Environmental Basic Assessment for the rehabilitation of the regional road R61, Section 3, between Cradock (km 24.2) and Tarkastad (km 75.0) in the Eastern Cape Province

Appendix G - detailed impact assessment

Taking the assessment of potential impacts into account, an environmental impact statement is provided that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Method and criteria for the rating of impacts

Impacts were assessed in terms of the criteria presented in the table below.

Criteria used to determine the significance ratings

Criteria	Description
Spatial extent	The extent of impact describes the region in which the impact will be experienced: • Site specific • Local (< 2km from site) • Regional (within 30km of the site) • National
Intensity or Magnitude of impact	The intensity describes the magnitude or size of the impact: • 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 negligibly altered
Duration	The duration is the time frame in which the impact will be experienced: • Temporary (<1 year) • Short term (1 to 6 years) • Medium term (6 to 15 years) • Long term (15 - 30 years) • Permanent
Probability	The probability of the impact occurring: • Improbable (little or no chance of occurring) • Probable (< 50% chance of occurring) • Highly probable (50% - 90% chance of occurring) • Definite (>90% chance of occurring)

The impacts are assessed (rated) in terms of their significance (high, medium, low), status and confidence through a synthesis of the criteria given in the table above. The rating system is outlined in the table below.

Method for Rating of Impacts

Class	Description
Significance	• High: impacts of high magnitude locally for longer than 6 years and/or regionally and beyond. The impact results in major alterations to the environment even if effective mitigation measures are implemented and will have an influence on decision-making. • Medium: impacts of moderate magnitude locally to regionally in the short term. The impact results in medium alterations to the environment and can be reduced or eliminated by the implementation of effective mitigation measures. • Low to very low: impacts will be localised and temporary. Impacts result in minor alterations to the environment and can easily be alleviated by the implementation of effective mitigation measures. • No impact: a potential concern or impact, which, upon evaluation, is found to have no significant impact at all.
Status	The status is the overall effect on the environment: • Positive - a 'benefit' • Negative - a 'cost' • Neutral
Confidence	The degree of confidence in predictions based on available information and specialist knowledge: • Low • Medium • High

Impact Assessment

ALTERNATIVE 1 (preferred alternative)

Alternative 1 (preferred alternative)

Planning and design phase

No undue negative environmental impacts are expected to arise during the planning and design phase of the project. This prediction is made with high confidence. Hence no rating table is provided.

Alternative 1 (preferred alternative)

Construction phase

During construction, neighbours and road users potentially will be affected by noise, dust, traffic congestion, damage to service infrastructure and other construction related nuisances. These negative impacts will be mostly site specific and temporary, and will have a low magnitude. With mitigation in place the environmental significance is low or very low. This prediction is made with high confidence. Specific impacts during construction are rated in the table below, assuming effective mitigation is implemented.

Summary rating table of potential impacts identified for the construction phase

Impact	Extent	Duration	Intensity	Probability	Significance	Status	Confidence
Ecology	Local	Temporary	Low	Probable	Medium-low	Negative	High
Water courses	Local	Temporary	Low	Probable	Low	Negative	High
Erosion, storm water	Site	Temporary	Low	Highly probable	Low	Negative	High
Socio-economic	Regional	Temporary	Low	Probable	Low	Positive	Medium
Noise	Local	Temporary	Low	Highly probable	Low/very low	Negative	High
Air quality	Local	Temporary	Low	Highly probable	Low	Negative	High
Waste	Local	Temporary	Low	Improbable	Insignificant	Negative	High
Traffic	Regional	Temporary	Low	Highly probable	Very low	Negative	High
Existing services	Local	Temporary	Medium	Improbable	Low	Negative	High
Archaeological resources	Local	Temporary	Low	Improbable	Insignificant	Negative	High
Palaeontological resources	Local	Temporary	Low	Improbable	Insignificant	Negative	High

Alternative 1 (preferred alternative)

Operational phase
Positive impacts during the operational phase include an increase in the transportation capacity and safety of the roads. The road upgrade will also lead to improved management of stormwater by means of the associated infrastructure improvements that have been proposed. With mitigation in place the medium to low negative environmental impact on the surrounding Critical Biodiversity Area will remain unchanged from the pre-construction situation. This prediction is made with high confidence. Specific impacts during operation are rated in the table below, assuming effective mitigation is implemented..

Summary rating table of potential impacts identified for the operational phase

Impact	Extent	Duration	Intensity	Probability	Significance	Status	Confidence
Ecology	Local	Permanent	Low	High	Medium-low	Negative	High
Storm water and erosion	Local	Long term	Low	High	Low	Positive	High
Traffic	Regional	Long term	Medium	High	Medium	Positive	High

Alternative 1 (preferred alternative)

Decommissioning and closure phase
The Regional Route R61 will not be closed in the foreseeable future. Hence no impacts for this phase need to be rated and no rating table is provided.

NO-GO ALTERNATIVE (compulsory)

No-Go Alternative

Planning and design phase

No undue negative environmental impacts are expected to arise during the planning and design phase of the do nothing option. This prediction is made with high confidence. Hence no rating table is provided.

No-Go Alternative

Construction phase

No undue negative environmental impacts are expected to arise during the planning and design phase of the do nothing option. This prediction is made with high confidence. Hence no rating table is provided.

No-Go Alternative

Operational phase

The No-Go alternative is not regarded as a viable option as the road upgrade is well motivated for in terms of Regional Route standards that need to be achieved for this section. Moreover, the road will become much safer to travel on if the upgrade is made. Impacts on the ecology are likely to remain unchanged whether the road is upgraded or not. Even though the environmental significance will be low in respect of the ecology, the impact on traffic and erosion management structures will be appreciable. This prediction is made with high confidence. Specific impacts of the do nothing option are rated in the table below..

Summary rating table of potential impacts if the road upgrade does not go ahead (NO-GO alternative)

Impact	Extent	Duration	Intensity	Probability	Significance	Status	Confidence
Ecology	Local	Long-term	Low	Probable	Low	Negative	High
Storm water and erosion	Site	Long-term	Low	Probable	Llow-medium	Negative	High
Traffic	Regional	Long-term	Medium	Definite	Medium	Negative	High

No-Go Alternative

Decommissioning and closure phase

This part is not applicable, hence no rating table is provided.