the Proposed Development

In 2009 the substation at 17<sup>th</sup> Avenue, Walmer was damaged. The load on the substation prior to the damage was 18 MVA. The Nelson Mandela Bay Municipality has predicted a long-term load forecast of about 50 MVA. The predicted load increase is due to residential developments in nearby Fairview, as well as commercial developments along William Moffet Drive and Circular Drive.

The proposed 132 kV powerline will connect the Walmer 17<sup>th</sup> Avenue substation to the 132 kV grid via the Lorraine substation. This will stabilise the electricity supply and provide for the predicted future load growth in the area. This will enhance Nelson Mandela Bay's energy supply. The NMBM IDP 2011-2016 identifies Ward 4 and Ward 6 as eligible for electricity upgrades and infrastructure restoration. The proposed alignment is situated within both, ward 4 and ward 6 (as well as a section of ward 8).

### 3. Project Description

The proposed route is approximately 2.8 km long and will cross private properties as well as NMBM owned land (refer to Ownership Map in Appendix A). An overhead powerline is proposed up to point K on the Layout Plan (Appendix A) from where an underground cable will be installed and under William Moffet Drive to the eastern side of the existing 17<sup>th</sup> Avenue substation. Note that an upgrade to this substation is underway within the existing footprint and falls outside the scope of this application and process.

The following infrastructure specifications are relevant:

- All overhead lines will be constructed with dual circuit 132 kV monopole self-supporting steel structures, with servitude width of 25 m;
- Maximum span lengths are limited by line alignment but could be between 140 m and 180 m;
- Should the 'Petechane' tower type be used the servitude may be reduced to 16 m. The use of the 'Petechane' tower circuit will depend on soil conditions prevalent along the proposed alignment. A geotechnical investigation will be conducted in the detailed design stage to establish the soil conditions along the proposed alignment;
- A servitude width of 1.5 m is required for the underground cables between points K and L on the map;
- The powerline will be positioned not closer than 12.5 m from the railway line; and
- Where relevant, tower footing foundations will be specially designed for towers placed near or in a watercourse.

### 4. Public Consultation Process

A Public Participation Process (PPP) aimed at allowing the public to be involved in the environmental process is being carried out. IAPs are encouraged to review the Basic Assessment Report (BAR) to ensure that any comments have been accurately recorded and understood.

The PPP activities that have been conducted to date as part of this BA process are as follows:

- Distribution of a Background Information Document (BID) to identified Interested and Affected Parties (IAPs), stakeholders and authorities on 20 January 2016;
- Placement of a newspaper notice in the EP Herald on 21 January 2016 announcing commencement of the BA and availability of the BID;
- Hand delivery of the BID to residences / businesses in close proximity to the proposed powerline alignment via a 'knock-and-drop' exercise on 22 January 2016;

- Provision of a 32-day comment period on the BID;
- Placement of two onsite posters on appropriate locations on 2 February 2016 inviting IAP registration and comment;
- Compilation of any comments received on the public participation activities to date and integration of these comments into the Pre-application DBAR (this report);
- Distribution of an Executive Summary of the Pre-application DBAR to all IAPs registered for this project and provision of a 30 day comment period;
- Making a copy of the full Pre-application DBAR available in a public library for a 30 day comment period; and
- Distribution of the full Pre-application DBAR to organs of state having jurisdiction in respect of any aspect of the activity and provision of a 30 day comment period.

## 5. Potential Impacts

### 5.1. Impact Rating Methodology

The identification of potential impacts of the proposed activity was based on the following factors:

- The legal requirements;
- The nature of the proposed activity;
- The nature of the receiving environment; and
- Issues raised during the public participation process.

Potential impacts were assessed using SRK's impact assessment methodology, detail of which is provided in Appendix H of the BAR. The significance of an impact is defined and assessed as a combination of the consequence of the impact occurring (based on its extent, intensity and duration) and the probability that the impact will occur.

The impact significance rating should be considered by the competent authority in their decision-making process based on the definitions of ratings ascribed below.

- **Insignificant:** the potential impact is negligible and will not have an influence on the decision regarding the proposed activity.
- **Very Low:** the potential impact is very small and should not have any meaningful influence on the decision regarding the proposed activity.
- **Low:** the potential impact may not have any meaningful influence on the decision regarding the proposed activity.
- **Medium:** the potential impact should influence the decision regarding the proposed activity.
- **High:** the potential impact will affect a decision regarding the proposed activity.
- **Very High:** the proposed activity should only be approved under special circumstances.



- **+ve** – positive impact;
- **-ve** – negative impact

Considering these factors, the *key* environmental and social impacts identified as potentially resulting from the proposed housing development, are summarised below. The impact significance ratings after effective implementation of key management recommendations are also included.

## 5.2. Construction Impacts

The following potential construction impacts were identified:

- Impacts on Biodiversity:
  - ❖ Loss of Biodiversity/ Vegetation Clearance:
 

Vegetation clearance, vehicular access and excavation activities required during the construction phase may impact negatively on the biodiversity of the area, especially the section of alignment between Circular Drive and William Moffet Drive which is classified as a Critical Biodiversity Area (CBA) according to the Eastern Cape Biodiversity Conservation Plan (ECBCP). It must however be noted that the pylon footprints will be minimal in nature and little vegetation clearing will be required. Two potential Yellowwood tree seedlings (*Podocarpus latifolius*) have been planted in the open space adjacent to AG Visser Avenue which may need to be replanted to ensure that they are not damaged during the construction phase
  - ❖ Erosion:
 

Incorrect topsoil stripping may lead to accelerated erosion, resulting in soil loss, and possible sedimentation/ siltation of the watercourse which runs along the southern section of the proposed alignment.
  - ❖ Spread of Alien Invasive:
 

Vegetation clearance required during the construction phase may lead to the spread of alien invasive species. However, vegetation clearing should be minimal and only involve clearing at each tower and along the underground cable route.

The final significance rating for this impact is LOW (-ve) if no mitigation is implemented. However, should the important mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).
- Impacts on Traffic:
 

Construction at the various road crossings (Bergues Street, Circular Drive and William Moffet Drive) for the proposed alignment may require detours and/ or traffic control measures. It is important to note that the powerline will cross the road, however no construction is required in the road. The underground

crossing at William Moffet Drive will be constructed using directional drilling in order to avoid traffic disruption. Construction traffic may also pose a safety impact to residents living along the proposed alignment. Construction vehicles requiring access to the site may cause wear and tear of the existing roads. The final significance rating for this impact is VERY LOW (-ve) with or without mitigation measures.

- Impacts on Wildlife:
 

Noise and habitat destruction resulting from construction activities may displace and disturb local wildlife mainly associated with the watercourse and wetland. However, since no activities are planned within any watercourse or wetland and considering the small proposed construction footprint, the potential impact to wildlife should not be significant. The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).
- Noise Impacts:
 

Construction activities will generate noise due to the operation of machinery and vehicles, causing a nuisance to residents along the proposed alignment. The final significance rating for this impact is VERY LOW (-ve) with or without mitigation measures.
- Impacts on Existing Infrastructure and Private Property:
 

Existing infrastructure including the railway line (north of Macon Road, Lorraine), NMBM road infrastructure, fences and gates, Telkom cables, existing Eskom cables, NMBM water and sewer infrastructure as well as adjacent private property may be disturbed through construction activities. The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).
- Impacts on Aquatic Resources (including wetlands):
  - ❖ Impact on hydrological regime and increased potential for erosion:
 

The soils within the study area are susceptible to erosion when subjected to high flows (high volumes and velocities), with head-cuts readily forming within the regional water courses. This creates bed and bank instability in the aquatic ecosystems and consequent sedimentation of downstream areas, which can negatively affect biodiversity and functioning of in stream habitats. Clearing of vegetation could destabilise the soils, resulting in downstream erosion and or sedimentation that could impact on aquatic habitats within the Baakens River, particularly if no post construction rehabilitation is done to

allow revegetation of any disturbed sites. Due to the nature of the study area hydrology, its present state and the surrounding impacts this would although a negative impact, the overall significance of the impact would be rated as LOW (-ve). However should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

❖ Impact on Water Quality:

Presently little is known about the water quality of the water courses directly in the study area, but it is assumed due to the activities observed, the aquatic systems contain some form of pollutants, other than elevated sediment loads during floods. During construction various materials, such as sediments, diesel, oils and cement, could pose a threat to the continued functioning downstream areas, if by chance it is dispersed via surface run-off, or are allowed to permeate into the groundwater. Changes to water quality can negatively impact on the functioning of plants and other instream biota. The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

❖ Loss of vegetation, and aquatic habitat and stream continuity:

Wetland vegetation and aquatic corridors create longitudinal links between a variety of habitats and refugia. The refugia are particularly important in times when surface flows are low, i.e. fish populations are able to survive in deeper pools during droughts. These populations are then able to recolonise the remaining river reaches, when reconnected by increased river flows. This function of a catchment and its ability to act as a refugia is highlighted by the conservation plans that have earmarked the study area as such. The proposed transmission line, would see a number of towers located within these areas based on the current alignments, but it is assumed that these tower footprints are small and no access roads will be required within the aquatic habitats. The number of tower footprints directly within or adjacent to the watercourse would be lower if Alternative 1 is selected. However, the impact rating for both alignments is similar. The final significance rating for this impact is LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

• Impacts on Archaeological Resources:

Although the proposed alignment is located in an area of low archaeological cultural sensitivity, it is possible that archaeological heritage material exists below the surface and could be impacted during construction. The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

• Impacts on Palaeontological Resources:

Although the proposed alignment is located in an area of low palaeontological cultural sensitivity, it is possible that palaeontological heritage material exists below the surface and could be impacted during construction. The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

• Impacts on Air Quality (Dust):

Windblown dust from material stockpiles and cleared areas may affect surrounding residents, road users and pedestrians by creating a nuisance and safety impact to traffic. However, it is not anticipated that large areas will have to be cleared during the construction phase as the tower footprints are small and minimal new access routes will be required. The final significance rating for this impact is VERY LOW (-ve) with or without mitigation.

• Waste Management:

Construction waste as well as small amounts of domestic waste will be generated. Lack of proper management of the waste on the site may lead to wind-blown litter and dumping creating a negative visual impact and potentially impacting on aquatic ecosystems. The final significance rating for this impact is LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

• Socio-economic Impacts:

The proposed powerline may generate temporary employment opportunities as well as contribute to the improvement of services within the general area. The final significance rating for this impact is VERY LOW (+ve) with or without enhancement measures.

• Impacts on Aquatic Resources (Cumulative Impact):

❖ Impact on Water Quality:

As noted in the Aquatic Impact Assessment (Appendix D), potential cumulative impacts regarding the impact of changes to water quality of nearby watercourses is likely due to the construction of the Lorraine bulk stormwater

project. However, the impacts should be short-term and could be rated as Moderate – Low with mitigation. This rating is also based on the assumption that the first detention pond near Circular Drive will capture any pollutants/sediments derived from the stormwater project, stormwater project, which would result in altered hydrological patterns that also then affect migration routes / patterns

### 5.3. Operational Impacts

The following potential operational impacts were identified:

- Socio-economic Impacts:

The proposed powerline add to the improvement of services to the greater area. It will supply electricity to future proposed residential and commercial developments along the route and greater area as well as supplement the current energy demands of existing residential and commercial properties along the route. The final significance rating for this impact is MEDIUM (+ve) with or without enhancement measures.

- Visual/ Aesthetic Impacts:

Large pylons and conductors can pose an aesthetic impact, affecting surrounding residents and visitors to the area. In addition, if the servitude is not regularly inspected and maintained, illegal dumping and windblown litter can accumulate creating a negative visual impact. The railway line servitude adjacent to Macon Road, Lorraine is often used by photographers as a visual location for photoshoots. The visual impact of the powerline structures could affect the option for photographers to use this location. Note that the proposed overhead powerlines are proposed in an existing built-up area and within an existing servitude along Macon Road, Lorraine and open spaces along with other services infrastructure. The proposed underground cable between points K and L will not contribute to any aesthetic impact. The final significance rating for this impact is LOW (-ve) with or without mitigation.

- Avifauna Impacts:

- ❖ Bird collisions with infrastructure:

Avifauna impacts relating to collisions with the powerline infrastructure are a possibility especially near watercourses, however, due to the suburban nature of the proposed alignment, the species of avifauna likely to occur in the area should be adapted to suburban situations and should be able to continue to use the flyway without risk of collision.

- ❖ Electrocutation of avifauna:

Avifauna within the local area may be at risk of electrocution due to the installation of the powerline infrastructure. However, large bird species (i.e Blackheaded Heron) are most prone

to electrocution, and it is not anticipated that many of these species will occur in the study area being a built-up suburban area.

- ❖ Perching, Roosting and Breeding on infrastructure:

Avifauna in the surrounding area may use the proposed infrastructure for perching and breeding, however the design of the towers should be designed in such a way that it discourages or is not conducive to provide suitable nesting sites for avifauna.

The final significance rating for this impact is LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to VERY LOW (-ve).

- Noise Impacts:

Noise generated by the powerlines during the operational phase may have a nuisance effect on surrounding residents. Noise may result from older or dirty powerlines or during periods of high humidity or rainfall. However, these impacts will only affect people in very close proximity to the powerline and are generally considered insignificant in assessments as the standard establishment of appropriate servitude widths as well as proper maintenance of the lines will mitigate such impacts. The final significance rating for this impact is VERY LOW (-ve) with or without mitigation mainly because the impact is permanent.

- Property Ownership/ Value:

Although not always the case, the construction of overhead powerlines has the potential to reduce the sales price of residential properties. Effects are most likely to occur to properties crossed by or immediately adjacent to the power line, and may be greater for small properties than for larger properties. Note that the proposed overhead powerlines are proposed in an existing built-up area and within an existing servitude along Macon Road, Lorraine and open spaces along with other services infrastructure. The final significance rating for this impact is LOW (-ve) with or without mitigation.

- EMF (Electro-Magnetic Field):

The proximity of residential and commercial properties to the proposed powerlines has the potential for EMF exposures. Scientific research on the effects of EMFs on public health has not demonstrated clearly the existence of a significant risk, nor has it proven the complete absence of risk. In general, the width of the servitude proposed for the different capacity powerlines are specifically prescribed to ensure safety related to potential impacts such as EMF and noise. A maximum servitude width of 25 m is prescribed for the proposed overhead powerline which will prevent the exposure of the general public (including adjacent

property owners) to EMF for long periods as no buildings may be constructed within the servitude. The International Commission for Non-Ionizing Radiation (ICNIRP) specified guidelines for EMF exposure in 1998 (subsequently updated in 2010). The guidelines recommend the maximum Electric and Magnetic Fields allowable for limiting EMF exposure that will provide protection against adverse health effects. According to the updated 2010 guidelines the recommended guideline for Electric Field is 5 kV/m for general public (10 kV/m for occupational) and for Magnetic Field 200  $\mu$ T (1 mT for occupational). An EMF study conducted by Eskom specifies the maximum magnetic field at a 132 kV powerline servitude boundary of 15.5 m in width from the centreline as 1  $\mu$ T and the maximum electric field at a servitude boundary of 15.5 m in width from the centreline as 0.5 kV/m, therefore below the stated guidelines set out by the ICNIRP in 2010. According to data from [www.emfs.info](http://www.emfs.info), the electric and magnetic fields experienced at 12.5 m from the centre line of the proposed alignment will still fall below the guidelines specified by the ICNIRP, therefore the potential for adverse health effects due to long-term exposure to EMF resulting from the proposed powerline is expected to be VERY LOW (-ve).

- Fire (Indirect Impact):

Failure to maintain the powerline and powerline servitude may pose a potential fire risk.

The final significance rating for this impact is INSIGNIFICANT (-ve) with or without mitigation.

The Summary Impact Rating Table for the above-mentioned potential impacts is included below (Table 2).

## 6. Key Management Recommendations

With effective implementation of the Environmental Management Programme (EMPr) included as Appendix F of the BAR, and regular audits throughout construction to monitor and report on compliance with the conditions of the EMPr, it is anticipated that the significance of all negative potential impacts identified can be reduced to low or less.

The following key management measures are included in the EMPr for the construction phase:

- A detailed walk down survey must be conducted once the towers positions are known by an aquatic specialist due to the close proximity of either of the options to the wetlands and water courses. This must also include an opportunity to assess the final design provisions prior to construction to ensure that minimal impact will occur. Once the tower positions are known site specific recommendations could be provided by the specialist;

- Minimise cleared and disturbed areas and use already transformed areas where possible;
- Permits would be required for the relocation of any protected plants, e.g. Yellowwood trees;
- Use existing access roads and where new routes are required use transformed areas wherever possible, most importantly in the CBA areas;
- Tower footprints must be kept to a minimum and if possible outside of the demarcated water course;
- Rehabilitation of cleared areas should be conducted as soon as possible after construction at the specific site;
- Littering and contamination of water sources during construction must be prevented by effective construction camp management;
- All loads shall be secured / enclosed to prevent spillage during transport;
- Implementation of strict traffic safety measures and speed limits for all construction related traffic;
- Appropriate road maintenance programme to be implemented;
- Locations of existing services to be determined and mapped prior to the commencement of construction;
- Should any existing services be damaged as a result of the construction activities, the affected parties should be notified and the relevant actions taken to repair damages as soon as possible;
- If concentrations of archaeological, palaeontological and/ or historical heritage material, marine shells, and/ or human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/ or ECPHRA (043 745 0888) so that systematic and professional investigation/ excavation can be undertaken;
- The contractor shall take all reasonable steps to prevent the pollution of soil and/or groundwater by fuels and oils as a result of his activities;
- No vehicles to refuel within watercourse / wetlands;
- Chemicals used for construction must be stored safely on site and surrounded by bunds. Chemical storage containers must be regularly inspected so that any leaks are detected early;
- Emergency plans must be in place in case of spillages onto road surfaces and water courses;
- The construction camp and necessary ablution facilities meant for construction workers must be beyond the 32m of any of the watercourses;
- Dust suppression techniques, such as wetting or covering potential dust sources, should be implemented to minimise the dust impact if required, especially on windy days;
- No stockpiling should take place within a water course;

- All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds;
  - Stockpiles must be located away from river channels;
  - Erosion and sedimentation into channels must be minimised through the effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed riverbanks;
  - Construction activities should be kept to normal working hours (i.e. 6:00 to 18:00, Monday to Saturday) according to the Noise Control Regulations in terms of the Environmental Conservation Act (Act 73 of 1989) to reduce the noise impact to an acceptable level;
  - Activities that may disrupt neighbours (e.g. delivery trucks, blasting and other excessively noisy activities) must be preceded by notice being given to the affected neighbours at least 24 hours in advance;
  - No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is to be permitted on site;
  - Smoking shall only be permitted in designated smoking areas in the site camp;
  - A fire officer shall be appointed by the contractor who shall be responsible for co-ordinating rapid, appropriate responses in the event of a fire; and
  - Toilets are to be provided by the contractor for workers at a ratio of at least 1 toilet per 20 workers or as per specifications of the supplier, and must be situated in close proximity to all work areas
- Proper rehabilitation as well as monitoring and clearing of alien invasive vegetation by the Contractor, during the course of the construction and defects liability periods, before they become seed bearing;
  - Monitoring for avifaunal mortality along the powerline during maintenance activities and additional mitigation measures such as bird flight diverters should be fitted if there are places where regular mortality occurs; and
  - Emergency plans and procedures should be in place in case of any spills or leaks.

## 7. The Way Forward

The public participation process will give IAPs the opportunity to assist with identification of issues and potential impacts and provides an additional opportunity to gauge 'public acceptance' of the proposed project. The Pre-application DBAR has been released to IAPs, stakeholders and the relevant organs of state for a 30 day review period as per the requirements of the 2014 NEMA EIA Regulations.

Any comments received in response to the Pre-Application DBAR will be integrated into the contents of the Post-Application DBAR, which will also be released for public review for a further period of 30 days.

Thereafter the finalised BAR will be submitted to DEDEAT to make a decision on whether to grant the Environmental Authorisation (EA).

This Executive Summary has been distributed to all IAPs.

A hard copy of the complete Pre-application DBAR will be made available for review at Walmer Public Library.

The report can also be accessed as an electronic copy on SRK Consulting's webpage via the 'Public Documents' link <http://www.srk.co.za/en/page/za-public-documents>

Should you wish to comment on this report, please submit such comment, in writing, by **12h00 on 18 May 2016** to:

Wanda Marais

SRK Consulting

Postal address: P O Box 21842, Port Elizabeth, 6000

Fax: (041) 509 4850

E-mail: [wmarais@srk.co.za](mailto:wmarais@srk.co.za)

The following key management measures are included in the EMPr for the operational phase:

- Regular maintenance of infrastructure, including swift and appropriate repairs if required;
- The powerline servitude shall be kept clear of alien vegetation and dumping;
- In the event that illegal dumping is observed along the power line alignment, then the NMBM's Electricity and Energy personnel shall notify the NMBM cleansing/ waste management personnel;
- Should illegal dumping persist, then the NMBM Electricity and Energy Business Unit shall consult with the NMBM's waste management personnel to identify methods (e.g. bollards restricting access or lockable entrance points) for reducing instances of illegal dumping;

**Table 1: Issues raised by Interested and Affected Parties in response to the BID**

Interested and/or Affected Party	Issue raised	Response
<b>Comments relating to the process</b>		
J Baeyens - Capeco	The Background Information Document was only forwarded to Capeco on 18 February 2016, two working days before the deadline for comment.	[SRK] Please refer to Appendix E2 containing a delivery receipt for the BID forwarded per email to Capeco on 20 January 2016. The email of 18 February 2016 was a reminder of the deadline for comment on the BID, which expired at 12h00 on 22 February 2016. Capeco was thus afforded 32 calendar days to submit their initial comments. Further opportunities to comment will be provided on the Pre-Application DBAR (this report) as well as the Post-Application DBAR.
Cllr G Rautenbach – Ward 8 Councillor	Why was the ward 8 office not informed of the project?	[SRK] Please refer to Appendix E2 containing a delivery receipt for the BID serving as notice of the project and requesting initial comments, forwarded to the Ward 8 office on 20 January 2016. A reminder of the deadline was also forwarded on 18 February 2016. SRK has, incorporated the Councillor's comments received on 2 March 2016. Further opportunities to comment will be provided on the Pre-Application DBAR (this report) as well as the Post-Application DBAR.
J Baeyens - Capeco	Require the names and contact details of all IAPs and stakeholders.	[SRK] A list of all notified and registered parties appears in Appendix E5 of the Pre-Application DBAR (this report).
J Baeyens - Capeco	The BID does not specify crucial elements pertaining to electricity masts, location of servitudes, design etc.	[SRK] The purpose of the BID is to alert potential IAPs of the proposed project. More detailed information will be provided in the Pre-Application DBAR (this report).
M Crocker – Capeco W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Regulations pertaining to EIA state that applicant must first obtain written consent of landowner to undertake the activity before applying for environmental authorisation. No written consent has been sought or obtained in respect of erf 1226 Fairview. No servitude is registered in favour of the municipality or Eskom over the property and no special conditions in favour of Eskom is reflected on the title deed.	[SRK] According to regulation 39(2) of the NEMA 2014 EIA Regulations, written consent is not required for linear activities. In this Basic Assessment process all landowners were notified of the proposed activity and will have various opportunities to comment on the assessment. The registration of a servitude is a process that falls outside the EIA Regulations and will be conducted by the NMBM.
Cllr G Rautenbach – Ward 8 Councillor	When was the public consultation for the project conducted?	[SRK] The public participation process is still ongoing and commenced with the distribution of the BID. The BID (Appendix E1) contains a flow diagram which sets out the process and indicates further opportunities for public input.
<b>Comments relating to design</b>		
E van Wyngaardt – Local Resident	Section A to B should not require to be overhead as an underground pipe (conduit) exists.	[NMBM] The option of underground cables for additional sections of the route is not financially feasible. [SRK] Please refer to section A(2) of the Pre-Application DBAR for a discussion on project alternatives.
M Crocker - Capeco	Capeco will not permit overhead cables to run through its property (erf 1126 Fariview), however will accommodate proposal if electrical supply is placed underground.  We will consider option of underground installation from numbers G,E1 to E and GF to E respectively as you only need a servitude width of 1.5m.	[NMBM] Comment noted. The option of underground cables for additional sections of the route is not financially feasible. [SRK] Please refer to section A(2) of the Pre-Application DBAR for a discussion on project alternatives.

Interested and/or Affected Party	Issue raised	Response
R van Schalkwyk – Local Resident W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Underground cable is a better option.	[NMBM] The option of underground cables for additional sections of the route is not financially feasible. [SRK] Please refer to section A(2) of the Pre-Application DBAR for a discussion on project alternatives.
R Odendaal – Ward 3 Councillor	Alternatives to high level masts must be investigated.	[NMBM] The option of underground cables for additional sections of the route is not financially feasible. [SRK] Please refer to section A(2) of the Pre-Application DBAR for a discussion on project alternatives.
R van Schalkwyk – Local Resident	Oppose the erection of petechane style towers in the area between points A & C.	[SRK] Comment noted.
R vanderlinden – Local Resident	Powerlines should be placed on the other side of the railway line towards Lorraine and not Lorraine Manor and Lovemore Heights.	[NMBM] The option of installing the powerline on the railway side was initially considered, but due to the plans of refurbishing the railway line this option is practically not feasible. Space is a limitation for the clearance between the proposed powerline and the railway line.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Eskom guideline provides that for a 132 kV powerline a minimum width is 18 m from the centerline of the powerline, thus minimum servitude distance of 36 m. However BID indicated a servitude width of 25 m.	[Bosch Stemele – Project Engineers] The Municipal By-Laws allow for a 25 m servitude.
<b>Comments relating to the environment</b>		
NR Jali – Local Resident	Presence of guinea fowl in the Overbaakens area that will be affected by the bush clearing.	[SRK] All potential impacts, including wildlife, are discussed in section D(2) of the Pre-Application DBAR (this report), including proposed mitigation measures.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Aboveground powerlines will affect animals and birdlife in the area. Animals will suffer loss of habitat and environmental look would be unsightly.	[SRK] All potential impacts, including wildlife and avifauna, are discussed in section D(2) of the Pre-Application DBAR (this report) including proposed mitigation measures.
NR Jali – Local Resident	Area in Overbaakens is used by people as a dumping site.	[SRK] Comment noted. Please refer to section D(2) of the Pre-Application DBAR (this report) for a discussion on potential impacts, including waste management, as well as proposed mitigation measures.
J Baeyens - Capeco	The proposed alignment crosses over onto property owned by Capeco and classified as 'sensitive ecological areas' in our RoD.	[SRK] All potential impacts, including terrestrial and aquatic areas and resources, are discussed in section D(2) of the Pre-Application DBAR (this report). An Aquatic Impact Assessment has also been conducted by a specialist and is included in Appendix D of the Pre-Application DBAR.
M Crocker - Capeco	Water channel along which the electrical supply is proposed to run is sensitive no-go area together with a 100 year floodline which has already encroached and minimized the footprints of our approved development rights (as per approved RoD ECm1/LN1&3/M/12-88)	[SRK] All potential impacts, including terrestrial and aquatic areas and resources, are discussed in section D(2) of the Pre-Application DBAR (this report). An Aquatic Impact Assessment has also been conducted by a specialist and is included in Appendix D of the Pre-Application DBAR.
<b>Comments relating to social impacts</b>		
E van Wyngaardt – Local Resident R van Schalkwyk – Local Resident	Open space is utilised by public for various recreational activities which overhead powerlines would interfere with.	[SRK] Comment noted. It is not clear from the comment what recreational activities are referred to. Please refer to section D(2) of the Pre-Application DBAR (this report) for a discussion on potential impacts as well as proposed mitigation measures.
NR Jali – Local Resident	Proposed alignment crosses over a path used by residents as a shortcut to the shops.	[SRK]. Comment noted. The proposed powerline will not impact on pedestrians visiting the nearby shops.

Interested and/or Affected Party	Issue raised	Response
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	A cultural heritage expert must be consulted. The natural landscape would be negatively affected by aboveground powerlines.	[SRK] All potential impacts, including archaeological and palaeontological impacts, are discussed in section D(2) of the Pre-Application DBAR (this report). Specialist input is included in Appendix D of the Pre-Application DBAR. The report will be submitted to the heritage authorities, who will comment on the need to assess impact on cultural landscapes. To SRK's knowledge, the visual quality of the area does not enjoy special protection in terms of the National Heritage Resources Act (Act No. 25 of 1999).
<b>Comments relating to the economic impacts</b>		
R vanderlinden – Local Resident M Crocker – Capeco R Odendaal – Ward 3 Councillor	Depreciation of property values due to presence of overhead powerlines.	[SRK] Comment noted. Please refer to section D(2) of the Pre-Application DBAR (this report) for a discussion on potential impacts, which includes impact assessment on property values.
M Crocker – Capeco W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Erf 1226 Fairview has approval for residential development and the potential for negative financial impact on the landowner must be considered.	[SRK] Comment noted.
M Crocker – Capeco R Odendaal – Ward 3 councillor	Construction of high level masts will have a negative impact on future growth and development in the area.	[SRK] A clear reason is not provided regarding how high level masts would limit future growth and development in the area. In terms of the electricity provision, the distribution network is critical to enhance development growth in the larger area.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Maintenance of aboveground powerlines is costly compared to underground cables.	[Bosch Stemele – Project Engineers] Maintenance cost of overhead line is not that much higher and if the capital cost of underground cable is considered, the maintenance cost of overhead lines becomes immaterial.
<b>Comments relating to the visual impacts</b>		
J Baeyens - Capeco	Since no pictures of the visual impact are included, IAPs cannot judge the necessity to register.	[SRK] The purpose of the BID is to alert potential IAPs of the proposed project. Further opportunities to comment are provided by the distribution of this Pre-application DBAR (this report), and following the commencement of the formal Basic Assessment process, the Post Application DBAR.
M Crocker - Capeco	Visual impact will impact viability of the area as a residential intensification and infill node. Will negatively impact character of the area.	[SRK] All potential impacts, including visual impacts, are evaluated and discussed in section D(2) of the Pre-Application DBAR (this report), including proposed mitigation measures.
<b>Comments relating to safety concerns</b>		
M Crocker – Capeco R Odendall – Ward 3 Councillor	Concern regarding electromagnetic radiation from masts.	[SRK] All potential impacts, including the electromagnetic field (EMF), are discussed in section D(2) of the Pre-Application DBAR (this report).
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Aboveground powerlines create health risks which place cost and burden on the state.	[SRK] All potential impacts, including health risks associate with powerlines in general, are discussed in section D(2) of the Pre-Application DBAR (this report). It is unclear whether this comment refers to health risks that are specific to overhead powerlines as opposed to health risks that are specific to underground powerlines.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Aboveground powerlines pose health danger to schools, residential areas and a soon-to-be hospital nearby.	[SRK] Note that no specifics are mentioned regarding the type of health dangers referred to in the comment. All potential impacts, including health risks associate with powerlines in general, are discussed in section D(2) of the DBAR (this report).
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Fire hazards would be negated by underground cables.	[SRK] All potential impacts, including fire, are discussed in section D(2) of the Pre-Application DBAR (this report), including proposed mitigation measures.



Interested and/or Affected Party	Issue raised	Response
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd A cultural heritage expert must be consulted. The natural landscape would be negatively affected by aboveground powerlines.	Aboveground powerlines will affect the functioning of hospital's equipment.	[SRK] It is not clear in what way the proposed powerline could affect equipment used in the hospital that is to be constructed. Also, it is unclear whether this comment refers to risks that are specific to overhead powerlines as opposed to risks that are specific to underground powerlines. Note that all potential impacts are discussed in section D(2) of the Pre-Application DBAR (this report), including proposed mitigation measures.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Discussion of foreign law pertaining to issue of electromagnetic frequency.	[SRK] This BA process is conducted according to South African legislation. No comparative legislation applies. All potential impacts, including electromagnetic field (EMF), are discussed in section D(2) of the Pre-Application DBAR (this report). An underlying assumption is that design standards, including buffers for powerlines, as applied by the NMBM, already incorporate health and safety considerations consistent with international standards.
<b>Comments of a general nature</b>		
E van Wyngaardt – Local Resident	All the residents of Macon Road object to an overhead line in front of our houses.	[SRK] Note that <u>no</u> signed petition was included to confirm that all residents of Macon Road object to the overhead powerline.
NR Jali – Local Resident	At this stage I do not know if I will be affected by the powerline however, point K is almost at my backyard.	[SRK] Please refer to map in Appedix A indicating property details in the surrounding area. The proposed powerline does not extend across your property.
M Crocker - Capeco	Provided hard copy of full objection submitted in respect of previous EIA carried out by Coastal and Environmental Services (CES).	[SRK] Noted and acknowledged. All objections contained in the document which are applicable and relevant to the current BA have been dealt with under the specific headings in this Comments & Responses Table.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Applicant must in terms of NEMA implement mitigation measures. Mitigation measure would be to construct an underground cable system.	[SRK] The option of installing an underground cable for the entire route has been eliminated during the design phase of the proposed development due to costs. Please see the discussion regarding alternatives in section A(2) of the Pre-Application DBAR.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Applicant must consider any feasible and reasonable alternatives to the activity, such as underground cables.	[NMBM] The option of installing an underground cable for the entire route was eliminated during the design phase of the proposed development due to costs. [SRK] Please see the discussion regarding alternatives in section A(2) of the Pre-Application DBAR.
W Parker (JGS) – obo Stylestar Properties 191 (Pty) Ltd	Eskom is bound by the constitutionally guaranteed right to an environment which is not harmful to your health or wellbeing, which is not achieved by aboveground powerlines.	[SRK] Note that the NMBM is the applicant for this proposed powerline. The environmental basic assessment process is conducted to assess any potential impacts that could result from the proposed activity including impacts to health and well-being. Please refer to section D(2) of the Pre-Application DBAR for a discussion on all potential impacts, including recommended mitigation measures.

**Table 2: Summary Impact Rating Table**

IMPACT	CONSTRUCTION				OPERATION			
	WITHOUT MITIGATION		WITH MITIGATION		WITHOUT MITIGATION		WITH MITIGATION	
Impacts on Biodiversity	Low	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Traffic	Very Low	- ve	Very Low	- ve	N/A		N/A	
Impacts on Wildlife	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Noise Impacts	Very Low	- ve	Very Low	- ve	Very Low	- ve	Very Low	- ve
Impacts on Existing Infrastructure and Private Property	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Aquatic Impact 1: Changes to Hydrological Regime and increased potential for erosion	Low	- ve	Insignificant	- ve	N/A		N/A	
Aquatic Impact 2: Impact of Changes to Water Quality	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Aquatic Impact 3: Loss of Wetland Vegetation / Aquatic Habitat	Low	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Archaeological Resources	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Palaeontological Resources	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Air Quality	Very Low	- ve	Very Low	- ve	N/A		N/A	
Waste Management	Low	- ve	Insignificant	- ve	N/A		N/A	
Socio-economic Impacts	Very Low	+ ve	Very Low	+ ve	Medium	+ ve	Medium	+ ve
Impacts on Aquatic Resources (Cumulative)	Insignificant	- ve	Insignificant	- ve	N/A		N/A	
Visual / Aesthetic Impacts	N/A		N/A		Low	- ve	Low	- ve
Impacts on Avifauna	N/A		N/A		Low	- ve	Very Low	- ve
Property Ownership / Value	N/A		N/A		Low	- ve	Low	- ve
EMF (Electro-Magnetic Field)	N/A		N/A		Very Low	- ve	Very Low	- ve
Fire (Indirect)	N/A		N/A		Insignificant	- ve	Insignificant	- ve

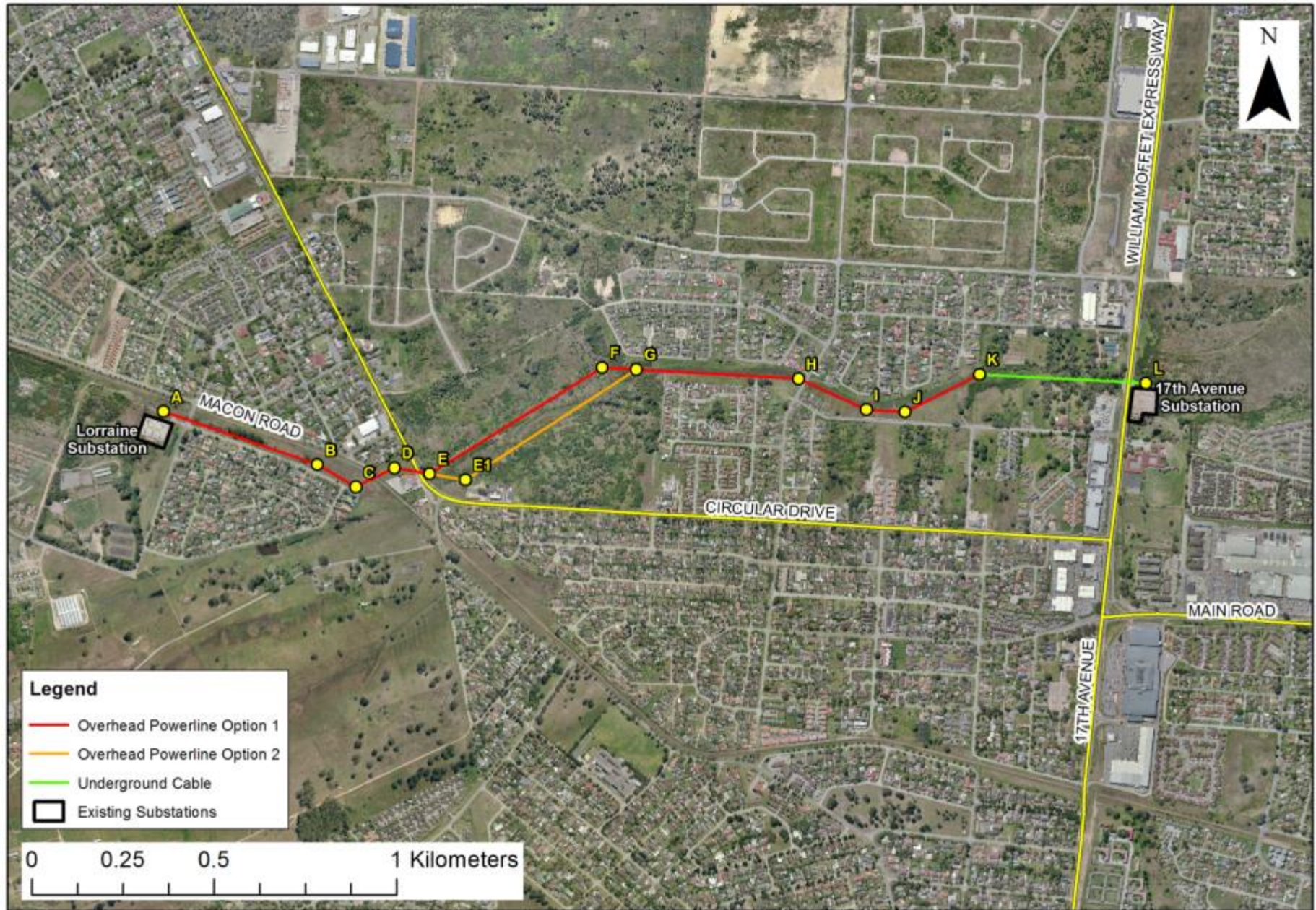


Figure 2: Site Locality Plan

## **Section 2: DEDEAT Basic Assessment Report**

## Content of Report

The EIA Regulations, 2014 (Government Notice (GN) 982, Appendix 3, Part 3) prescribe the required content in a BA Report. These requirements and the sections of this BA Report in which they are addressed, are summarised in Table 1.

**Table 1: Content of BA Report as per EIA Regulations, 2014**

<b>GN 982, Appendix 3 Ref.</b>	<b>Item</b>	<b>Section Reference</b>
(3) (a) (i)	Details of the Environmental Assessment Practitioner (EAP) who prepared the report	Appendix J
(3) (a) (ii)	The expertise of the EAP, including a Curriculum Vitae	Appendix I
(3) (b) (i)	The 21 digit Surveyor General code of the property/ properties	Appendix K
(3) (b) (ii)	The physical address and farm name (where available)	Appendix K
(3) (b) (iii)	The coordinates of the boundary of the property/ properties (Where (3) (b) (i) and (3) (b) (ii) are not available)	n/a
(3) (c)	A plan indicating the location of the proposed activity/ activities and associated infrastructure, or:	Appendix A
(3) (c) (i)	For linear activities: a description and coordinates of the corridor in which the proposed activity/ activities is to be undertaken	Appendix G
(3) (c) (ii)	On land where the property has not been defined, the coordinates within which the activity is to be undertaken	n/a
(3) (d)	A description of the scope of the proposed activity/ activities, including:	BAR, Section A
(3) (d) (i)	All listed and specified activities trigger and being applied for	BAR, Section A (10)
(3) (d) (ii)	A description of the activities and associated structures and infrastructure related to the development	BAR, Section A (1)
(3) (e)	A description of the policy and legislative context and an explanation of how the proposed development complies with and responds to the legislative and policy context	BAR, Section A (10)
(3) (f)	A motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred location	BAR, Section A (9)(b)
(3) (g)	A motivation for the preferred site, activity and technological alternative	BAR, Section A (9)(b)
(3) (h)	A full description of the process followed to reach the proposed development footprint within the approved site, including:	Addressed below
(3) (h) (i)	Details of all the alternatives considered	BAR, Section A (2)
(3) (h) (ii)	Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs	BAR, Section C & Appendix E
(3) (h) (iii)	A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them	BAR, Section D(1) & Appendix E
(3) (h) (iv)	The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects	BAR, Section B
(3) (h) (v)	The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts: a) can be reversed, b) may cause irreplaceable loss of resources, and c) can be avoided, managed or mitigated	BAR, Section D (2) & Appendix H

GN 982, Appendix 3 Ref.	Item	Section Reference
(3) (h) (vi)	The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives	Appendix H
(3) (h) (vii)	Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected, focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects	BAR, Section D (2)
(3) (h) (viii)	The possible mitigation measures that could be applied and level of residual risk	BAR, Section D (2)
(3) (h) (ix)	The outcome of the site selection matrix	n/a
(3) (h) (x)	If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and	BAR, Section A (2)
(3) (h) (xi)	A concluding statement indicating the preferred alternatives, including preferred location of the activity	BAR, Section D (3)
(3) (i)	A full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred location through the life of the activity, including:	Addressed below
(3) (i) (i)	A description of all environmental issues and risks that were identified during the environmental impact assessment process	See BAR, Section D (2)
(3) (i) (ii)	An assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures	BAR, Section D (2) & Appendix H
(3) (j)	An assessment of each identified potentially significant impact and risk, including:	Appendix H
(3) (j) (i)	Cumulative impacts	BAR, Section D (2)
(3) (j) (ii)	The nature, significance and consequences of the impact and risk	BAR, Section D (2) & Appendix H
(3) (j) (iii)	The extent and duration of the impact and risk	Appendix H
(3) (j) (iv)	The probability of the impact and risk occurring	Appendix H
(3) (j) (v)	The degree to which the impact and risk can be reversed	Appendix H
(3) (j) (vi)	The degree to which the impact and risk may cause irreplaceable loss of resources	Appendix H
(3) (j) (vii)	The degree to which the impact and risk can be avoided, managed or mitigated	Appendix H
(3) (k)	Where applicable, a summary of the findings and recommendations of any specialist report and an indication as to how these findings and recommendations have been included in the final assessment report	BAR, Section B
(3) (l)	An Environmental Impact Statement (EIS) which contains:	BAR, Section D (3)
(3) (l) (i)	A summary of the key findings of the environmental impact assessment	BAR, Section D (3)
(3) (l) (ii)	A map at an appropriate scale which superimposes the proposed activity and its associated structures and the infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers	Appendix A
(3) (l) (iii)	A summary of the positive and negative impacts and risks of the proposed activity and identified alternatives	BAR, Section D (3) & Appendix H
(3) (m)	Based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMP	BAR, Section E
(3) (n)	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation	BAR, Section E
(3) (o)	A description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;	BAR, Section E

GN 982, Appendix 3 Ref.	Item	Section Reference
(3) (p)	A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	BAR, Section E
(3) (q)	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded and the post construction monitoring requirements finalised	BAR, Section E
(3) (r)	An undertaking under oath or affirmation by the EAP in relation to	Appendix J
(3) (r) (i)	The correctness of the information provided in the reports	Appendix J
(3) (r) (ii)	The inclusion of comments and inputs from stakeholders and I&APs	Appendix J
(3) (r) (iii)	The inclusion of inputs and recommendations from the specialist reports where relevant	Appendix J
(3) (r) (iv)	Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties	Appendix J
(3) (s)	Where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts	n/a
(3) (t)	Any specific information that may be required by the competent authority	Appendix G
(3) (u)	Any other matters required in terms of section 24(4)(a) and (b) of the Act	None identified



## BASIC ASSESSMENT REPORT

(For official use only)

**File Reference Number:**

**Application Number:**

**Date Received:**


Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998(Act No. 107 of 1998), as amended.

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**Kindly note that:**

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable or **black out** the boxes that are not applicable in the report.
4. An incomplete report may be returned to the applicant for revision.





5. The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner (EAP).
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.



## SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES	NO
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If YES, please complete form XX for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

### 1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail

The proposed development involves a double circuit 132 kV powerline from the existing Lorraine 132 kV substation to the existing 132 kV 17<sup>th</sup> Avenue substation.

The proposed infrastructure will provide for future load growth in this area. Many commercial and residential developments are envisaged by landowners requiring additional capacity to be installed.

The proposed route is approximately 2.8 km long and will cross private properties as well as NMBM owned land (Please refer to Ownership Map in Appendix A).. An overhead powerline is proposed up to point K on the plan from where an underground cable will be installed and under William Moffet Drive to the eastern side of the existing 17<sup>th</sup> Avenue substation. Note that an upgrade to this substation is underway within the existing footprint and falls outside the scope of this application and process.

The following infrastructure specifications are relevant:

- All overhead lines will be constructed with dual circuit 132 kV monopole self-supporting steel structures, with servitude width of 25 m;
- Maximum span lengths are limited by line alignment but could be between 140 m and 180 m;
- Should the 'Petechane' tower type be used the servitude may be reduced to 16 m. The use of the 'Petechane' tower circuit will depend on soil conditions prevalent along the proposed alignment. A geotechnical investigation will be conducted in the detailed design stage to establish the soil conditions along the proposed alignment;
- A servitude width of 1.5 m is required for the underground cables between points K and L on the map;
- The powerline will be positioned not closer than 12.5 m from the railway line; and
- Where relevant, tower footing foundations will be specially designed for towers



placed near or in a watercourse.

Detailed maps including locality, ownership, environmental sensitivities, landuse, vegetation and existing services can be found in Appendix A of this report. For more information regarding the proposed tower circuit designs please refer to Appendix C.

## 2. FEASIBLE AND REASONABLE ALTERNATIVES

**“alternatives”**, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

**Paragraphs 3 – 13 below should be completed for each alternative.**

*The section below was added by SRK Consulting and is additional to the information in the original Basic Assessment Report form:*

### **Description of Alternatives**

#### **Site Alternatives:**

Two alternative route alignments were proposed by the project engineers (please refer to Appendix A). The route alignment from Lorraine to 17th Avenue Substation follows the railway line from the Lorraine substation, thereafter it crosses Circular Drive and follows the waterway up to 17th Avenue, where it crosses over William Moffet Drive and terminates at the existing 17th Avenue substation.

Due to availability of land only one route was considered between the Lorraine substation and Circular Drive (namely point A to point E). Two alternative routes were investigated from the Circular Drive



crossing onwards.

**i. Option 1: Point A,B,C,D,E,F,H,I,J,K & L (red alignment on the layout plan)**

A to E: From Lorraine substation the route follows the railway line up to the point where it swings north to cross erf 271 (this proposed section is overhead using “Petechane” structure type).

E to K From the overhead structure at point E the route connects to point K via an overhead structure (either two single monopole circuits or “Petechane” tower). The exact position of point K is dependent upon soil conditions and floodline restrictions

K to L From the overhead structure at point K, the alignment then goes via an underground cable, which will go under William Moffet Drive to the eastern side of the existing 132 kV substation. The underground cable will be one uninterrupted length of cable approximately 420 m long.

**i. Option 2: Point A,B,C,D,E1,G,H,I,J,K & L (orange alignment on the layout plan)**

A to E1: From Lorraine substation the route follows the railway line up to the point where it swings north to cross erf 271 (this proposed section will be overhead using “Petechane” structure type).

E1 to K From the overhead structure at point E1 the route connects to point K (on the Northern side of Circular Drive) via an overhead structure (either two single monopole circuits or “Petechane” tower). The exact position of point K is dependent upon soil conditions and floodline restrictions.

K to L From the overhead structure at point K, the alignment then goes via an underground cable, which will go under William Moffet Drive to the eastern side of the existing 132 kV substation. The underground cable will be one uninterrupted length of cable approximately 420 m long.

Both alignment alternatives have been included in the environmental assessment and specialists were requested to comment on the suitability and potential impacts of each alternative. A preferred alternative has not been identified by the applicant.

**Activity Alternatives:**

The proposed development has been planned to accommodate envisioned future load growth requirements in the area and surrounds. The development is aimed specifically at addressing this future growth demands and therefore no activity alternatives have been considered.

**Design/ Layout Alternatives:**

Distribution of electricity can be conducted via overhead powerline or underground cable. The proposed 132 kV powerline has mainly been designed as an overhead powerline due to the costs related to underground cables. Installation of underground cables is approximately four times more expensive



than the alternative and will only be used when no other options are available. An underground cable is proposed from point K to L on the Locality Plan due to an unsuitable soil condition coupled with horizontal and vertical clearance issues (William Moffet Drive, existing buildings, etc).

**Technological Alternatives:**

Two types of overhead structures have been considered for the overhead sections of the route alignment, namely, two single parallel monopole structures or a “Petechane” tower circuit (see Appendix C for design examples). The single monopole structure circuit will require a servitude of 25 m in width with a maximum span length of between 140 m and 180 m. The “Petechane” tower circuit only requires a 16 m wide servitude, however tower footing foundations will have to be specifically designed for towers placed near or in the watercourse. The use of the ‘Petechane’ tower circuit is dependent on the soil conditions present along the proposed route alignment. A geotechnical investigation will be conducted during the detailed design stage to establish the soil conditions along the proposed alignment. Once the findings of the geotechnical investigation are available the appropriate tower circuit will be selected. Where possible, the “Petechane” tower circuit will be used. Impact rating has been done for the ‘worst case scenario’ option, i.e. single monopole structure circuit with a 25 m servitude.

**No-go Alternative:**

The No-go alternative will result in no augmentation of the current 132 kV grid.

**3. ACTIVITY POSITION**

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

List alternative sites if applicable.

**Alternative:**

Alternative S1<sup>1</sup>

Alternative S2 (if any)

Alternative S3 (if any)

Latitude (S):

Longitude (E):

°	'	°	'
°	'	°	'

**In the case of linear activities:**

**Alternative:**

Latitude (S):

Longitude (E):

Please refer to Appendix A for coordinates taken every 250 meters along the route for each alternative alignment.

Alternative S2 (if any)

- Starting point of the activity

°	'	°	'
---	---	---	---

<sup>1</sup> “Alternative S..” refer to site alternatives.



- Middle point of the activity
- End point of the activity

o	'	o	'
o	'	o	'

Alternative S3 (if any)

- Starting point of the activity
- Middle point of the activity
- End point of the activity

o	'	o	'
o	'	o	'
o	'	o	'

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

#### 4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

**Alternative:**

Alternative A1<sup>2</sup> (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

or, for linear activities:

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

**Size of the activity:**

m <sup>2</sup>
m <sup>2</sup>
m <sup>2</sup>

**Length of the activity:**

2,915 m
2,925 m
m

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

**Size of the site/servitude:**

72,875 m <sup>2</sup> (maximum servitude size)
73,125 m <sup>2</sup> (maximum servitude size)
m <sup>2</sup>

#### 5. SITE ACCESS

Does ready access to the site exist?

<del>YES</del>	
----------------	--

If NO, what is the distance over which a new access road will be built

m
---

Describe the type of access road planned:

<sup>2</sup> "Alternative A.." refer to activity, process, technology or other alternatives.



Existing roads (William Moffet Drive, Circular Drive, Oak Road and Dijon Road) will be used for the construction and operational phases of the development. Access to the 17<sup>th</sup> Avenue substation for the delivery of equipment and maintenance purposes will be via a purpose built off-ramp from William Moffet Drive. Minimal access roads may be required along the section east of Circular Drive.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

## 6. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - rivers;
  - the 1:100 year flood line (where available or where it is required by DWA);
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.9 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.10 the positions from where photographs of the site were taken.



**7. SITE PHOTOGRAPHS**

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

**8. FACILITY ILLUSTRATION**

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

**9. ACTIVITY MOTIVATION**

**9(a) Socio-economic value of the activity**

What is the expected capital value of the activity on completion?

R6,6m
N/A
YES
YES
10
Not available at this stage
35 %
0
N/A
N/A

What is the expected yearly income that will be generated by or as a result of the activity?

Will the activity contribute to service infrastructure?

Is the activity a public amenity?

How many new employment opportunities will be created in the development phase of the activity?

What is the expected value of the employment opportunities during the development phase?

What percentage of this will accrue to previously disadvantaged individuals?

How many permanent new employment opportunities will be created during the operational phase of the activity?

What is the expected current value of the employment opportunities during the first 10 years?

What percentage of this will accrue to previously disadvantaged individuals?





**9(b) Need and desirability of the activity**

Motivate and explain the need and desirability of the activity (including demand for the activity):

In 2009 the substation at 17<sup>th</sup> Avenue Walmer was damaged. The load on the substation prior to the damage was 18 MVA. The Nelson Mandela Bay Municipality has predicted a long-term load forecast of about 50 MVA. The predicted load increase is due to residential developments in nearby Fairview, as well as commercial developments along William Moffet Drive and Circular Drive.

The proposed 132kV powerline will connect the Walmer 17<sup>th</sup> Avenue substation to the 132kV grid via the Lorraine substation. This will stabilise the electricity supply and provide for the predicted future load growth in the area.

Indicate any benefits that the activity will have for society in general:

The proposed powerline will enhance Nelson Mandela Bay’s energy supply. The NMBM IDP 2011-2016 identifies Ward 4 and Ward 6 as eligible for electricity upgrades and infrastructure restoration. The proposed alignment is situated within both, ward 4 and ward 6 (as well as a section of ward 8).

Indicate any benefits that the activity will have for the local communities where the activity will be located:

The proposed powerline will supply electricity to future proposed residential and commercial developments along the route and greater area as well as supplement the current energy demands of existing residential and commercial properties along the route.

**10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES**

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
National Environmental Management Act (NEMA) No. 107 of 1998	DEA	1998
Environmental Impact Assessment Regulations (Government Notice No. R. 983 & 985 )	DEA	Dec 2014
Electricity Regulations Act (No 4 of 2006)	NERSA	2006
Nelson Mandela Bay Municipality Integrated Development Plan (IDP) 2015/2016	Nelson Mandela Bay Local Municipality	April 2015
Nelson Mandela Bay Municipality: Metropolitan Spatial Development Framework	Nelson Mandela Bay Local Municipality	2015
Eastern Cape Biodiversity Conservation Plan	DEA	2007



National Water Act (No 36 of 1998)	DWS	1998
Noise Control Regulations in terms of the Environmental Conservation Act (Act 73 of 1989)	DEA	10 January 1992
Government Gazette No. 38108: Guideline Series 9 Need and Desirability	DEA	October 2014
Government Gazette No. 35769: Guideline Series 7 Public Participation in the EIA process	DEA	October 2012

The section below was added by SRK Consulting and is additional to the information in the original Basic Assessment Report form:

#### Policy and Legislative Context

##### **National Environmental Management Act (Act No. 107 of 1998) (as amended)**

The National Environmental Management Act, 1998 (Act No. 107 of 1998) [NEMA] and the Environmental Impact Assessment Regulations (GN R 983 – 985, 04 December 2014) published there under, set out a set of schedules of listed activities that may not be undertaken without Environmental Authorisation from a competent authority. The Basic Assessment process is prescribed by the EIA Regulations (2014) as a prerequisite to obtaining a decision from the Department of Environmental Affairs (DEA) in terms of the NEMA for the listed activities applied for. The relevant listed activities are detailed below:

*GNR. 983 Item 19: The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from –*

- i. a watercourse*

*GNR. 985 Item 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where the clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan*

- a. In Eastern Cape:
 
  - ii. Within critical biodiversity areas identified in bioregional plans;*
  - iv. On land, where, at the time of coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.**

*GNR. 985 Item 14: The development of—*

- xii. Infrastructure or structures with a physical footprint of 10 square metres or more
 
  - c. In Eastern Cape:
 
    - iii. In urban areas:
 
      - aa. Areas zoned for use as public open space****



*bb. Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, zoned for conservation purpose.*

**Electricity Regulations Act (No 4 of 2006)**

All generation, transmission or distribution of electricity is regulated by the Electricity Regulations Act (No 4 of 2006) and are therefore governed by the regulations set out in the Act.

**Nelson Mandela Bay Municipality Integrated Development Plan (IDP) 2015/2016**

All municipal planning and projects are required to occur in accordance with the latest IDP.

**Nelson Mandela Bay Municipality: Metropolitan Spatial Development Framework**

All municipal planning is required to be in accordance with the latest municipal spatial development framework.

**Eastern Cape Biodiversity Conservation Plan**

The proposed alignment (including both alternatives) falls within the boundaries of the Critical Biodiversity Areas (CBAs) as identified within the Eastern Cape Biodiversity Conservation Plan.

**National Water Act (No 36 of 1998)**

The proposed alignment follows a watercourse for a length and therefore will require a water use license, specifically a *section 21 c* (impeding or diverting the flow of water in a watercourse) & *i* (altering the bed, banks, course or characteristics of a watercourse) license.

**Noise Control Regulations in terms of the Environmental Conservation Act (Act 73 of 1989)**

Noise related to the construction related activities as well as operational noise resulting from the transmission of electricity along the proposed powerlines must be in accordance with the regulations specified within section 25 (Regulations regarding noise, vibration and shock) of this Act.

**11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT**

**11(a) Solid waste management**

Will the activity produce solid construction waste during the construction/initiation phase?

If yes, what estimated quantity will be produced per month?

YES	
Minor Quantities	



How will the construction solid waste be disposed of (describe)?

All solid waste generated during the construction process (including plastic, rubble, waste metals, etc.) will be placed in a bulk waste collection area in the contractor's site camp. The waste will be cleared regularly by the appointed contractor and disposed of at a registered landfill site. Litter collection bins will be provided and will be appropriately placed within the contractor's site camp and on site, and will be regularly cleared. Separation of waste and recycling of paper, glass, etc. will be encouraged. Burning or burying of waste will not be allowed. Unutilised construction materials will be removed once construction has been completed.

Where will the construction solid waste be disposed of (describe)?

Construction waste will be disposed of at the nearest municipal landfill site (Arlington landfill site).

Will the activity produce solid waste during its operational phase?

YES	<del>NO</del>
-----	---------------

If yes, what estimated quantity will be produced per month?

N/A

How will the solid waste be disposed of (describe)?

N/A

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

N/A

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

	<del>NO</del>
--	---------------

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?

	<del>NO</del>
--	---------------

If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

**11(b) Liquid effluent**

Will the activity produce effluent, other than normal sewage, that will be disposed of in

YES	<del>NO</del>
-----	---------------



a municipal sewage system?

	<del>NO</del>
--	---------------

If yes, what estimated quantity will be produced per month?

N/A	
-----	--

Will the activity produce any effluent that will be treated and/or disposed of on site?

Yes	<del>NO</del>
-----	---------------

N/A	
-----	--

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	<del>NO</del>
-----	---------------

If yes, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

N/A	
-----	--

**11(c) Emissions into the atmosphere**

Will the activity release emissions into the atmosphere?

	<del>NO</del>
--	---------------

If yes, is it controlled by any legislation of any sphere of government?

YES	NO
-----	----

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

N/A	
-----	--



**11(d) Generation of noise**

Will the activity generate noise?

<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

If yes, is it controlled by any legislation of any sphere of government?

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

During the construction period, noise will be generated temporarily due to the use of construction plant and machinery. Construction activities involving use of the noisy vehicles, machinery, hammering, etc. must be limited to normal working hours (i.e. 6:00 to 18:00, Monday to Saturday).

**12. WATER USE**

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

<input checked="" type="checkbox"/> Municipal (during construction)	<input type="checkbox"/> water board	<input type="checkbox"/> groundwater	<input type="checkbox"/> river, stream, dam or lake	<input type="checkbox"/> other	<input checked="" type="checkbox"/> the activity will not use water (during operation)
--	--------------------------------------	--------------------------------------	--	--------------------------------	---

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:

Minimal quantities of water will be used during construction
<input type="checkbox"/> <input checked="" type="checkbox"/> NO

Does the activity require a water use permit from the Department of Water Affairs?

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

It must be noted that under no circumstances may any water be extracted from the watercourse without the relevant permit from the Department of Water and Sanitation (DWS).



### 13. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

The proposed activity involves supply/ distribution of energy and therefore does not have any energy requirements.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

N/A



## SECTION B: SITE/ AREA/ PROPERTY DESCRIPTION

**Important notes:**

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No. (e.g.   
A):

- Paragraphs 1 - 6 below must be completed for each alternative.

- Has a specialist been consulted to assist with the completion of this section?   NO

If YES, please complete form XX for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

### 1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

**Alternative S1 (Option 1)**

<input checked="" style="width: 100%; height: 100%; background-color: #cccccc;" type="checkbox"/> Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
--	-------------	-------------	-------------	--------------	-------------	---------------------

**Alternative S2 (Option 2):**

<input checked="" style="width: 100%; height: 100%; background-color: #cccccc;" type="checkbox"/> Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
--	-------------	-------------	-------------	--------------	-------------	---------------------

**Alternative S3 (if any):**

<input type="checkbox"/> Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
-------------------------------	-------------	-------------	-------------	--------------	-------------	---------------------

### 2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline





- 2.2 Plateau
- 2.3 Side slope of hill/mountain
- 2.4 Closed valley
- 2.5 Open valley

**2.6 Plain**

- 2.7 Undulating plain / low hills
- 2.8 Dune
- 2.9 Seafront

**3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE**

Is the site(s) located on any of the following (tick the appropriate boxes)?

	Alternative S1: Option 1	Alternative S2: Option 2	Alternative S3:	
Shallow water table (less than 1.5m deep)	YES NO	YES NO	YES	NO
Dolomite, sinkhole or doline areas	YES NO	YES NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES NO	YES NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES NO	YES NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES NO	YES NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES NO	YES NO	YES	NO
Any other unstable soil or geological feature	YES NO	YES NO	YES	NO
An area sensitive to erosion	YES NO	YES NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).



#### 4. GROUNDCOVER

Indicate the types of groundcover present on the site:

- 4.1 Natural veld – good condition <sup>E</sup>
- 4.2 Natural veld – scattered aliens <sup>E</sup>
- 4.3 Natural veld with heavy alien infestation <sup>E</sup>
- 4.4 Veld dominated by alien species <sup>E</sup>
- 4.5 Gardens
- 4.6 Sport field
- 4.7 Cultivated land
- 4.8 Paved surface (roads)
- 4.9 Building or other structure
- 4.10 Bare soil

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition <sup>E</sup>	<del>Natural veld with scattered aliens<sup>E</sup></del>	<del>Natural veld with heavy alien infestation<sup>E</sup></del>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field	Cultivated land	<del>Paved surface</del>	Building or other structure	Bare soil

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

#### 5. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

- 5.1 Natural area
- 5.2 Low density residential
- 5.3 Medium density residential
- 5.4 High density residential
- 5.5 Informal residential
- 5.6 Retail commercial & warehousing
- 5.7 Light industrial
- 5.8 Medium industrial <sup>AN</sup>
- 5.9 Heavy industrial <sup>AN</sup>
- 5.10 Power station



- 5.11 Office/ consulting room
- 5.12 Military or police base/station/compound
- 5.13 Spoil heap or slimes dam<sup>A</sup>
- 5.14 Quarry, sand or borrow pit
- 5.15 Dam or reservoir
- 5.16 Hospital/medical centre
- 5.17 School
- 5.18 Tertiary education facility
- 5.19 Church
- 5.20 Old age home
- 5.21 Sewage treatment plant<sup>A</sup>
- 5.22 Train station or shunting yard<sup>N</sup>
- 5.23 Railway line<sup>N</sup>
- 5.24 Major road (4 lanes or more)<sup>N</sup> (William Moffett Drive)
- 5.25 Airport<sup>N</sup>
- 5.26 Harbour
- 5.27 Sport facilities
- 5.28 Golf course
- 5.29 Polo fields
- 5.30 Filling station<sup>H</sup>
- 5.31 Landfill or waste treatment site
- 5.32 Plantation
- 5.33 Agriculture
- 5.34 River, stream or wetland
- 5.35 Nature conservation area
- 5.36 Mountain, koppie or ridge
- 5.37 Museum
- 5.38 Historical building
- 5.39 Protected Area
- 5.40 Graveyard
- 5.41 Archaeological site
- 5.42 Other land uses (describe)

If any of the boxes marked with an “<sup>N</sup>” are ticked, how will this impact / be impacted upon by the proposed activity.

A section of the powerline is proposed in the railway line servitude along Macon Road in Lorraine. This railway line is not currently used. No impact on the railway line is anticipated as the powerline will not be positioned closer than 12.5 m from the railway line at any point.

If any of the boxes marked with an “<sup>An</sup>” are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:

N/A



If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:

There is a BP filling station along Circular Drive that is approximately 50 m north-east from Alternative 2 and 115 m north-east from Alternative 1. It is not anticipated that the filling station will have any impacts on the proposed powerline nor will the powerline affect the filling station

There is also a Caltex Filling Station approximately 250 m north-east of the K to L underground section of the proposed alignment. It is not anticipated that the filling station will have any impacts on the proposed powerline nor will the powerline affect the filling station.

## 6. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or palaeontological sites, on or close (within 20m) to the site?

	NO
	No

If YES, explain: N/A

If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist:

### **Archaeological Impact Assessment Phase 1 Letter of Exemption (refer to Appendix D)**

There were no archaeological artefacts located during the phase 1 archaeological impact assessment carried out. If any archaeological or heritage material were to be discovered it is very unlikely that it would be in situ. However, there is always a possibility that human remains or other archaeological and historical material may be uncovered during the development.

The specialist indicated no preference towards a specific alternative alignment as both areas are of a low archaeological significance and it is unlikely that sites would be uncovered in situ.

### **Palaeontological Impact Assessment Phase 1 Letter of Exemption (refer to Appendix D)**

The proposed 132 kV powerline development between the existing Lorraine and 17th Avenue Substations, Walmer, Port Elizabeth is of low significance in terms of local palaeontological



heritage since (1) the sedimentary rocks underlying the site are of low palaeontological sensitivity, and (2) the project footprint is very small, with little bedrock excavation envisaged. The specialist therefore recommended that exemption from further specialist palaeontological studies and mitigation be granted for this 132 kV powerline development.

Will any building or structure older than 60 years be affected in any way?

~~NO~~

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

~~NO~~

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

*The section below was added by SRK Consulting and is additional to the information in the original Basic Assessment Report form:*

**SOCIO-ECONOMIC CONTEXT OF THE SURROUNDING AREA**

Poverty and other social challenges contribute to low education levels within the metropolitan, with 3 % of the population have no schooling, while 13 % have Grade 7 or less and 75 % have Grade 12 or less.

According to the latest NMBM IDP (2015/2016) 36.48 % of the working age population is employed, 21.02 % are unemployed, 5.26 % of the population are discouraged work-seekers while the remaining 36.46 % are not economically active. These statistics clearly show that the Nelson Mandela Metropolitan still faces high levels of unemployment, which may be attributed to a decline in economic growth.

71 239 of the total number of 276,850 households within the metropolitan are classified as indigent. This essentially means that approximately 30% of the population is dependent on the municipality, while roughly 44 % of the population access at least one social grant.



## SECTION C: PUBLIC PARTICIPATION

### 1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  - (i) the site where the activity to which the application relates is or is to be undertaken; and
  - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
  - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  - (v) the municipality which has jurisdiction in the area;
  - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
  - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
  - (i) one local newspaper; or
  - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  - (i) illiteracy;
  - (ii) disability; or
  - (iii) any other disadvantage.



## 2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
  - (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
  - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
  - (iii) the nature and location of the activity to which the application relates;
  - (iv) where further information on the application or activity can be obtained; and
  - (iv) the manner in which and the person to whom representations in respect of the application may be made.

## 3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

## 4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

## 5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response



report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

## 6. AUTHORITY PARTICIPATION

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least 30 (thirty) calendar days before the submission of the application.

List of authorities informed:

- Department of Economic Development, Environmental Affairs & Tourism;
- Department of Water & Sanitation;
- Eastern Cape Provincial Heritage Resources Agency;
- Department of Energy; and
- Nelson Mandela Bay Municipality.

List of authorities from whom comments have been received:

None to date

## 7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the competent authority.

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application at least 30 (thirty) calendar days before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES  NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

A summary of all issues raised by stakeholders is included below. However, a complete Comments and Responses Table is included in Appendix E attached.

Main issues raised by landowners:

- i. Inadequate public participation;
- ii. Vagueness of information contained in BID;
- iii. Absence of written consent of landowner to undertake activity;
- iv. Undesirability of overhead powerlines;





- v. Effect of aboveground powerlines on local fauna;
- vi. Crossing over of alignment onto sensitive ecological areas;
- vii. Depreciation of property values;
- viii. Impact on approved residential developments;
- ix. Negative visual impact of overhead powerlines;
- x. Health risk due to electromagnetic radiation from masts;
- xi. Impact of powerlines on functioning of hospital's equipment; and
- xii. Cost of maintenance of aboveground powerlines.

Main issues raised by Ward 8 Councillor:

1. Lack of notice to ward office; and
2. Request for clarity regarding public participation process.



## SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

### 1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

A summary of all issues raised by IAPs is included below. However, a complete Comments and Responses Table is included in Appendix E3 attached.

1. Undesirability of overhead powerline; preference for underground cabling;
2. Concern regarding effect of bush clearing on local fauna;
3. Interference with recreational use of open spaces;
4. Depreciation of property values;
5. Negative impact on future growth and development in area;
6. Concern regarding electromagnetic radiation from masts; and
7. Opposition of local residents to proposed project.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report):

1. The option of installing an underground cable for the entire route has been eliminated during the design phase of the proposed development due to costs. Please see the discussion regarding alternatives in section A(2) above;
2. All potential impacts, including impacts on wildlife, avifauna, aquatic and terrestrial resources are discussed in section D(2) of this report, including proposed mitigation measures. An Aquatic Impact Assessment has also been conducted by a specialist and is included in Appendix D;
3. The proposed powerline will not impact on pedestrians visiting the nearby shops. Please refer to section D(2) of this report for a discussion on potential impacts as well as proposed mitigation measures;
4. Please refer to section D(2) of this report for a discussion on potential impacts, including impacts on property values.
5. A clear reason is not provided regarding how high level masts would limit future growth and development in the area. In terms of the electricity provision, the distribution network is critical to enhance development growth in the larger area;
6. All potential impacts, including the electromagnetic field (EMF), are discussed in section D(2) of this report; and
7. Noted.



## 2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

*The section below was added by SRK Consulting and is additional to the information in the original Basic Assessment Report form:*

The identification of potential impacts of the proposed activity is based on the following factors:

- The legal requirements;
- The nature of the proposed activity;
- The nature of the receiving environment; and
- Issues raised during the public participation process.

Considering the factors listed above, a number of potential environmental impacts which could potentially result from the proposed 132 kV powerline have been identified. These are discussed in this section.

Note that the impacts described below relate to both alignment alternatives. The impacts for both alternatives have been rated exactly the same in all instances, even though a preference for Option 1 has been indicated by the aquatic specialist.

### Alternative (Option 1 & Option 2)

#### **Direct impacts: (Construction)**

#### **Potential negative impacts:**

##### 1. Impacts on Biodiversity

##### ❖ Loss of Biodiversity/ Vegetation Clearance:

Vegetation clearance, vehicular access and excavation activities required during the construction phase may impact negatively on the biodiversity of the area, especially the section of alignment between Circular Drive and William Moffet Drive which is classified as a Critical Biodiversity Area (CBA) according to the Eastern Cape Biodiversity Conservation Plan (ECBCP). It must however be noted that the pylon footprints will be minimal in nature and little vegetation clearing will be required.

Two potential Yellowwood tree seedlings (*Podocarpus latifolius*) have been planted in



the open space adjacent to AG Visser Avenue which may need to be replanted to ensure that they are not damaged during the construction phase.

❖ Erosion:

Incorrect topsoil stripping may lead to accelerated erosion, resulting in soil loss, and possible sedimentation/ siltation of the watercourse which runs along the southern section of the proposed alignment.

❖ Spread of Alien Invasive:

Vegetation clearance required during the construction phase may lead to the spread of alien invasive species. However, vegetation clearing should be minimal and only involve clearing at each tower and along the underground cable route.

The final significance rating for this impact is LOW (-ve) if no mitigation is implemented. However, should the important mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

Mitigation measures:

- The site camp should be placed in an already disturbed area to minimise additional disturbance and clearing of vegetation;
- Minimise cleared and disturbed areas and use already transformed areas where possible;
- The site camp footprint must be minimised and accessible via existing access roads;
- Rehabilitation of cleared areas should be conducted as soon as possible after construction at the specific site;
- Rehabilitation should involve revegetation with indigenous vegetation;
- Use existing access roads and where new routes are required use transformed areas wherever possible, most importantly in the CBA areas. New access roads within the CBA areas should be prevented;
- Permits would be required for the relocation of any protected plants, e.g. Yellowwood trees;
- Implementation of an alien invasive vegetation removal programme during rehabilitation of the site (optional); and
- Removal of all invasive alien plants from disturbed areas before they reach seed-bearing age.

2. Impacts on Traffic

Construction at the various road crossings (Bergues Street, Circular Drive and William Moffet Drive) for the proposed alignment may require detours and/ or traffic control measures. It is important to note that the powerline will cross the road, however no construction is required in the road. The underground crossing at William Moffet Drive will be constructed using directional drilling in order to avoid traffic disruption.



Construction traffic may also pose a safety impact to residents living along the proposed alignment. Construction vehicles requiring access to the site may cause wear and tear of the existing roads.

The final significance rating for this impact is VERY LOW (-ve) with or without mitigation measures.

Mitigation measures:

- Implementation of strict traffic safety measures and speed limits for all construction related traffic;
- Appropriate traffic warning signage to be in place; and
- Appropriate road maintenance programme to be implemented.

### 3. Impacts on Wildlife

Noise and habitat destruction resulting from construction activities may displace and disturb local wildlife mainly associated with the watercourse and wetland. However, since no activities are planned within any watercourse or wetland and considering the small proposed construction footprint, the potential impact to wildlife should not be significant.

The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

Mitigation measures:

- Minimise cleared and disturbed areas and use already transformed areas where possible; and
- Hunting and harm to fauna by construction workers will be prohibited.

### 4. Noise Impacts

Construction activities will generate noise due to the operation of machinery and vehicles, causing a nuisance to residents along the proposed alignment.

The final significance rating for this impact is VERY LOW (-ve) with or without mitigation measures.

Mitigation measures:

- Construction activities should be kept to normal working hours (i.e. 6:00 to 18:00, Monday to Saturday) according to the Noise Control Regulations in terms of the Environmental Conservation Act (Act 73 of 1989) to reduce the noise impact to an acceptable level;
- Activities that may disrupt neighbours (e.g. delivery trucks, blasting and other excessively noisy activities) must be preceded by notice being given to the affected neighbours at least 24 hours in advance;
- No sound amplification equipment such as sirens, loud hailers or hooters are to



be used on site except in emergencies and no amplified music is to be permitted on site; and

- Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers, etc.) must be used as per operating instructions and maintained properly during site operations.

#### 5. Impacts on Existing Infrastructure and Private Property

Existing infrastructure including the railway line (north of Macon Road, Lorraine), NMBM road infrastructure, fences and gates, Telkom cables, existing Eskom cables, NMBM water and sewer infrastructure as well as adjacent private property may be disturbed through construction activities.

The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

Mitigation measures:

- Locations of existing services to be determined and mapped prior to the commencement of construction;
- Consultation with the potentially affected parties (e.g. NMBM, Eskom, property owners, etc.) should be conducted if any services positions are unclear;
- Manual excavation in areas where services infrastructure is present;
- The appropriate safety precautions must be taken at all times; and
- Should any existing services be damaged as a result of the construction activities, the affected parties should be notified and the relevant actions taken to repair damages as soon as possible.

#### 6. Impacts on Aquatic Resources (including wetlands)

- ❖ Impact on hydrological regime and increased potential for erosion:

The soils within the study area are susceptible to erosion when subjected to high flows (high volumes and velocities), with head-cuts readily forming within the regional water courses. This creates bed and bank instability in the aquatic ecosystems and consequent sedimentation of downstream areas, which can negatively affect biodiversity and functioning of in stream habitats. Clearing of vegetation could destabilise the soils, resulting in downstream erosion and or sedimentation that could impact on aquatic habitats within the Baakens River, particularly if no post construction rehabilitation is done to allow revegetation of any disturbed sites.

Due to the nature of the study area hydrology, its present state and the surrounding impacts this would although a negative impact, the overall significance of the impact would be rated as LOW (-ve). However should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).



❖ Impact on Water Quality:

Presently little is known about the water quality of the water courses directly in the study area, but it is assumed due to the activities observed, the aquatic systems contain some form of pollutants, other than elevated sediment loads during floods.

During construction various materials, such as sediments, diesel, oils and cement, could pose a threat to the continued functioning downstream areas, if by chance it is dispersed via surface run-off, or are allowed to permeate into the groundwater. Changes to water quality can negatively impact on the functioning of plants and other instream biota.

The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

❖ Loss of vegetation, and aquatic habitat and stream continuity:

Wetland vegetation and aquatic corridors create longitudinal links between a variety of habitats and refugia. The refugia are particularly important in times when surface flows are low, i.e. fish populations are able to survive in deeper pools during droughts. These populations are then able to recolonise the remaining river reaches, when reconnected by increased river flows. This function of a catchment and its ability to act as a refugia is highlighted by the conservation plans that have earmarked the study area as such. The proposed transmission line, would see a number of towers located within these areas based on the current alignments, but it is assumed that these tower footprints are small and no access roads will be required within the aquatic habitats. The number of tower footprints directly within or adjacent to the watercourse would be lower if Alternative 1 is selected. However, the impact rating for both alignments is similar.

The final significance rating for this impact is LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

Mitigation measures:

- Minimise the loss of aquatic habitats/ vegetation by locating as many of the proposed towers outside of these areas thus maintaining a small footprint;
- No vehicles to refuel within watercourse/ wetlands to prevent any compaction of soils;
- No flows within any of the water courses should be altered by the towers;
- Chemicals used for construction must be stored safely on site and surrounded by bunds. Chemical storage containers must be regularly inspected so that any leaks are detected early;



- Littering and contamination of water sources during construction must be prevented by effective construction camp management;
- Emergency plans must be in place in case of spillages onto road surfaces and water courses;
- No stockpiling should take place within a water course;
- All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds;
- Stockpiles must be located away from river channels;
- Erosion and sedimentation into channels must be minimised through the effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed riverbanks;
- The construction camp and necessary ablution facilities meant for construction workers must be beyond the 32 m of any of the watercourses (see maps included in Appendix C); and
- Tower footprints must be kept to a minimum and if possible outside of the demarcated water course; and
- A detailed walk down survey must be conducted once the towers positions are known by an aquatic specialist due to the close proximity of either of the options to the wetlands and water courses. This must also include an opportunity to assess the final design provisions prior to construction to ensure that minimal impact will occur. Once the tower positions are known site specific recommendations could be provided by the specialist.

#### 7. Impacts on Archaeological Resources

Although the proposed alignment is located in an area of low archaeological cultural sensitivity, it is possible that archaeological heritage material exists below the surface and could be impacted during construction.

The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

Mitigation measures:

- The environmental control officer (ECO) as well as the construction managers/ foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites; and
- If concentrations of archaeological and/or historical heritage material, marine shells, and / or human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (Tel: (046) 622 2312) and/or the Eastern Cape Provincial Heritage Resources Agency (ECPHRA) (Tel: (043) 745 0888) so that systematic and professional investigation/ excavation can be undertaken.

#### 8. Impacts on Palaeontological Resources





Although the proposed alignment is located in an area of low palaeontological cultural sensitivity, it is possible that palaeontological heritage material exists below the surface and could be impacted during construction.

The final significance rating for this impact is VERY LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

Mitigation measures:

- The environmental control officer (ECO) as well as the construction managers /foremen should be informed before construction starts on the possible types of palaeontological sites/ material they may encounter and the procedures to follow when they find sites; and
- Should any substantial fossil remains (e.g. vertebrate bones and teeth, petrified wood, plant or trace fossil assemblages, fossil shells) be encountered during excavation, however, these should be safeguarded, preferably in situ, and reported by the ECO to ECPHRA (i.e. The Eastern Cape Provincial Heritage Resources Authority. Contact details: Mr Sello Mokhanya, 74 Alexander Road, King Williams Town 5600; smokhanya@ecphra.org.za) and a suitably qualified palaeontologist so that specimens can be examined, recorded and, if necessary, professionally excavated at the developer's expense.

#### 9. Impacts on Air Quality (Dust)

Windblown dust from material stockpiles and cleared areas may affect surrounding residents, road users and pedestrians by creating a nuisance and safety impact to traffic. However, it is not anticipated that large areas will have to be cleared during the construction phase as the tower footprints are small and minimal new access routes will be required.

The final significance rating for this impact is VERY LOW (-ve) with or without mitigation.

Mitigation measures:

- Implementation of dust suppression techniques such as wetting of the soil;
- Minimise vegetation clearing and land disturbance; and
- Rehabilitate exposed areas as soon as possible after construction in the relevant area has been completed.

#### 10. Waste Management

Construction waste as well as small amounts of domestic waste will be generated. Lack of proper management of the waste on the site may lead to wind-blown litter and dumping creating a negative visual impact and potentially impacting on aquatic ecosystems.



The final significance rating for this impact is LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to INSIGNIFICANT (-ve).

Mitigation measures:

- Chemical toilets must be provided for workers and these must be regularly serviced (and proof of correct sewage disposal maintained for auditing purposes);
- All waste generated on site shall be collected and appropriately disposed of at a registered municipal landfill site on a regular basis;
- No waste is to be buried or burned on the site;
- Hazardous waste (if applicable) should be disposed of at a registered hazardous landfill facility and proof of correct disposal should be obtained;
- Sufficient weather and vermin proof portable bins (with lids) shall be provided. The contractor shall be responsible for the disposal of domestic waste generated as a result of work activities; and
- Littering is strictly prohibited. Litter shall be disposed of in the on-site bins;
- Where possible, waste shall be re-used or recycled;
- The contractor shall inform sub-contractors and delivery drivers (e.g. of concrete, sand etc.) of procedures and restrictions in terms of the EMP, and shall only use designated access roads and material storage areas;
- All loads shall be secured / enclosed to prevent spillage during transport;
- The Contractor shall be responsible for clean-up resulting from failure of sub-contractors to properly contain materials;
- All cement bags shall be disposed of at a licensed waste disposal facility;
- All staff shall be trained on correct waste management;
- The Contractor will be responsible for removing all litter, construction waste and contaminated material from the site and surrounding areas affected by the construction activities and recycling or disposing of it at a registered waste landfill facility; and
- All waste shall be secured / enclosed to prevent spillage during transportation; and
- Records of disposal of all waste generated on site shall be maintained for auditing purposes..

Socio-economic impacts

The proposed powerline may generate temporary employment opportunities as well as contribute to the improvement of services within the general area.

The final significance rating for this impact is VERY LOW (+ve) with or without enhancement measures.

Enhancement measures:



- Where unskilled labour is required, it should be as far as possible sourced from local communities.

***Indirect impacts:***

None

***Cumulative impacts:***

As noted in the Aquatic Impact Assessment (Appendix D), potential cumulative impacts regarding the impact of changes to water quality of nearby watercourses is likely due to the construction of the Lorraine bulk stormwater project. However, the impacts should be short-term and could be rated as Moderate – Low with mitigation. This rating is also based on the assumption that the first detention pond near Circular Drive will capture any pollutants/sediments derived from the stormwater project, stormwater project, which would result in altered hydrological patterns that also then affect migration routes / patterns.

No other cumulative impacts are anticipated as the proposed alignment does not cross any other power lines or high structures, nor are there any powerlines or high structures within the immediate environment along the proposed alignment.

**Operational Phase:**

***Direct impacts:***

1. Socio-economic impacts

The proposed powerline add to the improvement of services to the greater area. It will supply electricity to future proposed residential and commercial developments along the route and greater area as well as supplement the current energy demands of existing residential and commercial properties along the route.

The final significance rating for this impact is MEDIUM (+ve) with or without enhancement measures.

Enhancement measures:

- Regular maintenance of infrastructure, including swift and appropriate repairs if required.

2. Visual/ Aesthetic Impacts

Large pylons and conductors can pose an aesthetic impact, affecting surrounding residents and visitors to the area. In addition, if the servitude is not regularly inspected and maintained, illegal dumping and windblown litter can accumulate creating a negative visual impact. The railway line servitude adjacent to Macon Road, Lorraine is



often used by photographers as a visual location for photoshoots. The visual impact of the powerline structures could affect the option for photographers to use this location.

Note that the proposed overhead powerlines are proposed in an existing built-up area and within an existing servitude along Macon Road, Lorraine and open spaces along with other services infrastructure. The proposed underground cable between points K and L will not contribute to any aesthetic impact.

The final significance rating for this impact is LOW (-ve) with or without mitigation.

Mitigation measures:

- The power line servitude shall be kept clear of alien vegetation and dumping;
- In the event that illegal dumping is observed along the power line alignment, then the NMBM's Electricity and Energy personnel shall notify the NMBM cleansing/ waste management personnel; and
- Should illegal dumping persist, then the NMBM Electricity and Energy Business Unit shall consult with the NMBM's waste management personnel to identify methods (e.g. bollards restricting access or lockable entrance points) for reducing instances of illegal dumping.

### 3. Avifauna Impacts

#### ❖ Bird collisions with infrastructure:

Avifauna impacts relating to collisions with the powerline infrastructure are a possibility especially near watercourses, however, due to the suburban nature of the proposed alignment, the species of avifauna likely to occur in the area should be adapted to suburban situations and should be able to continue to use the flyway without risk of collision.

#### ❖ Electrocuting of avifauna:

Avifauna within the local area may be at risk of electrocution due to the installation of the powerline infrastructure. However, large bird species (i.e Blackheaded Heron) are most prone to electrocution, and it is not anticipated that many of these species will occur in the study area being a built-up suburban area.

#### ❖ Perching, Roosting and Breeding on infrastructure:

Avifauna in the surrounding area may use the proposed infrastructure for perching and breeding, however the design of the towers should be designed in such a way that it discourages or is not conducive to provide suitable nesting sites for avifauna.



The final significance rating for this impact is LOW (-ve) if no mitigation is implemented. However, should the mitigation measures below be complied with, the significance of the impact could be reduced to VERY LOW (-ve).

Mitigation measures:

- Proposed monopole structure is preferred in terms of avifaunal impacts as opposed to 5-pole wooden towers;
- Pylons are to be fitted with perching brackets and the river crossing should be marked with suitable anti-collision marking devices to mitigate the impact of bird collision;
- Where there is a particular risk of collisions by birds (specifically along the portion of the alignment which runs parallel to the watercourse west of the Walmer 17<sup>th</sup> Avenue substation), install Static Bird Flight Diverters (recommended) or Bird Flappers (alternative) on the shield wires of the power lines in the servitude corridor to make the lines more visible; and
- Monitoring for avifaunal mortality along the powerline during maintenance activities and additional mitigation measures such as bird flight diverters should be fitted if there are places where regular mortality occurs.

#### 4. Noise Impacts

Noise generated by the powerlines during the operational phase may have a nuisance effect on surrounding residents. Noise may result from older or dirty powerlines or during periods of high humidity or rainfall. However, these impacts will only affect people in very close proximity to the powerline and are generally considered insignificant in assessments as the standard establishment of appropriate servitude widths as well as proper maintenance of the lines will mitigate such impacts.

The final significance rating for this impact is VERY LOW (-ve) with or without mitigation mainly because the impact is permanent.

Mitigation measures:

- Regular check-ups and proper maintenance of the powerlines, sub-station and associated structures to prevent unnecessary high noise levels from these structures;
- The use of polymer insulators to minimize insulator noise; and
- Attachment of dampeners to the powerlines to minimize Aeolian noise.

#### 5. Property ownership/ value

Although not always the case, the construction of overhead powerlines has the



potential to reduce the sales price of residential properties. Effects are most likely to occur to properties crossed by or immediately adjacent to the power line, and may be greater for small properties than for larger properties.

Note that the proposed overhead powerlines are proposed in an existing built-up area and within an existing servitude along Macon Road, Lorraine and open spaces along with other services infrastructure.

The final significance rating for this impact is LOW (-ve) with or without mitigation.

Mitigation measures:

- Proper rehabilitation as well as monitoring and clearing of alien invasive vegetation by the Contractor, during the course of the construction and defects liability periods, before they become seed bearing; and
- Ongoing maintenance of areas disturbed during the operational phase.

#### 6. EMF (Electro-Magnetic Field)

The proximity of residential and commercial properties to the proposed powerlines has the potential for EMF exposures. Scientific research on the effects of EMFs on public health has not demonstrated clearly the existence of a significant risk, nor has it proven the complete absence of risk. In general, the width of the servitude proposed for the different capacity powerlines are specifically prescribed to ensure safety related to potential impacts such as EMF and noise. A maximum servitude width of 25 m is prescribed for the proposed overhead powerline which will prevent the exposure of the general public (including adjacent property owners) to EMF for long periods as no buildings may be constructed within the servitude.

The International Commission for Non-Ionizing Radiation Protection (ICNIRP) specified guidelines for EMF exposure in 1998 (subsequently updated in 2010). The guidelines recommend the maximum Electric and Magnetic Fields allowable for limiting EMF exposure that will provide protection against adverse health effects. According to the updated 2010 guidelines the recommended guideline for Electric Field is 5 kV/m for general public (10 kV/m for occupational) and for Magnetic Field 200  $\mu$ T (1 mT for occupational). An EMF study conducted by Eskom (please refer to Appendix G) specifies the maximum magnetic field at a 132 kV powerline servitude boundary of 15.5 m in width from the centreline as 1  $\mu$ T and the maximum electric field at a servitude boundary of 15.5 m in width from the centreline as 0.5 kV/m, therefore below the stated guidelines set out by the ICNIRP in 2010. According to data from [www.emfs.info](http://www.emfs.info), the electric and magnetic fields experienced at 12.5 m from the centre line of the proposed alignment will still fall below the guidelines specified by the ICNIRP, therefore the potential for adverse health effects due to long-term exposure to



EMF resulting from the proposed powerline is expected to be very low.

The final significance rating for this impact is VERY LOW (-ve) with or without mitigation. Since the proposal already includes the establishment of a servitude, the impact rating without and with mitigation were done for installing the powerline with a servitude.

Mitigation measures:

- No buildings shall be constructed within the powerline servitude; and
- During maintenance activities, NMBM personnel should ensure that no vagrants stay within the powerline servitude.

***Indirect impacts:***

1. Fire

Failure to maintain the powerline and powerline servitude may pose a potential fire risk.

The final significance rating for this impact is INSIGNIFICANT (-ve) with or without mitigation.

Mitigation measures:

- Regular inspections of the powerline must take place to monitor its operational status;
- Regular maintenance must be undertaken to repair faults and broken infrastructure; and
- Keep the powerline servitude clear of very high and alien vegetation.

***Cumulative impacts:***

No cumulative impacts are anticipated as the proposed alignment does not cross any other powerlines or high structures, nor are there any powerlines or high structures within the immediate environment along the proposed alignment.

3.

**ENVIRONMENTAL IMPACT STATEMENT**

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific



reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

### Alternative A (preferred alternative) Summary Impact Rating Table

The summary impact rating table is included below. The full impact assessment rating table is included in Appendix H.

IMPACT	CONSTRUCTION				OPERATION			
	WITHOUT MITIGATION		WITH MITIGATION		WITHOUT MITIGATION		WITH MITIGATION	
Impacts on Biodiversity	Low	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Traffic	Very Low	- ve	Very Low	- ve	N/A		N/A	
Impacts on Wildlife	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Noise Impacts	Very Low	- ve	Very Low	- ve	Very Low	- ve	Very Low	- ve
Impacts on Existing Infrastructure and Private Property	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Aquatic Impact 1: Changes to Hydrological Regime and increased potential for erosion	Low	- ve	Insignificant	- ve	N/A		N/A	
Aquatic Impact 2: Impact of Changes to Water Quality	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Aquatic Impact 3: Loss of Wetland Vegetation / Aquatic Habitat	Low	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Archaeological Resources	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Palaeontological Resources	Very Low	- ve	Insignificant	- ve	N/A		N/A	
Impacts on Air Quality	Very Low	- ve	Very Low	- ve	N/A		N/A	
Waste Management	Low	- ve	Insignificant	- ve	N/A		N/A	
Socio-economic Impacts	Very Low	+ ve	Very Low	+ ve	Medium	+ ve	Medium	+ ve
Impacts on Aquatic Resources (Cumulative)	Insignificant	- ve	Insignificant	- ve	N/A		N/A	
Visual / Aesthetic Impacts	N/A		N/A		Low	- ve	Low	- ve
Impacts on Avifauna	N/A		N/A		Low	- ve	Very Low	- ve
Property Ownership / Value	N/A		N/A		Low	- ve	Low	- ve
EMF (Electro-Magnetic Field)	N/A		N/A		Very Low	- ve	Very Low	- ve
Fire (Indirect)	N/A		N/A		Insignificant	- ve	Insignificant	- ve

### Assumptions and Limitations of the Study





For the purposes of the impact assessment it is assumed that all other legal requirements relating to the operation and design of the proposed 132 kV powerlines will be adhered to and that the project will be consistent with what is described in the relevant design report. An underlying assumption is that design standards, including buffers for powerlines, as applied by the NMBM, already incorporate health and safety considerations consistent with international standards.

During the course of the specialist aquatic impact study it was assumed that the aquatic systems already contain some form of pollutants (other than elevated sediment loads during floods). It was assumed that the tower footprints are small in nature and that no access roads will be required within the aquatic habitats. The aquatic study was also subject to various limitations. In order to obtain a comprehensive understanding of the dynamics of both the flora and fauna of the aquatic communities within a study site, as well as the status of endemic, rare or threatened species in any area, assessments should always consider investigations at different time scales (across seasons/years) and through replication. However, due to time constraints these long-term studies are not feasible and are mostly based on instantaneous sampling.

It is further assumed that any water required during the construction period will be sourced from the Nelson Mandela Bay municipal water supply and will not be extracted from any watercourses nearby.

### **Key Findings:**

#### **Alternative A (preferred alternative)**

The most significant negative impacts are associated with the operational phase of the development include visual impacts, impacts on avifauna and potential impacts on property values. These impacts have been given an impact rating of LOW significance with or without mitigation measures, with the exception of impacts on avifauna which can be reduced to VERY LOW significance if proper mitigation measures are adhered to.

All negative impacts associated with the construction phase of the development are considered to be of LOW or VERY LOW significance (or less). It is anticipated that the significance of these impacts can be further reduced through effective mitigation.

Note that the impacts described above relate to both alignment alternatives. The impacts for both alternatives have been rated exactly the same in all instances, even though a preference for Option 1 has been indicated by the aquatic specialist. Option 1 is therefore indicated as the environmentally preferred option.

#### **No-go alternative (compulsory)**

The no-go alternative would not result in any positive or negative environmental impacts. Pressure for additional electricity supply in the area may increase, especially due to the envisioned future growth in



the area, however that is outside the scope of this assessment.



## SECTION E. RECOMMENDATIONS OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES	
YES	

Is an EMPr attached?

The EMPr must be attached as Appendix F.

If “NO”, indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

N/A

If “YES”, please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

A project specific Environmental Management Programme (EMPr) has been compiled and can be found under Appendix F of this document. It is recommended that an Environmental Control Officer be appointed to conduct independent construction audits to ensure compliance with the EMPr.



## SECTION F: APPENDICES

The following appendices must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information

Appendix H: Impact Ratings

Appendix I: Curriculum Vitae

Appendix J: Declaration of EAP

Appendix K: DEDEAT Basic Assessment Application Form

## **Appendix A: Site Plan(s)**

## **Appendix B: Photographs**

## **Appendix C: Facility Illustrations**

## **Appendix D: Specialist Reports**



## **Appendix E: Public Participation Process**

## **Appendix F: Draft Environmental Management Programme (EMPr)**

## **Appendix G: Other Information**

## **Appendix H: Impact Ratings**

## **Appendix I: Curriculum Vitae**

## **Appendix J: Affirmation by EAP**

## **Appendix K: DEDEAT Basic Assessment Application Form**

**N/A**

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