

## 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.

APPENDIX N – IMPACT ASSESSMENT



SIGNIFICANCE CRITERIA	Very High	High	Medium	Low	Negligible (very low)
<b>Value</b>	<b>16</b>	<b>8</b>	<b>4</b>	<b>2</b>	<b>1</b>
<b>Probability (likelihood) (P)</b>		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.
<b>Extent (E)</b>	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
<b>Duration (D)</b>		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 2 - 15 years. Impact is reversible but only with on-going mitigation	Short-term / temporary The impact is expected to be temporary or last for a relatively short time with rehabilitation expected to be <2years. The impact is reversible through natural process and/or some mitigation.
<b>Magnitude (Intensity/ Severity) (M)</b>	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
<b>Receiving environment (Consequence): (RE)</b>	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
	Low	-2 to <-4
Insignificant	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
	Low	1 to <4

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

Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	Aspect	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)
<b>CONSTRUCTION PHASE</b>					
1	Biodiversity	<b>Landuse and cover:</b> Potential impact on socio-economic activities.	Low (Negative)	Ensure no further removal of indigenous vegetation. Continue alien vegetation clearance.	Very Low (Negative)
2		<b>Vegetation status:</b> Loss of vulnerable or endangered vegetation and associated habitat.	Medium / Low (Negative)	Ensure no further removal of indigenous vegetation. Continue alien vegetation clearance.	Medium / Low (Negative)
3		<b>Conservation priority:</b> Potential impact on protected areas, CBA's, ESA's or Centre's of Endemism.	Medium / Low (Negative)	Ensure no further removal of indigenous vegetation. Continue alien vegetation clearance.	Medium / Low (Negative)
4		<b>Connectivity:</b> Potential loss of ecological migration corridors.	Low (Negative)	Ensure no further removal of indigenous vegetation. Continue alien vegetation clearance.	Low (Negative)
5		<b>Protected and Endangered plant species:</b> Potential impact on threatened or protected plant species.	Low (Negative)	Ensure no further removal of indigenous vegetation. Continue alien vegetation clearance.	Low (Negative)
6		<b>Fauna and avi-fauna:</b> Potential impact on mammals, reptiles, amphibians and birds	Low (Negative)	Ensure no further removal of indigenous vegetation. Continue alien vegetation clearance.	Low (Negative)
7		<b>Cumulative impact</b> associated with proposed activity.	Medium / Low (Negative)	Ensure no further removal of indigenous vegetation. Continue alien vegetation clearance.	Medium / Low (Negative)
8	Heritage	No impacts expected		No further mitigation is recommended concerning these resources.	
9	Palaeontology	No impacts expected		No further mitigation is recommended concerning these resources.	

APPENDIX N – IMPACT ASSESSMENT



Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	Aspect	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)
10	Agriculture	Loss of potential cropland and loss of future agricultural production potential.	Low (Negative)	No mitigation measures are required for the protection of agricultural production potential on the site because the site is highly unlikely to be utilised for agricultural production in future.	Low (Negative)
11	Visual	Visual impact of development on surrounding landscape	Low (Negative)	Minimise loss of thicket vegetation Considerate use of materials	Low (Negative)
12	Socio-economic	Increase employment opportunities	Low (Positive)	Use local labour, contractors and artisans as far as possible	Low (Positive)
13		Increased motorised and non-motorised traffic levels	Low (Negative)	<ul style="list-style-type: none"> <li>- Rehabilitate the gravel road during and particularly after construction to at least the same standard as is currently.</li> <li>- Provide transport to decrease pedestrian traffic.</li> <li>- Restrict heavy vehicles as far as possible.</li> <li>- Adhere to national traffic safety standards and precaution measures.</li> </ul>	Low (Negative)
14		Increased noise and dust	Low (Negative)	<ul style="list-style-type: none"> <li>- Minimise the amount of vegetation cleared</li> <li>- Adhere to the Environmental Management Plan (EMPr) for the Construction and Decommissioning Phase.</li> <li>- All workers and management must undergo an induction course.</li> <li>- Any natural habitat destroyed by constructing infrastructure should be rehabilitated.</li> <li>- Implementation dust suppression measures;</li> <li>- Access must be on recognized routes.</li> <li>- Litter and littering must be strictly controlled.</li> <li>- All construction waste and building rubble and demolition waste and rubble must be removed off site.</li> <li>- Cut and fill should be kept to a minimum and should be rehabilitated immediately.</li> </ul>	Low (Negative)

APPENDIX N – IMPACT ASSESSMENT



Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	Aspect	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)
<b>OPERATIONAL PHASE</b>					
1	Estuary	Water Pollution	Medium (Negative)	<ul style="list-style-type: none"> <li>- Properly maintain the sewerage system.</li> <li>- Do not over-irrigate the garden, prevent return flow.</li> <li>- Install and maintain storm water management infrastructure such as berms, swales and trenches in and next to roads.</li> <li>- Maintain a proper waste collection and disposal protocol.</li> </ul>	Low (Negative)
2		<ul style="list-style-type: none"> <li>• Disturbance of the estuary</li> <li>• Over-fishing</li> <li>• Bait collection</li> <li>• Trampling</li> </ul>	Medium (Negative)	<ul style="list-style-type: none"> <li>- Set up house rules that promotes proper behaviour of guests and visitors.</li> <li>- Record the fish taken.</li> <li>- Prevent over-utilisation of the estuary.</li> <li>- Obtain input from conservation authorities.</li> </ul>	Low (Negative)
3	Visual	Visual impact of development on surrounding landscape	Low (Negative)	<ul style="list-style-type: none"> <li>- No further loss of thicket vegetation</li> </ul>	Low (Negative)
4	Socio-economic	Permanent employment opportunities	Low (Positive)	<ul style="list-style-type: none"> <li>- Local employment to be used</li> </ul>	Low (Positive)
5		Eco-tourism	Low (Positive)	No mitigation	Low (Positive)

VERMAAKLIKHEID														
Nature of Impact			Without Mitigation (Baseline)					Without Mitigation Score (Baseline)	With Mitigation					With Mitigation Score (Impact Assessment)
Number	Aspect	Impact	Probability (Likelihood)	Extent	Duration (Frequency)	Magnitude (Intensity/Severity)	Receiving Environment (Significance/Consequence)		Probability (Likelihood)	Extent	Duration (Frequency)	Magnitude (Intensity/Severity)	Receiving Environment (Significance/Consequence)	
<b>CONSTRUCTION PHASE</b>														
1	Biodiversity	<b>Landuse and cover:</b> Potential impact on socio-economic activities.	-1	-1	-8	-1	-8	-3	-1	-1	-8	-1	-8	-3
2		<b>Vegetation status:</b> Loss of vulnerable or endangered vegetation and associated habitat.	-4	-1	-4	-1	-8	-4	-4	-1	-4	-1	-8	-4
3		<b>Conservation priority:</b> Potential impact on protected areas, CBA's, ESA's or Centre's of Endemism.	-4	-1	-4	-1	-8	-4	-4	-1	-4	-1	-8	-4
4		<b>Connectivity:</b> Potential loss of ecological migration corridors.	-4	-1	-4	-1	-8	-3	-4	-1	-4	-1	-8	-3
5		<b>Protected and Endangered plant species:</b> Potential impact on threatened or protected plant species.	-4	-1	-4	-1	-4	-2	-4	-1	-4	-1	-4	-2
6		<b>Fauna and avi-fauna:</b> Potential impact on mammals, reptiles, amphibians and birds	-4	-1	-4	-1	-4	-2	-4	-1	-4	-1	-4	-2
7		<b>Cumulative impact</b> associated with proposed activity.	-4	-1	-4	-1	-8	-4	-4	-1	-4	-1	-8	-4
8	Heritage	No impact												
9	Palaeontology	No impact												
10	Agriculture	Loss of potential cropland and loss of future agricultural production potential.	-4	-1	-4	-1	-1	-2	-4	-1	-4	-1	-1	-2
11	Visual	Visual impact of development on surrounding landscape	-4	-1	-4	-1	-4	-3	-4	-1	-4	-1	-4	-3
12	Socio-economic	Increase employment opportunities	4	1	4	1	4	3	4	1	4	1	4	3
13		Increased motorised and non-motorised traffic levels	-4	-1	-2	-1	-4	-3	-4	-1	-1	-1	-4	-3
14		Increased noise and dust	-4	-1	-2	-1	-4	-3	-4	-1	-1	-1	-4	-3

Nature of Impact		Without Mitigation (Baseline)					Without Mitigation Score (Baseline)	With Mitigation					With Mitigation Score (Impact Assessment)	
Number	Aspect	Impact	Probability (Likelihood)	Extent	Duration (Frequency)	Magnitude (Intensity/Severity)	Receiving Environment (Significance/Consequence)	Without Mitigation Score (Baseline)	Probability (Likelihood)	Extent	Duration (Frequency)	Magnitude (Intensity/Severity)	Receiving Environment (Significance/Consequence)	With Mitigation Score (Impact Assessment)
<b>OPERATIONAL PHASE</b>														
1	Estuary	Water Pollution	-2	-1	-4	-1	-8	-4	-1	-1	-4	-1	-8	-3
2		• Disturbance of the estuary • Over-fishing • Bait collection • Trampling	-2	-1	-4	-1	-8	-4	-1	-1	-4	-1	-8	-3
3	Visual	Visual impact of development on surrounding landscape	-4	-1	-4	-1	-4	-2	-4	-1	-4	-1	-4	-2
4	Socio-economic	Permanent employment opportunities	8	1	8	1	2	4	8	1	8	1	2	4
5		Eco-tourism	8	2	8	1	2	5	8	2	8	1	2	5