Proposed Rooibektiptol Cellular Mast, Pixley Ka Seme Local Municipality, Mpumalanga Province

Draft Basic Assessment Report

23 April 2021

CORE Environmental Services

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Professional Registration -
SACNASP: 300067/15

EAPASA: 2020/602

EXECUTIVE SUMMARY

Thabure Towerco is proposing to establish a telecommunication mast of 25m in height on portion 7 of the farm Driefontein 123-HS within Pixley Ka Seme local municipality. Due to the height of the telecommunication mast as well is the location proposed, Environmental Authorisation is required in accordance with the National Environmental Management Act 107 of 1998, GNR 985 of 2014 (as amended in 2017), before the construction and establishment of the proposed mast.

Thabure Towerco appointed **Core Environmental Services** to apply for the EA by means of conducting a Basic Environmental Authorisation process as regulated within General Notice Regulation 982, 2014 (as amended in 2017).

The construction and decommissioning of the cellular mast are likely to result in environmental and socio-economic impacts. The identified impacts are listed below and discussed thereafter:

- *Biodiversity Impact;*
- *Visual;*
- *Generation of dust;*
- *Erosion;*
- *Soil Pollution;*
- *Waste Management;*
- *Noise; and*
- *Socio-economic impact.*

The table below summarises the impacts identified and assessed for the operational and decommissioning phases of the project:

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
Construction and decommissioning Impacts		
Biodiversity Impact	Low	Very Low
Visual Impact	Low	Very Low
Generation of dust	Low	Very Low
Impact on soil	Low	Very Low
Noise generation	Low	Very Low
Waste generation	Medium	Low
Job opportunities	Low (+)	Medium (+)
Health and Safety	Medium	Low
Operational Phase Impacts		
Visual Impact	Low	Low
Socio-economic Impact	High (+)	High (+)

The assessment of the possible impacts associated with the construction, operation and decommissioning activities concluded that the impact on the surrounding environment is of low significance. Recommendations have however been made to address the impacts which could affect the biophysical and socio-economic environment. These recommendations were included within Section 6 and also the Draft Environmental Management Plan attached.

It is the opinion of the EAP that the EA for this project should be granted, and the proposed mitigation included as the conditions of the authorisation.

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ABBREVIATIONS

BAR	Basic Assessment Report
CBA	Critical Biodiversity Area
EA	Environmental Authorisation
GNR	General Notice Regulation
I&AP	Interested and Affected Party
MDARDLEA	Mpumalanga Department of Agriculture, Rural Development, Land and Administration
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
PPP	Public Participation Process
SACAA	South African Civil Aviation Authority

1. OVERVIEW OF THE PROJECT

1.1 Introduction

Thabure Towerco is proposing to establish a telecommunication mast of 25m in height on portion 7 of the farm Driefontein 123-HS, within the Pixley Ka Seme Local Municipality. Due to the height of the telecommunication mast as well is the location proposed, Environmental Authorisation is required in accordance with the National Environmental Management Act 107 of 1998, GNR 985 of 2014 (as amended in 2017), before the construction and establishment of the proposed mast.

Thabure Towerco appointed **Core Environmental Services** to apply for the EA by means of conducting a Basic Environmental Authorisation process as regulated within General Notice Regulation 982, 2014 (as amended in 2017).

1.2 Location

The proposed site is located on height on portion 7 of the farm Driefontein 123-HS, approximately 10km North-West of Volksrust, within the Pixley Ka Seme Local Municipality, Mpumalanga Province.
Coordinates:
27° 21'20.17"S
29° 46'43.09"E
Surveyor General Code: T0HS00000000012300007

Please refer to the locality map below, Figure 1.

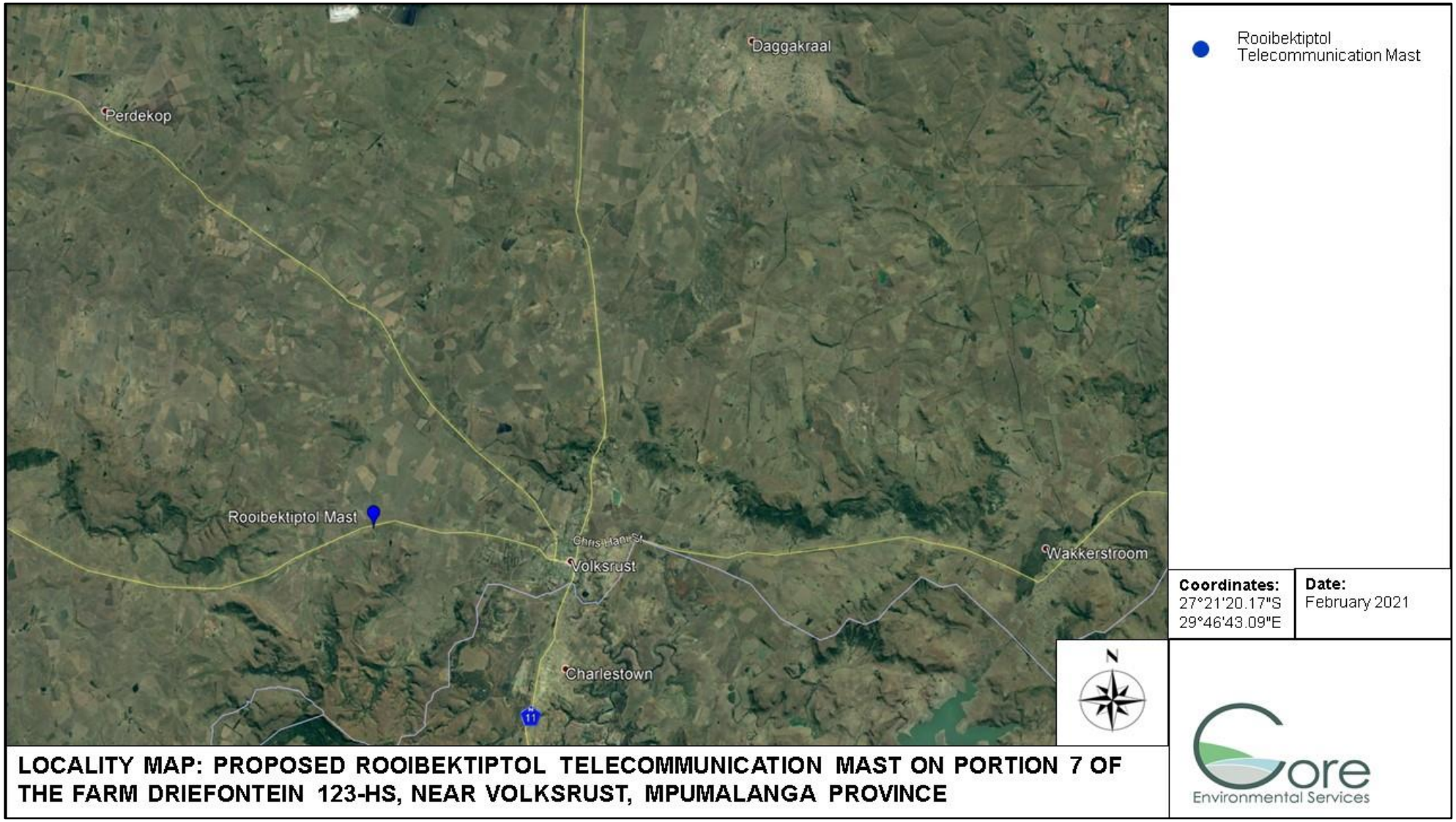

FIGURE 1: LOCALITY MAP – PROPOSED ROOIBEKTIPTOL CELLULAR MAST

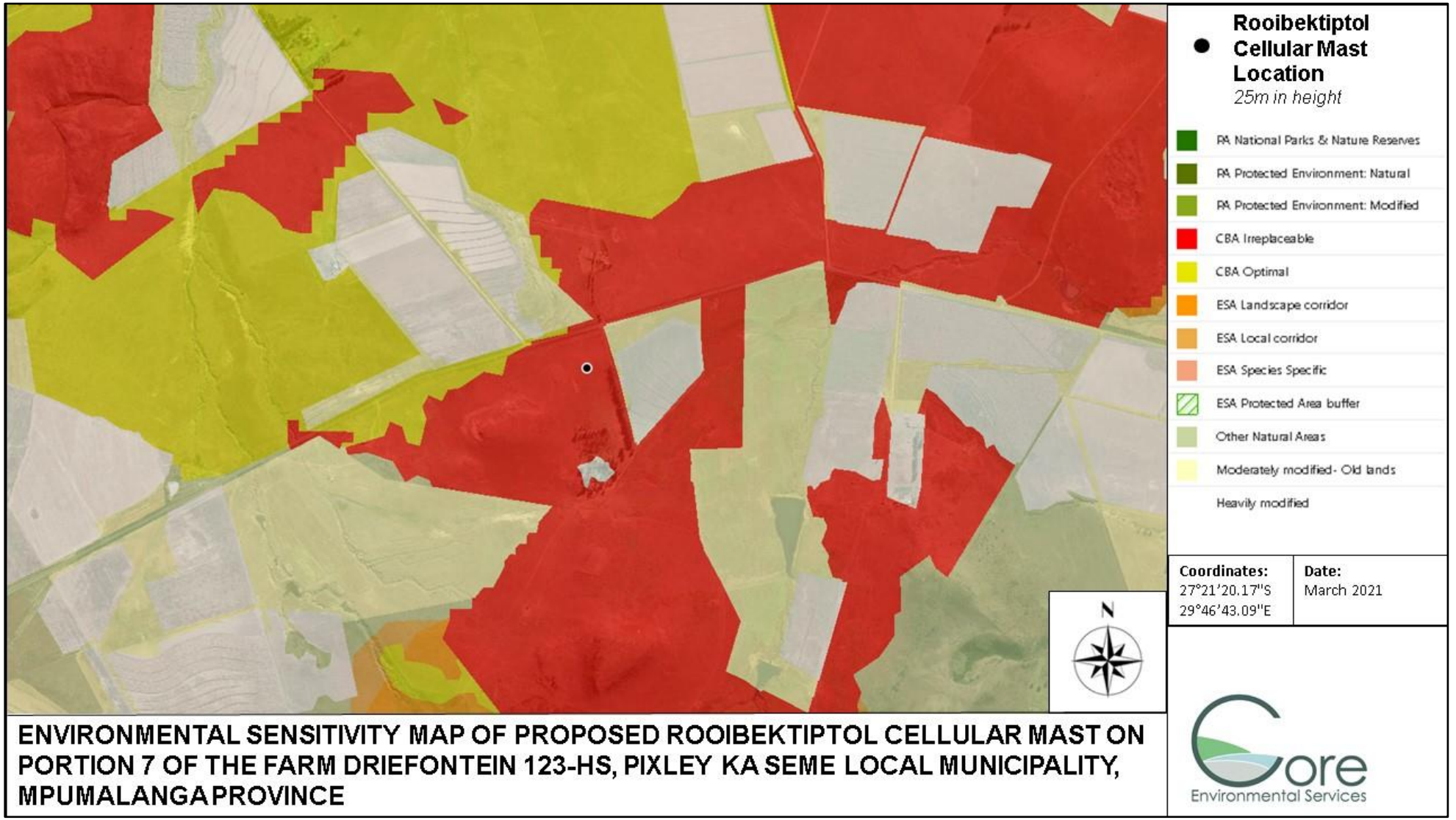

FIGURE 2: ENVIRONMENTAL SENSITIVITY MAP – PROPOSED ROOIBEKTIPTOL CELLULAR MAST

1.3 Details of the EAP

Ms. Anne-Mari White, is an Environmental Specialist, who started her studies at the North-West University (NWU) and completed her Bachelor of Science: Environmental Management at the University of South Africa (UNISA) in 2007. Ms. White is registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA Reg No: 2020/602) as well as the South African Council for Natural Scientific Professionals as a Certificated Natural Scientist (Reg. No 300067/15). In addition to her qualification, she completed short courses in soil classification and wetland delineations (Terrasoil Science), Geographic Information Systems (University of KwaZulu-Natal), and Environmental Impact Assessments (NWU).

1.4 Policy Legal and Administrative Framework

TABLE 1: LEGISLATION APPLICABLE TO THE PROJECT

Applicable legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments considered	**Project application and type (permit / licence / authorisation / comment)**
The Constitution of South Africa, Act No. 108 of 1996	Thabure Towerco will be required to adhere to the Environmental Management Programme (EMPr) requirements to ensure that social and environmental management considerations are considered and implemented. As per Section 25 the Constitution, a public participation process (PPP) was and will continue to be undertaken, as this is considered to be an essential mechanism for informing stakeholders of their rights and obligations in terms of the project.
National Environmental Management Act, 1998 (Act No. 107 of 1998)	The following listed activities are triggered with the proposed establishment of the cellular mast: *GNR 985, Activity 3:* *The construction of masts or towers of any material or type used for telecommunication, broadcasting or radio transmission purposes where the mast:* *(a) Is to be placed on a site not previously used for this purpose; and* *(b) Will exceed 15m in height but excluding attachments to existing buildings and masts on rooftops.* *Within (a) Mpumalanga, a (ee) Critical Biodiversity Area as identified in systematic biodiversity plans adopted by the Competent Authority or in Bioregional Plans.* Environmental Authorisation will subsequently be applied for by means of conducting a Basic

	Environmental Authorisation process as regulated within GNR982 of 2014 (as amended in 2017).
National Biodiversity Act, 2004 (Act No. 10 of 2004)	The act provides for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources, the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resource; the establishment and functions of a South African National Biodiversity Institute; and for matters connected therewith. The site on which the cellular mast is proposed is located within a Critical Biodiversity Area (Optimal) as identified within the Mpumalanga Biodiversity Sector Plan of 2014 and for this reason the area is of high biodiversity sensitivity. The National Biodiversity Act, 2004, must therefore be considered for the prior to the establishment of the mast and measures must be included to minimise the impact on the terrestrial biodiversity.
National Environmental Management Waste, 1998 (Act 59 of 1998)	The waste act provides reasonable measures for the prevention of pollution and ecological degradation and for securing ecological sustainable development. During construction and decommissioning, waste will be created, and it is essential that all waste is stored and disposed of according to the regulations provided within the National Environmental Management Waste Act 59 of 1998.
Occupational Health and Safety Act, 1998 (Act No. 85 of 1998)	The Act provides for the health and safety of people at work and for the health and safety of people using plant and machinery. During construction and decommissioning, work must be conducted with strict adherence to the Occupational Health and Safety Act 85 of 1998.
National Heritage Resources Act, 1999 (Act No 25 of 1999)	This legislation aims to promote good management of the national estate, and to enable and encourage communities to nurture and conserve their legacy so that it may be bequeathed to future generations. The initial site survey did not identify any artefacts which could be of historical or cultural importance, however, should any items of significance be discovered during construction, a Heritage Specialist must be contacted immediately, and work must cease until confirmation from the Specialist is received. For this reason, the

	applicant must adhere to the regulations stipulated within the National Heritage Resources Act, 1999.
Civil Aviation Act, 2009 (Act No. 13 of 2009)	The Act provide for additional measures directed at more effective control of the safety and security of aircraft, airports and the like and to provide for matters connected thereto. Due to the height of the cellular mast (45m), the Civil Aviation Authority (CAA) must ensure that the mast will have no unacceptable impact on civil aviation installations.
Mpumalanga Spatial Development Framework (MSDF) Draft (2013)	The MSDF has a vision to provide: *"a sustainable urban and rural spatial development pattern focussed on a modern, ecologically sustainable economy, supported by a suitably skilled labour force and providing for quality of living* [emphasis added]*."* The underlined portion of the Vision address the aspects which are applicable to this project: The establishment of the cellular mast will ensure better connectivity to the people residing within the surrounding area as well as motorists travelling on the R539 provincial road. The establishment of the mast will therefore positively impact the livelihood as telecommunication and internet connectivity will be improved.
Pixley Ka Seme Integrated Development Plan (IDP) (2017 - 2022)	The primary objectives of the IDP are to foster economic growth that creates jobs and improve infrastructure within the Province. Although job opportunities will only be temporary during the establishment phase, the residents within the area will enjoy better telecommunication and internet connectivity. As per the objective of the IDP, infrastructure will be upgraded which could result to economic growth.

1.5 Description of the project

Thabure Towerco is proposing to establish a telecommunication mast of 25m in height on portion 7 of the farm Driefontein 123-HS within Pixley Ka Seme local municipality

The establishment of the mast will be restricted to a footprint of approximately 100m^2

1.6 Need and Desirability

Cellular phones have become an important part of the South African way of life and fulfil an important role in our daily lives in terms personal and business activities. Cellular masts are however required and must be placed at optimal locations for cell phones to have signal and be operational.

Challenges with the cellular network is experienced within the area where the cellular mast is proposed and therefore there is a definite need for the establishment of the cellular mast to improve the connectivity within the Volksrust area.

The benefits that the activity will have for society in general are:

- Better cell phone network or signal coverage
- Socio-economic development; and
- Improved medical response

2. PUBLIC PARTICIPATION PROCESS

The purpose of this chapter is to provide an outline of the public participation process (PPP) to date and the way forward with respect to the Basic Assessment process.

Consultation with the public forms an integral component of the EA process. This process enables Interested and Affected Parties (I&APs) (e.g. directly affected landowners, national-, provincial- and local authorities, and local communities etc.) to raise their issues and concerns regarding the proposed activities, which they feel should be addressed in the BA process. The PPP has thus been structured such as to provide I&APs with an opportunity to gain more knowledge about the proposed project, to provide input through the review of documents/reports, and to voice any issues or concerns at various stages throughout the BA process.

I&APs were identified during the public participation phase of the project. All the parties identified as an I&AP (surrounding landowners, relevant departments, stakeholders, local and district authorities) have automatically been registered in the I&APs database for the project. The registered I&AP list is attached as **Annexure C.1.**

In effort to engage potential stakeholders, different communication methods were used to inform them about the project and how to get involved in the BA process. These methods include:

- Distributing English Background Information Documents (BIDs) to all registered I&APs, proof of which is attached in **Annexure C.2**;
- Placement of media advert in a local newspaper (The Lowvelder) on 25 February 2021 (see **Annexure C.3**).
- Placing of a notice at the proposed site took place on 11 February 2021 (see **Annexure C.4**);

The draft Basic Assessment Report will be made available for public review from April 2021– May 2021.

To date, no comments have been received from any of the stakeholders or identified and registered I&APs.

3. CONSIDERATION OF ALTERNATIVES

The EIA process requires the developer to identify and investigate/assess feasible and reasonable alternatives. The project alternatives range from the location where the activity is proposed, type of activity to be undertaken, design the of activity, technology to be used in the activity to the option of not implementing the activity (No-Go Alternative).

The assessment of the alternatives is a complicated and multi-faceted issue, which is essential to the success of this application and ultimately to the proper, responsible and sustainable operation of the proposed project.

3.1 Alternative Selection

3.1.1 Location alternatives

Various factors are considered by Thabure and Towerco prior to the identification of a proposed location. These factors include, the area where coverage is to be provided, the topography and identifying the highest point within the area, agreement with the landowner on which the mast is proposed, access to the identified site, as well as the availability of electricity to the mast. All of the above factors are considered prior to the commencement of the Environmental Authorisation process and subsequently other location alternatives were found too not be feasible. For this reason, only one location alternative was found to be feasible and is included within the Basic Environmental Impact Assessment conducted.

3.1.2 Design alternatives

There are three important criteria considered when investigating the design of a cellular mast. Most cellular mast designs include either a lattice or monopole structures.

The criteria used to consider the preferred design include the following:

- Aesthetical;
- Efficiency, technical value, and the functional requirements; and
- Economic aspects

TABLE 2: MONOPOLE AND LATTICE STRUCTURE COMPARISON

Aspect	Lattice Structure	Monopole Structure
Aesthetical	Highly transparent	Solid structure
Additional antennas	Can accommodate heavy loading of antennas and microwave dishes	Loading of additional antennas and dishes are limited
Establishment/Construction	Modelling and design and establishment of lattice structures are relatively easy Lattice structures are easy to transport as the sizes and weight of the sections are less when compares to monopole structure	Monopole structures requires a crane for installation A flatbed is required for delivery of the monopole structure
Economical	More economical – can easily be erected within the use of a crane	Requires specialised plate bending which increase establishment cost Higher freight costs as a flatbed in required to transport the structure to the site Crane is required for establishment

In terms of the aesthetical value, efficiency and technical aspect, as well as the cost implications detailed above, the lattice structure design is found to be the most preferred.

3.1.3 No-Go alternative

The no-go alternative would be to not authorise the application for the cellular mast. Should this alternative be favourable, the issues concerning connectivity within the area will remain.

No impact was identified to be so severe in order for the no-go alternative to be further investigated.

4. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The description of the affected environment below draws on existing knowledge from published data, previous studies, specialist investigations, and site visits to the area and is used to understand the possible effects of the proposed project on the environment.

4.1 Topography

The topography of the area where the cellular mast is proposed, is approximately 1760m above mean sea level. The proposed location is also the highest point within a 1.5km radius from the site. The exact area on which the mast is proposed, is however flat which makes the location suitable for the establishment of the cellular mast.

4.2 Climate

Mpumalanga is a province where the climate varies due to its topography. The local area is characterized by moderate climatic conditions with a mean maximum temperature of 28^{o}C during January and 20^{o}C during July.

The site is situated in a summer rainfall area, with an annual rainfall average of 790mm. Winter rainfall is almost non-existent. Its lowest rainfall (8mm) is in June and highest (133mm) in January. It is a summer rainfall area with a high incidence of mist precipitation at higher altitudes.

4.3 Ecology

On a National level, the larger study area can be classified as Highveld (AT1009), according to Acocks (1988). Classified on a regional scale and according to a more detailed system the study area comprises several distinct vegetation units (Mucina & Rutherford, 2006):

The project area falls within the Grasland Biome. The Grassland Biome is found chiefly on the high central plateau of South Africa, and the inland areas of KwaZuluNatal and the Eastern Cape. The topography is mainly flat and rolling, but includes the escarpment itself. Altitude varies from near sea level to 2080 meters above sea level. Grasslands are dominated by a single layer of grasses. The amount of cover depends on rainfall and the degree of grazing. Trees are absent, except in a few localized habitats.

The vegetation type is classified as the Amersfoort Highveld Clay Grassland. **Amersfoort Highveld Clay Grassland**. is found in Mpumalanga and KwaZulu-Natal Provinces. This vegetation unit extends in a north-south band from just south of Ermelo, down through Amersfoort to the Memel area in the south. The vegetation unit is comprised of undulating grassland plains, with small scattered portions of dolerite outcrops in areas. The vegetation is comprised of a short-closed grassland cover, largely dominated by a dense Themeda triandra sward, often severely grazed to form a short lawn The Amersfoort Highveld Clay Grassland is considered vulnerable. The conservation target for this unit is 27% but none is protected. Some 25% of the unit is transformed, predominantly by cultivation (22%).

According to the Mpumalanga Biodiversity Sector Plan, 2014, the site falls within an area classified as a Critical Biodiversity Area (Irreplaceable). The process will have no negative impact on the terrestrial ecology of the area.

4.4 Surface and Groundwater

The proposed location has been identified as an Other Natural Area. There is however no water resource on or within a close proximity to the proposed site.

4.5 Land use

The area is zoned for agricultural purposes; however, the site is currently not in use. The surrounding areas are mostly used for agricultural purposes.

4.6 Geology and Soils

Geology includes shales, quartzite, dolomite, granite and diabase. The on the proposed project area can be described as soils with minimal development, usually shallow, on hard or weathering rock, with or without intermittent diverse soils. Lime rare or absent in the landscape.

4.7 Visual

The site is proposed in an area which is mostly untransformed and aesthetically pleasing with natural features which is significant to the area. The cellular mast will be visible to all surrounding landowners who live within a close proximity to the proposed mast.

4.8 Heritage

The initial site survey did not identify any artefacts which could be of historical or cultural importance, however, should any items of significance be discovered during construction, a Heritage Specialist must be contacted immediately, and work must cease until confirmation from the Specialist is received

4.9 Socio-Economic Environment

The area surrounding the proposed mast location is sparsely populated and mostly used for agricultural purposes. The nearest household is located approximately 1 kilometer from the proposed site and impacts such as dust and noise could affect these residents during construction phase. The impacts during the operational phase will be limited to the visual impact it has on nearby residents.

5. SPECIALIST ASSESSMENT REQUIREMENTS AS IDENTIFIED IN THE SCREENING REPORT

The following specialist assessments were identified within the Department of Environmental Affairs Screening Report to be conducted as part of the Basic Environmental Impact Assessment:

- Visual Impact Assessment

The visual receptors within the Rooibektiptol area are very limited to some surrounding agricultural households as well as motorists travelling on the dirt road. It is the opinion of the EAP that no Visual Impact Assessment is required for the Rooibektiptol Cellular Mast. Please refer to the attached photographs (Appendix B), for verification of the current use of land and surrounding receptors.

- Heritage Impact Assessment

During the initial site investigation, no artefacts which could be of heritage or cultural significance were noted at the proposed site. The footprint of the site to be affected is also limited to 100m^2 and for this reason the need for a Heritage Impact Assessment is not required. Should any findings be made during the construction phase, construction will cease, and a qualified Heritage Specialist will be contacted to investigate the findings.

Paleontological Assessment

The Screening Report issued by the Department of Environmental Affairs showed no paleontological sensitivities. For this reason, it is not expected that the small footprint of the cellular mast will have any impact on paleontological sensitivities and therefore no paleontological assessment was conducted.

- Terrestrial Biodiversity Assessment / Plant and Animal Species Assessment

Although the area is located in a Critical Biodiversity Area (Irreplaceable), the initial site investigation identified no protected species or species of concern to be affected by the proposed cellular mast. Due to the small footprint of 100m^2 of the cellular mast and the fact that no terrestrial biodiversity sensitivities were identified during the site investigation, it is the opinion of the EAP that no Terrestrial Biodiversity Assessment is required for the application of the Rooibektiptol Cellular Mast. Please refer to the photos attached as Appendix B for confirmation of the site sensitivity.

- Aquatic Biodiversity Assessment

According to the Screening Report, the Aquatic Biodiversity was found to be of very high sensitivity. In addition to this, the initial site inspection did not identify any water resources within a close proximity to the site. For this reason, it is motivated that no Aquatic Biodiversity Assessment is required for the Rooibektiptol Cellular Mast Environmental Authorisation Application.

- Civil Aviation Assessment

According to the Screening Report, the Civil Aviation Theme is of medium sensitivity and according to the protocol for the assessment and reporting of environmental impacts on civil aviation

installations, a Civil Aviation Compliance Statement must be prepared. Comments from the South African Civil Aviation Authority (SACAA) which can include inputs from the Obstacle Evaluation Committee (OEC) must be obtained to ascertain that there would be no unacceptable impact on civil aviation installations. An application was submitted to the SACAA and are awaiting approval. The application is attached as Appendix E.

- Geotechnical Assessment

As the footprint of site is only 100m^2, the impact on the geology and soil is very limited and therefore there is no need or requirement to conduct a Geotechnical Assessment for the proposed cellular mast.

6. METHODOLOGY OF ASSESSING THE SIGNIFICANCE OF IMPACTS

This section outlines the method used for assessing the significance of the potential environmental impacts during the construction/establishment, operational and decommissioning phases.

For each impact, the EXTENT (spatial scale), MAGNITUDE and DURATION (time scale) would be described, as shown in **Table3**. These criteria are then used to determine the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the Report represents the full range of plausible and pragmatic measures but does not necessarily imply that they would be implemented.

The following tables show the scale used to assess these variables and defines each of the rating categories.

TABLE 3: ASSESSMENT CRITERIA FOR THE EVALUATION OF IMPACTS

Criteria	Category	Description
Extent or spatial influence of impact	**Regional**	Beyond a 30km radius of the candidate site.
	Local	Within a 30km radius of the candidate site.
	Site-specific	On site or within 100 m of the candidate site.
Magnitude of impact (at the indicated spatial scale)	**High**	Natural and/ or social functions and/ or processes are *severely* altered
	Medium	Natural and/ or social functions and/ or processes are *notably* altered
	Low	Natural and/ or social functions and/ or processes are *slightly* altered
	Very low	Natural and/ or social functions and/ or processes are *negligibly* altered
	Zero	Natural and/ or social functions and/ or processes remain *unaltered*
Duration of impact	**Long-term**	More than 10 years after construction
	Medium-term	Up to 5 years after construction
	Construction-term	Up to 3 years

The SIGNIFICANCE of an impact is derived by taking into account magnitude, duration and extent of each impact. The criteria employed in arriving at the different significance ratings is shown in Table 4.

TABLE 4: DEFINITION OF SIGNIFICANCE RATINGS

Significance ratings	Level of criteria required
High	• High magnitude with a regional extent and long-term duration • High magnitude with either a regional extent and medium-term duration or a local extent and long-term duration • Medium magnitude with a regional extent and long-term duration
Medium	• High magnitude with a local extent and medium-term duration • High magnitude with a regional extent and construction period or a site-specific extent and long-term duration • High magnitude with either a local extent and construction period duration or a site-specific extent and medium-term duration • Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Low magnitude with a regional extent and long-term duration
Low	• High magnitude with a site-specific extent and construction period duration • Medium magnitude with a site-specific extent and construction period duration • Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Very low magnitude with a regional extent and long-term duration
Very low	• Low magnitude with a site-specific extent and construction period duration • Very low magnitude with any combination of extent and duration except regional and long term
Neutral	• Zero magnitude with any combination of extent and duration

Once the significance of an impact has been determined, the **PROBABILITY** and **CONFIDENCE** of this impact are determined using the rating systems outlined in **Table5** and

Table**6.** The significance of an impact should always be considered in concert with the probability of that impact occurring. Lastly, the **REVERSIBILITY** of the impact is estimated using the rating system outlined in **Table7.**

TABLE 5: DEFINITION OF PROBABILITY RATINGS

Probability ratings	Criteria
Definite	Estimated greater than 95 % chance of the impact occurring.
Probable	Estimated 5 to 95 % chance of the impact occurring.
Unlikely	Estimated less than 5 % chance of the impact occurring.

TABLE 6: DEFINITION OF CONFIDENCE RATINGS

Confidence ratings	Criteria
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

TABLE 7: DEFINITION OF REVERSIBILITY RATINGS

Reversibility ratings	Criteria
Irreversible	The activity will lead to an impact that is in all practical terms permanent.
Reversible	The impact is reversible within 2 years after the cause of the impact is removed.

7. ENVIRONMENTAL IMPACT ASSESSMENT

The biophysical and social environment will be impacted during the construction, operational and decommissioning phases of the cellular mast. For this reason, the impacts below are assessed for all three phases of the mast.

7.1 Impacts during construction and decommissioning

The construction and decommissioning of the cellular mast are likely to result in environmental and socio-economic impacts. The identified impacts are listed below and discussed thereafter:

- *Biodiversity Impact;*
- *Visual;*
- *Generation of dust;*
- *Erosion;*
- *Soil Pollution;*
- *Waste Management;*
- *Noise; and*
- *Socio-economic impact.*

7.1.1. Biodiversity Impact

Description of the potential impact

The affected footprint of the site will be restricted to approximately 100m^2. According to the Mpumalanga Biodiversity Sector Plan, 2014, the proposed site falls within a Critical Biodiversity Area. The process will have no negative impact on the terrestrial ecology of the area.

Significance of the impacts

During the initial site investigation, no significant plant species was identified which could be impacted by the proposed cellular mast. Due to the footprint of the site to be affected, the short construction timeframe as well as the sensitivity of the site identified during the initial site investigation, the impact is regarded to be of low significance.

TABLE 8: SIGNIFICANCE OF BIODIVERSITY IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Impact on biodiversity [NEGATIVE]	**Medium**	**Unlikely**	**Sure**	**Reversible**	**Low**	**Very Low**

Mitigation measures

- Movement of machinery and equipment must be restricted to current access roads;
- An Invasive Species Management Programme must be compiled and complied with during the construction operational phase of the project;
- Stipulations of the Environmental Management Program (EMPr) should be adhered to during the establishment and operational phases of the project.

7.1.2 Visual Impact

Description of the potential impact

During the construction and decommissioning phase of the project, the site might become very untidy. The proposed site will be visible to all road users making use of the dirt road within the area. The number of motorists making use of the dirt road is however very limited.

Significance of the impact

Due to the low traffic flow and the short duration of the construction and decommissioning period, the visual impact during construction is of low significance but can be mitigated to be of very low significance.

TABLE 9: VISUAL IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Visual Impact [NEGATIVE]	**Low**	**Unlikely**	**Sure**	**Reversible**	**Low**	**Very Low**

Mitigation Measures

- The contractor must ensure that the site is tidy during the life of construction and decommissioning and no waste may be visible to residents or motorists passing by.

7.1.3. Generation of dust

Description of the potential impact

As soil will be disturbed during the construction and decommissioning period and heavy moving vehicles will be travelling to and from the site, dust could be generated and could affect adjacent owners and road users.

Significance of the impact

There are no sensitive receptors living within a close proximity to the proposed site and the area to be disturbed is very small. Due to the scale of the project and the short construction and decommissioning timeframe, the significance of the impact is of low significance. Mitigation measures must however be implemented to minimise the possibility of the impact occurring.

TABLE 10: DUST GENERATION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Dust generation [NEGATIVE]	**Low**	**Unlikely**	**Sure**	**Reversible**	**Low**	**Very Low**

Mitigation measures

- Areas may not be disturbed and left for unattended for long periods of time. The establishment of the mast must take place immediately after the area is cleared and disturbed;
- Heavy moving vehicles and other construction vehicles must adhere to a speed limit of 40km/h.

7.1.4 Impact on soil

Description of the potential impact

The topography of the site on which the mast is proposed is relatively flat and therefore the possibility of erosion occurring during construction and decommissioning is relatively low. Mitigation measures to minimise the possibility of erosion is however imperative.

Other activities which could have an impact on soil, include the uncontrolled use of hazardous substances and/or heavy machinery. Hazardous substances such as oil, diesel etc., could be spilled during construction, leading to the pollution of soil which can alter microbial processes and be toxic to soil organisms.

Significance of the impact

During construction and decommissioning, soil could be impacted by the following:

- Erosion; and
- Contamination with the use and possible spillage of hazardous substances.

The slope of the area on which the cellular mast is proposed is relatively flat and for this reason the possibility of erosion occurring is unlikely. The impact is subsequently classified to be of low significance prior to the implementation of mitigation measures.

Another factor impacting soil would be the possible spillage of hazardous substances. This impact is of medium magnitude, site specific and short duration and for this reason the impact is also of low significance prior to the implementation of mitigation measures.

TABLE 11: IMPACT ON SOIL

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Erosion [NEGATIVE]	**Low**	**Unlikely**	**Sure**	**Reversible**	**Low**	**Very Low**
Soil pollution [NEGATIVE]	**Medium**	**Unlikely**	**Sure**	**Reversible**	**Low**	**Very Low**

Mitigation measures

- To minimise the possibility of erosion, it is recommended that no disturbed areas be left unattended. Disturbance and clearance of vegetative cover must be restricted to the development footprint.
- Measures to reduce the velocity of water, must be taken on areas prone to erosion.
- Should there be any spillage of hazardous substances during the construction phase, soil must be removed up to a depth of 300mm and be disposed of at a registered hazardous waste disposal facility. Proof of such disposal must be kept on file.

7.1.5 Noise generation

Description of the potential impact

During construction and decommissioning, activities will generate noise which could affect surrounding landowners and land users. The nearest receptors are located approximately 1 kilometre from the proposed site.

Significance of the impact

Due to the distance and short timeframe of construction and decommissioning, the impact of noise causing disturbance to surrounding landowners or users were assessed to be of low significance.

TABLE 12: NOISE GENERATION

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Noise generation [NEGATIVE]	**Low**	**Probable**	**Sure**	**Reversible**	**Low**	**Very Low**

Mitigation measures

- Construction activities must be limited between 7:00 and 17:00 on weekdays and between 7:00 and 15:00 on Saturdays;
- Ensure that all equipment is in good working order.

7.1.6 Waste management

Description of the potential impact

During construction and decommissioning, domestic and construction waste will be generated, temporarily stored and will need to be disposed of in accordance with the National Environmental Management Waste Act 59 of 2008. The improper storage and disposal of construction and other domestic waste will have a significant impact on the surrounding environment.

As there are no sanitation facilities at the site, temporary sanitation facilities will have to be provided and managed accordingly to prevent any pollution to the surrounding area.

Significance of the impact

Although the construction period is short lived, improper sanitation as well as the storage and disposal of waste will have a long-lasting effect on the environment and therefore the impact is of medium significance prior to the implementation of mitigation measures.

TABLE 13: WASTE MANAGEMENT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Improper waste storage and disposal [NEGATIVE]	**High**	**Probable**	**Sure**	**Reversible**	**Medium**	**Low**

Mitigation measures

- Refuse bins with lids must be provided at the site during construction;
- A temporary waste storage area must be cordoned off at the construction site and must be accessible by a waste removal truck. Waste must be temporarily stored in a waste skip and be removed from site on a weekly basis, or at an acceptable frequency to be determined during the construction period.
- Good housekeeping practises must be implemented, and daily litter patrol undertaken to ensure that there is no littering on the construction site.
- Waste must be removed to a registered waste disposal facility and proof of such disposal must be kept on file;
- Hazardous waste must be stored and disposed of separately and a third-party contractor must be appointed to remove hazardous waste from the construction site;

- Chemical toilet facilities must be provided during construction, 1 toilet for every 15 workers. These facilities must be kept clean and inspected on a regular basis.

7.1.7 Socio-economic Impact

Description of the potential impact

During construction and decommissioning of the cellular mast, various job opportunities will be created, and local suppliers would benefit indirectly from the activities.

In terms of safety and security, there is always risk associated with construction activities and it is therefore essential that all workers comply with the Health and Safety Act 85 of 1993. Surrounding farm owners might also feel threatened and concerned about their safety during the construction period.

Significance of the impacts

Based on the methodology detailed in **Section 5**, the following ratings have been assigned to the 'employment opportunities and impact associated with health and safety of employees and surrounding farm owners, respectively.

The job opportunities are short-lived and therefore the impact is only of medium (+) significance. In terms of the health and safety aspects of workforce as well as surrounding farm owners, the significance of the impact has been rated to be of low significance due to the short construction timeframe. Mitigation measures must however be adhered to.

TABLE 14: SOCIO-ECONOMIC IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Job opportunities **[POSITIVE]**	**Medium**	**Definite**	**Sure**	**Reversible**	**Low**	**Medium (+)**
Health and Safety **[NEGATIVE]**	**Medium**	**Probable**	**Sure**	**Reversible**	**Low**	**Very Low**

Mitigation measures

- The contractor must ensure that residents receive preference for job opportunities where local labour might be required.
- It is imperative that all construction personnel adhere to the Occupational Health and Safety Act 85 of 1998 and that no construction personnel enter any properties except where the mast is proposed to be constructed.

7.2 Operational Phase Impacts

During operation, the cellular mast is likely to result in the following environmental and socio-economic impacts:

- *Visual; and*
- *Socio-economic*

7.2.1 Visual Impact

Description of the potential impact

The area surrounding the proposed site is mostly used for agriculture, with farm households in low densities, spread through the area. During operation, the 25m cellular mast will be visible to a few surrounding land users and will have a visual impact on some of these surrounding farm owner's road users of the dirt road.

Significance of the impact

The visual impact has therefore been rated to be of low significance.

TABLE 15: VISUAL IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Visual Impact [NEGATIVE]	**Medium**	**Probable**	**Sure**	**Reversible**	**Low**	**Low**

Mitigation Measures

- The visual impact during the operational phase can unfortunately not be mitigated.

7.2.2 Socio-economic Impact

Description of the potential impact

Businesses depend on a network infrastructure for all aspects of daily operation and on a personal level, better connectivity enabled family and friends from all over the world to connect by means of the latest technology. During the operation of the cellular mast, residents of surrounding area will enjoy better network connectivity which will have a positive impact on their social and economic environment.

Significance of the impacts

When considering the social and economic impacts of the cellular mast within the Volksrust area, it is evident that the mast will have a positive impact on the surrounding community and for this reason the impact is of high significance.

TABLE 16: SOCIO-ECONOMIC IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Significance	Probability	Confidence	Reversibility	Impact Rating	Impact Rating
Socio-economic development **[POSITIVE]**	**High**	**Definite**	**Sure**	**Reversible**	**High (+)**	**High (+)**

Mitigation measures

No mitigation measures required as the impact is positive.

7.3 Environmental Impact Statement

The table below summarises the impacts identified and assessed for the construction, operational and decommissioning phases of the project:

TABLE 17: ENVIRONMENTAL IMPACT STATEMENT

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
Construction and decommissioning Impacts		
Biodiversity Impact	Low	Very Low
Visual Impact	Low	Very Low
Generation of dust	Low	Very Low
Impact on soil	Low	Very Low
Noise generation	Low	Very Low
Waste generation	Medium	Low
Job opportunities	Low (+)	Medium (+)
Health and Safety	Medium	Low
Operational Phase Impacts		
Visual Impact	Low	Low
Socio-economic Impact	High (+)	High (+)

8. CONCLUSION AND WAY FORWARD

8.1 Assumptions and Limitations

In undertaking this investigation and compiling the Draft Basic Assessment Report, the following has been assumed:

- The information provided by the proponent is accurate and unbiased, and that no information that could change the outcome of the Environmental Authorisation process has been withheld.
- The scope of this investigation is limited to assessing the environmental impacts associated with the construction, operation and decommissioning of the cellular mast.
- The conclusion and recommendations proposed are based solely on the information, scope of works as agreed with the proponent.

8.2 Conclusion

The essence of all environmental assessment processes is aimed at ensuring informed decision-making and environmental accountability. Furthermore, it assists in achieving environmentally sound and sustainable development. The impact assessment for this project has been undertaken in line with the requirements prescribed in the NEMA regulations.

The assessment of the possible impacts associated with the construction, operation and decommissioning activities concluded that the impact on the surrounding environment is of low significance. Recommendations have however been made to address the impacts which could affect the biophysical and socio-economic environment. These recommendations were included within Section 6 and also the Draft Environmental Management Plan attached.

The significance of the potential environmental (biophysical and social) impacts associated with the proposed project are discussed in detail under **Section 6**.

It is the opinion of the EAP that the EA for this project should be granted, and the proposed mitigation included as the conditions of the authorisation.

8.3 Way Forward

The next steps for the Basic Assessment process will be to distribute the Draft Basic Assessment Report and make it available to the public (including the registered I&APs) for a period of 30 days, during which the competent authority will also be given the opportunity to provide comments on the report. After the 30-day comment period, all comments will be addressed by the EAP and incorporated within the Final Basic Assessment Report to be submitted to the DARDLEA for decision making. All registered I&APs will be notified of the decision and will be given an opportunity to appeal as per the NEMA requirements.

9. REFERENCES

National Environmental Management Act 107 of 1998 (NEMA 107, 1998)

General Notice Regulation 982, 983, 984 and 985 of 2014 (as amended in 2017)

Mpumalanga Biodiversity Conservation Plan, 2014