PROJECT IMPACT ASSESSMENT, SIGNIFICANCE AND MITIGATION MEASURES SUMMARY

The following impact rating approach used by EnviroAfrica CC is a basic exponential rating system to assess actual and potential negative and positive environmental impacts.

Environmental activities or aspects are identified, based on:

- the phases of the project,
- the nature (or description) of the actual and potential impacts of the activities.

For every project activity or aspect, various environmental impacts are listed. Every negative impact is allocated a -value as per each of the following criteria:

- Probability (Likelihood)
- Extent
- Duration (Frequency)
- Consequence (Receiving Environment)
- Magnitude (Intensity/severity)

Every positive impact is allocated a +value as per each of the following criteria:

- Probability (Likelihood)
- Extent
- Duration (Frequency)
- Magnitude (Intensity/severity)

Once a value is allocated for each of the criterion, the scores are averaged to determine the final impact rating see Table 1 below.

EnviroAfrica then further assesses environmental significance, based on the nature of the impact, as per the score and colour key which forms part of Table 1 below. This results in impacts having either a low (indicated in green), medium (indicated in yellow) or high (indicated in orange and red) negative significance, and a low (light blue), medium (blue) or a high (dark blue) positive significance

Note: i. As a baseline, impact rating values/scores are allocated taking the **worst-case** scenario into account i.e. with no mitigation. The baseline rating is compared with those after mitigation has been taken into account i.e. the post-mitigation rating. Post mitigation rating is used for the actual impact assessment.

SIGNIFICANCE CRITIERIA	Very High	High	Medium	Low	Negligible (very-low)
Value	**16**	**8**	**4**	**2**	**1**
Probability (likelihood) **(P)**	Definite. Impact will definitely occur (impact will occur regardless of any prevention measures)	Highly probable. Very likely for impact to occur.	Probable. Impact may likely occur.	Improbable. Impact may occur. Distinct Possibility	Improbable. Low likelihood/unlikely for impact to occur.
Extent (E)	Impact potentially reaches beyond national boundaries	Impact has definite provincial/potential national consequences	Impact confined to regional area/ town	Impact confined to local region and impact on neighbouring properties	Impact confined to project property / site
Duration (D)	Permanent The impact is expected to have a permanent impact, with very little to no rehabilitation possible	Long-Term The impact is expected to last for a long time after construction with rehabilitation expected to be 15-50 years. Impact is reversible but only with long-term mitigation	Medium-term The impact is expected to last for some time after construction with rehabilitation expected to be 5 - 15 years. Impact is reversible but only with on-going mitigation	Short-term The impact is expected to last for a relatively short time with rehabilitation expected to be 2-5 years. The impact is reversible through natural process and/or some mitigation.	Very short/ temporary The impact is expected to be temporary and last for a very short time with rehabilitation expected to be less than 2 years. The impact is easily reversible through natural process and/or some mitigation.
Magnitude (Intensity/ Severity) **(M)**	It is expected that the activity will have a very severe to permanent impact on the surrounding environment. Functioning irreversibly impaired. Rehabilitation often impossible or unfeasible	It is expected that the activity will have a severe impact on the surrounding environment. Functioning may be severely impaired and may be temporarily cease. Rehabilitation will be needed to restore system integrity	It is expected that the activity will have an impact on the surrounding environment, but it will maintain its function, even if moderately modified (overall integrity not compromised). Rehabilitation easily achieved	It is expected that the activity will have a perceptible impact on the surrounding environment, but it will maintain its function, even if slightly modified (overall integrity not compromised). Rehabilitation easily achieved	It is expected that the impact will have little or no effect on the integrity of the surrounding environment
Receiving environment (Consequence): **(RE)**	Very sensitive, pristine area – protected site or species permanently or seasonally present	Unused area containing only indigenous fauna / flora species	Unused area containing indigenous and alien fauna / flora species	Semi-disturbed area already rehabilitated / recovered from prior impact, or with moderate alien vegetation	Disturbed area/ transformed/ heavy alien vegetation

ENVIRONMENTAL RATING SIGNIFICANCE KEY:

Negative Impacts

SIGNIFICANCE	RATING	Final rating score / value range
Very Significant	Very High	-11 to -16
Significant	High	-7 to <-11
Increasing Significance	Medium	-4 to <-7
Insignificant	Low	-2 to <-4
	Very Low	-1 to <-2

Positive Impacts

SIGNIFICANCE	RATING	Final rating score / value range
Significant	High	10 to 16
Increasing Significance	Medium	4 to <10
Insignificant	Low	1 to <4

Table 1: **Environmental Significance Rating Methodology (rating criteria and significance key)**

**PLEASE SEE RATING SCORING MATRIX*

Nature of Impact		Impact Assessment Ranking and Proposed Mitigation		
No.	**Impact**	**Environmental Significance (without Mitigation)**	**Proposed Mitigation (i.e. Proposed mitigation to reverse/ avoid, manage or mitigate identified impacts associated with construction, operation, and decommissioning/ closure phases)**	**Environmental Significance (After Mitigation)**
CONSTRUCTION PHASE				
1	**Land-use and cover**: Potential impact on surrounding land-uses.	-4	• All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan (EMP), which must include the recommendations made in this report. • A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and any other conditions pertaining to specialist studies. • Before any work is done protected tree species must be marked and demarcated. If any of these species are to be removed, the appropriate permits approvals must first be obtained. • Lay-down areas or construction sites must be located within the construction footprint. • No clearing of any area outside of the construction footprint may be allowed. • All waste that had been illegally dumped within the footprint must be removed to a Municipal approved waste disposal site. • An integrated waste management approach must be implemented during construction. • Construction related general and hazardous waste may only be disposed of at Municipal approved waste disposal sites. • Alien invasive Prosopis plants within the footprint (and immediate surroundings) must be removed in a responsible way (to ensure against regrowth).	-2
2	**Vegetation status**: Loss of vegetation within an Endangered vegetation type (Atlantis Sandstone Fynbos) and associated habitat.	-3	No plant species of conservational value are expected to be impacted by the proposed development. Moreover, the (i) the high level of disturbance (due to previous grazing) associated with the site and limited plant species which are disturbance indicators (namely common duwweltjie (*Tribulus terrestris*), Fynkweek (*Cynadon dactylon*), and potentially *Cephalophyllum* spp - possibly *Cephalophyllum loreum* - identified during the site visit) may characterize the sensitivity of the proposed site for development as insignificant". • The proposed development footprint is approximately 90m^2 and will therefore not exceed 100m^2 within the endangered vegetation type; • A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase;	-2

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			• Before any work is done the site and access routes must be demarcated (with the aim at minimal width/smallest footprint); • Lay-down areas or construction sites must be located within already disturbed areas or areas of low ecological value and must be pre-approved by the ECO (note, the proposed site for development comprises of disturbed vegetation where plant species within this footprint are not of conservational significance); • Indiscriminate clearing of areas must be avoided; • All areas impacted outside of the proposed construction footprint must be rehabilitated on completion of the project. Except to the extent necessary for the carrying out of the works, no flora may be removed, damaged, or disturbed; • Alien invasive plant species encroachment must be monitored in and around the proposed development footprint. Alien invasive plants must be cleared and removed by hand (where applicable). Where the use of herbicides, pesticides, and other poisonous substances are to be used, the Contractor must submit a Method Statement; • An integrated waste management approach (including recycling and reusing where possible) where must be implemented during construction. • Trapping, poisoning, and/or shooting of animals is strictly forbidden. • The Contractor may not deface, paint, damage or mark any natural features, if these should occur (e.g. trees, rock formations, buildings, etc.) situated in or around the Site for survey or other purposes unless agreed beforehand with the Engineer and the ECO. Any features affected by the Contractor in contravention of this clause must be restored/rehabilitated to the satisfaction of the Engineer and the ECO.	
3	**Conservation priority**: Potential impact on protected areas, CBA's, ESA's or Centre's of Endemism.	-2	The site is not located within a CBA or ESA. The proposed site for development is highly disturbed due to previous grazing by livestock. Some properties, surrounding the proposed site for development are associated with CBA / ESAs (Figure 6 of Pre-Application Draft BAR). However, the following mitigation measures must be implemented: • Construction activities must be restricted to demarcated construction footprint.	-1
4	**Potential impact on the water attenuation feature**	-3	It is envisaged that the proposed development will not impact the water attenuation feature. It must be noted that this feature is non-operational and that the water attenuation feature forms part of stormwater management on site.	-1

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5	**Clearance of vegetation:** Potential impact on threatened or protected plant species.	-3	No plant species of conservational value are expected to be impacted by the proposed development. Moreover, the (i) the high level of disturbance (due to previous grazing) associated with the site and limited plant species which are disturbance indicators (namely common duwweltjie (*Tribulus terrestris*), Fynkweek (*Cynadon dactylon*), and potentially *Cephalophyllum* spp - possibly *Cephalophyllum loreum* - identified during the site visit) may characterize the sensitivity of the proposed site for development as insignificant". The following mitigation measures must be implemented should the Environmental Authorisation be granted: • A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase; • Before any work is done the site and access routes must be demarcated (with the aim at minimal width/smallest footprint); • Lay-down areas or construction sites must be located within already disturbed areas or areas of low ecological value and must be pre-approved by the ECO (note, the proposed site for development comprises of disturbed vegetation where plant species within this footprint are not of conservational significance); • Indiscriminate clearing of areas must be avoided; • All areas impacted outside of the proposed construction footprint must be rehabilitated on completion of the project. Except to the extent necessary for the carrying out of the works, no flora may be removed, damaged, or disturbed; • Alien invasive plant species encroachment must be monitored in and around the proposed development footprint. Alien invasive plants must be cleared and removed by hand (where applicable). Where the use of herbicides, pesticides, and other poisonous substances are to be used, the Contractor must submit a Method Statement; • An integrated waste management approach (including recycling and reusing where possible) where must be implemented during construction. • Trapping, poisoning, and/or shooting of animals is strictly forbidden. • The Contractor may not deface, paint, damage or mark any natural features, if these should occur (e.g. trees, rock formations, buildings, etc.) situated in or around the Site for survey or other purposes unless agreed beforehand with the Engineer and the ECO. Any features affected by the Contractor in	-2

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			contravention of this clause must be restored/rehabilitated to the satisfaction of the Engineer and the ECO.	
6	**Invasive alien plant species**: Potential invasive plant infestation as a result of the activities.	-3	Alien invasive species, namely Rooikrans (*Acacia cyclops*), are present within the non-operational, water attenuation feature. The following mitigation measures must be implemented: • In accordance with CARA all identified alien invasive plants encountered on the property and its immediate surroundings must be controlled. • All alien invasive species must be identified and removed from each site and its immediate surroundings. • No vegetation may be buried or burned on site. • Where the use of herbicides and other poisonous substances are to be used, the Contractor must submit a Method Statement.	-2
7	**Cumulative impacts**: Cumulative impact associated with proposed activity.	-3		-2
8	**The "No-Go" option:** Potential impact associated with the No-Go alternative.	-3	This is the option of not installing the proposed mast, and its associated infrastructure. Although this option would result in no potential negative environmental impacts, the social benefits from implementing the activity would not be achieved/ realized. A more efficient telecommunications service, considered as essential for the business sector and private/social communication, would therefore not be achieved. The proposed activity is not expected to have any high negative environmental impacts; therefore, there are no environmental benefits from not implementing the activity. Moreover, the proposed site for development may be characterized as highly disturbed where vegetation present within the construction footprint are disturbance indicators.	0
9	**Heritage:** Potential impact on any heritage resources	-3	As per the NID, the anticipated impact on heritage resources will be very low. Furthermore, the heritage specialist recommended that a heritage impact assessment will not be required. However, should any heritage resources be discovered during construction or operational phases, the following mitigation measures must be implemented: • Should any heritage resources be discovered, construction activities must be ceased; • The HWC and ECO must be immediately notified and communicated with to provide guidance on the way forward;	-1

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			• Measures, as advised by the HWC, must be implemented.	
10	**Paleontological resources:** Due to the low palaeontological significance of the area, no palaeontological studies are required.	-2	**Site has a low palaeontological significance**: no further palaeontological heritage studies, ground truthing and/or specialist mitigation are required. It is considered that the development of the proposed development is deemed appropriate and feasible and will not lead to detrimental impacts on the palaeontological resources of the area as the igneous rocks underlying the site are not fossiliferous. It is therefore recommended that the project be exempt from a full Paleontological Impact Assessment (Butler 2018).	-1
11	**Erosion**: On site erosion due to improper management of stormwater during construction.	-4	All construction activities must be carried out with caution. The following mitigation measures must be implemented: - Erosion mitigation measures must be implemented[1]; - No storage of materials, including stockpiling of any material, is permitted within 32m of the drainage line; - Any soil which has been exposed outside of the construction footprint, due to construction activities, must be rehabilitated to prevent erosion;	-2
12	**Sewage**: Insufficient number of toilets and / or inappropriate disposal of sewage generated during the construction phase.	-6	The increase in construction personnel during the construction phase will require an appropriate number of toilet facilities for the site. This impact can be fully mitigated. - Appropriate and sufficient toilet facilities (1 toilet per 15 employees) must be provided by the contractor; - All toilet facilities must be checked on a daily basis; - All toilet facilities must be emptied and cleaned on a weekly basis or as agreed (in writing) with the ECO and the DEA&DP - A registered waste removal company must remove sewage waste from the site or be disposed of at a permitted disposal facility; and - Toilet waste receipts must be obtained, and kept on site, for proof of safe disposal.	-1
13	**Solid waste**: Temporary increase in waste and litter contaminating the	-4	The construction phase of the project will see an increase in construction staff on site and therefore an increase in waste. - Littering is strictly prohibited on site;	-2

[1] Erosion control methods include, but are not limited to, silt fences, gabion baskets (where applicable), retention basins, detention ponds, interceptor ditches, seeding and sodding, riprap of exposed embankments, erosion mats and mulching. Exposed areas, susceptible to erosion, must be rehabilitated. This includes planting vegetation, characteristic of the Atlantis Sandstone Fynbos vegetation type (where the ecosystem type was impacted), to stabilize the soil.

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	receiving environment		- A designated waste storage area must be established at the construction site camp. - Waste must be removed from site and disposed of at a registered waste disposal site; - Safe disposal slips for the disposal of all waste must be obtained and kept on site as proof of safe disposal.	
14	**Socio-Economic Impact**	4	The proposed development will provide various signal and connectivity enhancements in the immediate and surrounding areas, providing benefits such as; security, improved medical response, socio-economic development, and access to education. Moreover, the proposed development will promote job creation and improved cellular network coverage. The proposed telecommunication mast will increase mobile network coverage in the surrounding area and is considered as part of essential services for the greater community. Moreover, due to current Covid-19 restrictions, there is an increased demand for such services due to more people working from home. The proposed telecommunication services are also likely to promote business and the private sector (i.e. business profit driver). In terms of the National Development Plan (NDP), South Africa needs to maintain and expand its telecommunications infrastructure in order to support economic growth and social development goals.	4
15	**Dust:** Dust will be generated during the construction of the proposed development which may impact drivers and commuters utilizing Rondeberg Road.	-4	The proposed site for development is located approximately 10m from the Rondeberg Road. Although the generation of dust will be temporary, the following mitigation measures must be implemented: - Vehicle speed must be limited to 15km/h to reduce the amount of dust generated along existing farm roads. - All material, being transported in the back of trucks, must be covered. - Should the mitigation measures be inadequate, water carts must be used on site along the access roads. - The applicant must comply with the National Dust Regulations (Government Notice R827, 2013) with regards to dust levels produced on site.	-2
16	**Visual and Noise**: Noise will be generated during the construction phase.	-3	Construction activities will be limited to the construction area. Construction activities will be limited to and strictly adhered to standard daylight working hours (08h00-17h00). Any noise generated by construction activities will be a temporary impact however, the following mitigation measures will be implemented:	-2

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			- A complaints register must be maintained on-site. Any complaints received must be responded to and rectified accordingly. - The ECO must be notified of any complaints; - All construction vehicles must be fitted with standard silencers. All silencers must be maintained. All machinery used on site must have suppressors. - Working hours must be limited to and strictly adhered to standard daylight working hours (08h00-17h00).	
17	**Unsustainable sourcing of raw materials:** Illegal sourcing of raw materials, such as gravel, sand, water etc. promoting illegal mining operations causing significant damage to the environment.	-7	This impact can be fully mitigated. The following mitigation measures must be implemented: - Contractors must obtain and provide proof of sustainable sourcing of materials brought to, and used on, site. These receipts must be retained on site. - The volume of material (e.g. gravel, sand, etc.) must be recorded. These records must be kept on site.	-3
OPERATIONAL PHASE				
18	**Socio-Economic Impacts**	4	This is a positive impact as the proposed development will provide: • various signal and connectivity enhancements in the immediate and surrounding areas - providing benefits such as; security, improved medical response, socio-economic development, and access to education. • Promote job creation and improved cellular network coverage. • The proposed telecommunication mast will increase mobile network coverage in the surrounding area and is considered as part of essential services for the greater community. • Due to current Covid-19 restrictions, there is an increased demand for such services due to more people working from home. • The proposed telecommunication services are also likely to promote business and the private sector (i.e. business profit driver). • In terms of the National Development Plan (NDP), South Africa needs to maintain and expand its telecommunications infrastructure in order to support economic growth and social development goals.	4

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19	**Visual Impact**: Site may be not aesthetically pleasing with surrounding conditions.	-7	The development of the mast will most probably have a visual impact because of the height of the mast (35m in height) located within an agricultural area (it must be noted that the nature of this development is in line with the consent uses of agricultural zoning). • Restrict the height of the mast to only 35m. • Construct a lattice mast. • Galvanise the mast so as to blend in with the surrounding background sky. • The base station's palisade fence will be painted green to blend in with the surrounding landscape.	-4
DECOMMISSIONING PHASE				
20	**Waste**: Demolition of infrastructure resulting in waste accumulation on-site and surrounding area.	-7	The following mitigation measures must be implemented: - All infrastructure which has been demolished must be consolidated, removed, and disposed of at a registered disposal facility. Waste receipts are required as proof of safe disposal; - The burying and/or burning of waste is strictly prohibited.	-3
21	**Soil**: Exposed soil becoming prone to erosion	-6	The following mitigation measures must be implemented: - Previously transformed areas must be ripped and subsequently rehabilitated with indigenous vegetation characteristic of the Atlantis Sandstone Fynbos (EN). Previously implemented erosion mitigation measures must remain in place.	-3