METHODOLOGY FOR IDENTIFYING AND RATING SIGNIFICANCE OF POTENTIAL IMPACTS

The EAP conducted a desktop study of the proposed site by means of GoogleEarth and then visited the proposed site on 03 April 2023 in order to witness first-hand, the various environmental features that exist on and around the proposed site and to identify the potential environmental impacts of the proposed development.

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

Positive environmental impacts are also listed. All positive impacts need to be enhanced or increased where possible but positive impacts are not rated or given a score since the rating is based on risks.

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:

- Likelihood (Probability)
- Extent (Severity)
- Duration (Frequency)
- Consequence (Receiving Environment and Toxicity)

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

Enviro Africa 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) significance.

Note: i. One environmental aspect or project activity e.g. site clearance may have multiple impacts in different areas.

ii. The various impacts per aspect/project activity are documented in the Quantification of Aspects and Impact/s Significance Rating form (Table 2 Annexure B).

iii. 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.

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

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. 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 may be 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		

IMPACT SIGNIFICANCE RATING KEY:

Negative Impacts

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

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
Geographic and physical	***Direct impacts:***	Low negative	- Implement EMP; - Minimise development footprint; - ECO monitoring; - Waste management. - Limit construction work to normal working hours
	Indirect impacts:	Low negative	
	Cumulative impacts: *After mitigation*	Low negative	
Biological: *(vegetation, protected species, CBAs,)*	***Direct impacts:***	Low negative	• All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan (EMP), which must be developed by a suitably experienced Environmental Assessment Practitioner. • 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 the footprint must be clearly demarcated. The demarcation must aim at minimum footprint and minimisation of disturbance. • A Northern Cape Nature Conservation Act permit must be **obtained for impact on the protected species listed** species on site. • Search & rescue of as many of the *Adenium oleifolium* plants as possible is recommended. Although not a threatened plant species they are of significant medicinal value. Rescued plants should be replanted in similar vegetation to the northwest of the site (away from the urban edge and its associated impact area).
	Indirect impacts:	Low negative	
	Cumulative impacts: *After mitigation*	Low negative	

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
			• All alien invasive species within the footprint and its immediate surroundings must be removed responsibly. • Care must be taken with the eradication method to ensure that the removal does not impact or lead to additional impacts (e.g., spreading of the AIP due to incorrect eradication methods); • Care must be taken to dispose of alien plant material responsibly. • Indiscriminate clearing of any area outside of these footprints may not be allowed. • An integrated waste management approach must be implemented during construction. • Construction related general and hazardous waste may only be disposed of at approved waste disposal sites. • All rubble and rubbish should be collected and removed from the site to a Municipal approved waste disposal site.
Sewage Management	***Direct impacts:***	Low negative	A portable toilet must be provided for every 15 construction workers during the construction phase and the sewage collected and disposed of at a licensed wastewater treatment works at least twice a week.
	Indirect impacts:	Low negative	
	Cumulative impacts: *After mitigation*	Low negative	
Surface water	***Direct impacts:***	Low	• A flow path must be kept open and so houses must not be built in the drainage lines. The distance between houses and the drainage lines must remain adequate for houses to
	Indirect impacts:	Low	

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
	Cumulative impacts: *After mitigation*	Low	remain safe during the occasional events of high-water flow. • Swales must be properly landscaped • Litter must regularly be collected in the green zones where the swales are and removed to the municipal landfill site • Keep construction activities out of the drainage lines. • Limit the footprint of construction activities. • Construct during the dry period • Keep construction period as short as possible and start and finish before next rainy season.
Groundwater	***Direct impacts:***	N/A	
	Indirect impacts:	N/A	
	Cumulative impacts:	N/A	
Socio-economic	***Direct impacts:***	Medium positive	-The recommendations contained in the social impact assessment attached hereto as Appendix 2E must be implemented.
	Indirect impacts:	Medium positive	

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
	Cumulative impacts: *After mitigation*	Medium positive	
Cultural-Historical	***Direct impacts:***	Low	No heritage features of any significance were identified on the proposed site. Please refer to Appendix 2D
	Indirect impacts:	Low	
	Cumulative impacts: *After mitigation*	Low	
Noise impact	***Direct impacts:***	Low	Any noise from the proposed development that exceeds the current levels of noise in the area will be a temporary impact of the construction phase and the noise of the operational phase should revert to levels comparable to the current noise levels. The following mitigation measures will be implemented: - A complaints register will be maintained on-site. Any complaints received will be responded to and rectified accordingly. The ECO must be notified of any complaints - Working hours must be strictly limited to regular daytime working hours (08h00-17h00)
	Indirect impacts:	N/A	
	Cumulative impacts:	N/A	
Visual impact	***Direct impacts:***	Low	The impact avoidance and impact mitigation measures specified in the EMPr approved by the competent authority must be complied with
	Indirect impacts:	Low	
	Cumulative impacts: *After mitigation*	Low	
No-go option			
	Direct impacts:	High negative	

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
The "No-Go" option: Potential impact associated with the No-Go alternative.			- The no-go alternative entails maintaining the *status quo*. This means that in spite of the lack of adequate housing for the residents of Paballelo Site 1 and the lack of access to many municipal services, the Dawid Kruiper Local Municipality would do nothing about the matter. This would amount to a failure by the Dawid Kruiper Local Municipality to deliver a basic service to the community of Paballelo and so adopting the 'no-go' alternative would be highly undesirable, especially when considering that the competent authority can authorise the application with only low negative impacts resulting.
	Indirect impacts:	High negative	
	Cumulative impacts: *After mitigation*	High negative	