

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.

IMPACT ASSESSMENT



| SIGNIFICANCE CRITERIA | 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 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 |
| | 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 |
| Insignificant | Low | 1 to <4 |

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) |
| CONSTRUCTION PHASE | | | | | |
| 1 | Impact on Cultural, Archaeological, and Heritage Resources | Loss and/or damage to potential archaeological and historical sites within the construction footprint | Low | <ul style="list-style-type: none"> - Should any archaeological remains (including but not limited to fossil bones and fossil shells, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts and bone remains, structures and other built features, rock art and rock engravings) are discovered during construction they must immediately be reported to the South African Heritage Resources Agency (“SAHRA”) and must not be disturbed further until the necessary approval has been obtained from SAHRA. - Should any human remains/burial or archaeological material be disturbed, exposed or uncovered during construction, these should immediately be reported to the SAHRA (021 462 4502). The ECO and ER are also to be informed. An archaeologist will be required to remove the remains at the expense of the applicant - Note that the Contractor must not, without a permit issued by the responsible heritage resource authority; destroy, damage, excavate, alter, deface or otherwise disturb any archaeological site or archaeological material. The latter is a criminal offence under the Heritage Resources Act. - The Fossil Find Procedure must be implemented, should any fossil material be discovered during construction, this must be safeguarded (preferably <i>in situ</i>) and the Environmental Control Officer (ECO) should alert the SAHRA so that appropriate mitigation (e. g. recording, sampling, or collection) can be taken by a professional palaeontologist. | Low |
| 2 | Impact on Palaeontological Resources | Loss and/or damage to potential fossils within the construction footprint | Low | <p>Significant impacts on fossil heritage resources are not expected.</p> <p>The Fossil Find Procedure must be implemented. Should any fossil material be discovered during construction, this must be safeguarded</p> | Low |

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|------------------|----------------------|--|---|---|---|
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| | | | | (preferably <i>in situ</i>) and the Environmental Control Officer (ECO) should alert the SAHRA so that appropriate mitigation (<i>e. g.</i> recording, sampling, or collection) can be taken by a professional palaeontologist at the expense of the applicant. | |
| 3 | Botanical | N/A | | | |
| 4 | Groundwater | Groundwater pollution caused by inadequate on-site ponding of stormwater | High | Put in place and maintain an adequate stormwater management system | Low (Negative) |
| 5 | Freshwater Resources | N/A | | | |
| 6 | Socio-economic | Creation of long-term employment opportunities. | Low (Positive) | | |
| 7 | Dust | Dust may be generated during the construction of the proposed development. | Medium (Negative) | <p>The Contractor must take all reasonable measures to minimize the generation of dust as a result of construction activities resulting from along-construction-route activities (but must also take into account possible water constrictions of the area).</p> <ul style="list-style-type: none"> - The onsite construction site agent must take into account prevailing wind strength and wind direction and must have preventative measures on standby to minimize dust pollution that may cause nuisance to people and property. - The liberation of dust into the surrounding environment shall be effectively controlled by the use of, <i>inter alia</i>, water spraying and/or other dust-allaying agents. The speed of construction | Low (Negative) |

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| | | | | vehicles must be strictly controlled to avoid dangerous conditions and excessive dust. | |
| 8 | Visual | Visual impact of construction activities on site | Low (Negative) | <ul style="list-style-type: none"> - Construction activities should limited to within the construction footprint - The contractor must not operate any machinery outside the demarcated area. | Low (Negative) |
| 9 | Traffic | Increase in construction vehicles and machinery | Medium (Negative) | Cognisance must be taken of traffic and other road users in the area. | Low (Negative) |
| 10 | Noise | Noise will be generated during the construction phase. | Low (Negative) | <p>Any noise generated by construction activities will be a temporary impact however, the following mitigation measures will be implemented:</p> <ul style="list-style-type: none"> - A complaint register to 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 strictly limited to to standard daylight working hours (08h00-17h00). | Low (Negative) |

| OPERATIONAL PHASE | | | | | |
|-------------------|----------------------|--|-----------------|--|----------------|
| 11 | Freshwater Resources | N/A | N/A | N/A | N/A |
| 12 | Visual | Visual impact of the cemetery expansion | Low (Negative) | Fence of dull colour will be constructed to obscure the cemetery from onlookers. | Low (Negative) |
| 13 | Groundwater | Stormwater ponding and subsequent infiltration leading to localised perched water tables at the bedrock-soil interface | Low (Negative) | -An effective stormwater management system must be put in place and maintained to help prevent stormwater ponding and infiltration on the proposed site. | Low (Negative) |
| 14 | Socio-economic | Alleviation of looming shortage of burial spaces where the community can bury their loved ones | High (Positive) | No mitigation necessary | |