Application for Environmental Authorisation for the Proposed Extensions at Ngwenya Lodge near Kruger National Park, Mpumalanga Province

APPENDIX E IMPACT ASSESSMENT TABLES

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October 2021

1. ASSESSMENT CRITERIA

The impacts anticipated to occur as a result of the proposed development are assessed/ evaluated to determine their significance. The following assessment criteria are used:

Extent (how far the impact extends):

- (1) Very low: within the site only
- (2) Low: within the local neighbourhoods
- (3) Medium: within the region
- (4) High: Nationally
- (5) Very high: Internationally

Duration (the timeframe over which the effects of the impact will be felt):

- (1) Very short: 0-2 years
- (2) Short: 3-5 years
- (3) Medium: 5-15 years
- (4) Long: >15 years
- (5) Permanent

Magnitude (the severity or size of the impact):

- (0) None
- (2) Minor
- (4) Low
- (6) Moderate
- (8) High
- (10) Very High

Probability (the likelihood of the impact actually occurring):

- (1) Very improbable: Less than 20% sure of the likelihood of an impact occurring
- (2) Improbable: 20-40% sure of the likelihood of an impact occurring
- (3) Probable: 40-60% sure of the likelihood of an impact occurring
- (4) Highly probable: 60-80% sure of the likelihood of that impact occurring
- (5) Definite: More than 80% sure of the likelihood of that impact occurring

The significance of the potential visual impact is determined by the sum of the individual scores for extent, duration and magnitude multiplied by the probability of the impact occurring i.e. significance = (extent + duration + magnitude) x probability.

The significance rating scale is interpreted as follows:

- (0-12) Negligible: Impact would be of a very low order. In the case of negative impacts, almost no mitigation and or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap, and simple. In the case of positive impacts, alternative means would almost all likely be better, in one or a number of ways, than this means of achieving the benefit.

- (13-30) Low: Impact would be of a low order and with little real effect. In the case of negative impacts, mitigation and / or remedial activity would be either easily achieved or little would be required, or both. In case of positive impacts alternative means for achieving this benefit would likely be easier, cheaper, more effective, less time-consuming, or some combination of these.

- (31-56) Moderate: Impact would be real but not substantial. In the case of negative impacts, mitigation and / or remedial activity would be both feasible and fairly easily possible. In the case of positive impacts, other means of achieving these benefits would be about equal in time, cost, and effort.

- (57-90) High: Impacts of a substantial order. In the case of negative impacts, mitigation and / or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these. In the case of positive impacts, other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.

- (91-100) Very High: Of the highest order possible. In the case of negative impacts, there would be no possible mitigation and / or remedial activity and in the case of positive impacts, there is no real alternative to achieving the benefit.

- *Positive impacts*

2. ENVIRONMENTAL IMPACT ASSESSMENT

The tables that follow detail the assessment of the significance of anticipated environmental impact during the entire project life cycle according to the impact assessment criteria. The findings of the various specialists appointed as part of the BAR process have informed the impact assessment below. These impacts been supplemented with additional impacts as deemed appropriate by the EAP.

2.1 Impacts that may result from the Planning and Design Phase

Planning and design phase impacts refer to those impacts that may be mitigated through planning decisions. In this respect, the potential impacts are articulated as '**risks**' rather than '**impacts**', because in reality, no impact occurs on the ground at all during the planning phase. The rationale behind this approach is to demonstrate the mitigating effect of environmentally responsible and appropriate planning and design during this phase.

Potential impacts:	Extent (1-5)	Duration (1-5)	Magnitude (0-10)	Probability (1-5)	Significance	Proposed mitigation:	Extent (1-5)	Duration (1-5)	Magnitude (0-10)	Probability (1-5)	Significance
ALTERNATIVE A1 (PREFERRED ALTERNATIVE)- PLANNING AND DESIGN											
Direct Impacts											
Ground water											
None.						•					
Hydrology (surface water)											
Risk to ecological function of the Crocodile River and drainage lines due to possible placement of structures and infrastructure within the habitat. This pertains to the placement of 3 bird hides, the restaurant and 3 sewage pump stations.	1	4	8	5	65 H	• Hydrology, including ground water, surface water and storm water management as per the EMPr (section 7.1).	1	4	6	3	33 M
Risk to hydrological function (quality and fluctuation properties) along the Crocodile River and drainage lines due to activity and disturbance near the	2	4	8	5	65 H		2	3	4	3	27 L

watercourse. This pertains to the placement of 3 bird hides, the restaurant and 3 sewage pump stations.												
Soil												
Erosion risk to soils due to increased hard surfaces, associated increase in storm water runoff.	1	4	8	4	52 M	• Hydrology, including ground water, surface water and storm water management as per the EMPr (section 7.1).	1	4	4	3	27 L
Air												
None.						•						
Biodiversity (Flora)												
Risk to ecological support areas: Protected Area Buffer due to vegetation clearing and the placement of structures and infrastructure. The entire site is situated within the ESA: Protected Area Buffer.	3	4	4	5	55 M	• Biodiversity Management, including storm water management and waste management as per the EMPr (section 7.2).	3	4	2	3	27 L
Risk to Delagoa Lowveld vegetation classified as Least Threatened and the associated loss of species richness due vegetation clearing and to the placement of structures and infrastructure.	3	4	4	5	55 M		3	4	2	3	27 L
Risk to sensitive habitats, specifically the riparian habitat due to the placement of structures and infrastructure. This pertains to the placement of 2 sewage pump stations, 3 bird hides, 13 chalet units and a portion of the restaurant.	2	4	8	4	56 M		2	4	6	3	36 M
Risk to Conservation Important Species and protected trees. i.e. *Elaeodendron transvaalense* (NT), *Dalbergia melanoxylon* (NT), *Sclerocarya birrea, Combretum imberbe, Philenoptera violacea* and *Elaeodendron transvaalense, Aloe chabaudii, A. marlothii, A. spicata, A. parvibracteata* due to the placement of structures and infrastructure within the	2	4	8	4	56 M		2	4	4	3	30 L

habitat.												
Biodiversity (Fauna)												
Risk of habitat fragmentation due to removal and alteration of the habitat and the development of structures and infrastructure.	1	4	6	4	44 M	• Biodiversity Management, including storm water management and waste management as per the EMPr (section 7.2).	1	4	4	3	27 L
Risk to the untransformed vegetation communities (Riparian forest, Closed Woodland and Degraded Woodland) which are key habitats and migration corridors for fauna.	2	4	6	4	48 M		2	4	4	3	30 L
Land Use & Agricultural Potential												
None.						•						
Visual												
Risk to visual quality of the surrounding area and sense of place due to the development of structures and infrastructure at the property within an otherwise natural environment.	2	4	8	4	56 M	• Visual planning as per the EMPr (section 7.2.5).	2	4	4	2	20 L
Socio-economics												
None.						•						
Municipal services & traffic												
None.						•						
Indirect Impacts												
None												
Cumulative Impacts												
Biodiversity (Flora)												
Cumulative reduction of Conservation Important Species and protected trees. i.e. *Elaeodendron transvaalense* (NT), *Dalbergia melanoxylon* (NT), *Sclerocarya birrea, Combretum imberbe, Philenoptera violacea* and *Elaeodendron transvaalense, Aloe chabaudii, A. marlothii, A. spicata, A. parvibracteata.* This will result in the overall loss of these species.	3	5	8	4	64 H	• Biodiversity Management, including water management and waste management as per the EMPr (section 7.2).	3	5	6	2	28 L
Cumulative loss of sensitive habitats, specifically riparian vegetation. This will result in the overall	2	5	8	4	60 H		2	5	6	2	26 L

reduction of riverine vegetation.											
Biodiversity (Fauna)											
Cumulative loss of faunal habitat.	2	4	6	3	36 M	• Biodiversity Management, including water management and waste management as per the EMPr (section 7.2).	2	4	4	2	20 L

NO-PROJECT ALTERNATIVE											
Direct Impacts											
None.						•					
Indirect Impacts											
None.						•					
Cumulative Impacts											
None.						•					

Potential impacts:	Extent (1-5)	Duration (1-5)	Magnitude (0-10)	Probability (1-5)	Significance	Proposed mitigation:	Extent (1-5)	Duration (1-5)	Magnitude (0-10)	Probability (1-5)	Significance
ALTERNATIVE A2 (LAYOUT ALTERNATIVE)- PLANNING AND DESIGN											
Direct Impacts											
Ground water											
None.						•					
Hydrology (surface water)											
Risk to ecological function of the Crocodile River and drainage lines due to possible placement of structures and infrastructure within the habitat. This pertains to the placement of 3 bird hides, 5x chalet units and 3 sewage pump stations.	1	4	8	5	65 H	• Hydrology, including ground water, surface water and storm water management as per the EMPr (section 7.1).	1	4	6	3	33 M

Risk to hydrological function (quality and fluctuation properties) along the Crocodile River and drainage lines due to activity and disturbance near the watercourse. This pertains to the placement of 3 bird hides, 5x chalet units and 3 sewage pump stations.	2	4	8	5	65 H		2	3	4	3	27 L
Soil											
As per Alternative 1: Preferred Alternative						• Hydrology, including ground water, surface water and storm water management as per the EMPr (section 7.1).					
Air											
None.						•					
Biodiversity (Flora)											
Risk to ecological support areas: Protected Area Buffer due to vegetation clearing and the placement of structures and infrastructure. The entire site is situated within the ESA: Protected Area Buffer.	3	4	4	5	55 M	• Biodiversity Management, including storm water management and waste management as per the EMPr (section 7.2).	3	4	2	3	27 L
Risk to Delagoa Lowveld vegetation classified as Least Threatened and the associated loss of species richness due vegetation clearing and to the placement of structures and infrastructure.	3	4	4	5	55 M		3	4	2	3	27 L
Risk to sensitive habitats, specifically the riparian habitat due to the placement of structures and infrastructure. This pertains to the placement of 2 sewage pump stations, 3 bird hides and 18 chalet units.	2	4	8	4	56 M		2	4	6	3	36 M
Risk to Conservation Important Species and protected trees. i.e. *Elaeodendron transvaalense* (NT), *Dalbergia melanoxylon* (NT), *Sclerocarya birrea, Combretum imberbe, Philenoptera violacea* and *Elaeodendron transvaalense, Aloe chabaudii,*	2	4	8	4	56 M		2	4	4	3	30 L

A. marlothii, A. spicata, A. parvibracteata due to the placement of structures and infrastructure within the habitat.											
Biodiversity (Fauna)											
As per Alternative 1: Preferred Alternative						• Biodiversity Management, including storm water management and waste management as per the EMPr (section 7.2).					
Land Use & Agricultural Potential											
None.						•					
Visual											
As per Alternative 1: Preferred Alternative						• Visual planning as per the EMPr (section 7.2.5).					
Socio-economics											
None.						•					
Municipal services & traffic											
None.						•					
Indirect Impacts											
None											
Cumulative Impacts											
Biodiversity (Flora)											
As per Alternative 1: Preferred Alternative						• Biodiversity Management, including water management and waste management as per the EMPr (section 7.2).					
Biodiversity (Fauna)											
As per Alternative 1: Preferred Alternative						• Biodiversity Management, including water management and waste management as per the EMPr (section 7.2).					

2.2 Impacts that may result from the Construction Phase

Construction phase impacts refer to those impacts that may be mitigated through sound construction management.

Potential impacts:	Extent (1-5)	Duration (1-5)	Magnitude (0-10)	Probability (1-5)	Significance	Proposed mitigation:	Extent (1-5)	Duration (1-5)	Magnitude (0-10)	Probability (1-5)	Significance
ALTERNATIVE A1 (PREFERRED ALTERNATIVE) - CONSTRUCTION PHASE											
Direct Impacts											
Ground water											
Depletion of ground water due to overuse and waste during construction activities	2	1	8	3	33 M	• Pre-construction planning as per the EMPr (section 8.1) • Hydrology, including groundwater as per the EMPr (section 8.2). • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr)	2	1	4	3	21 L
Pollution and contamination of ground water due to: • Surface runoff • Unmanaged sewage discharge, leaks and spills • Solvent, paints and chemical spills • Hydrocarbon and fuel leaks and spills	2	1	8	3	33 M		2	1	6	2	18 L
Hydrology (surface water)											
Disturbance and loss of ecological function of the habitat (physical structure) of the Crocodile river and along the drainage lines due to: • Clearing and destruction of riparian and wetland vegetation • Loss of fringing vegetation and erosion of denuded areas • Invasion by alien invasive trees and plants • Alteration in natural fire regimes • Shading of natural vegetation • Destabilization of banks This pertains to the placement of 3 bird hides, 13	1	1	10	5	60 H	• Pre-construction planning as per the EMPr (section 8.1) • Hydrology, including surface water as per the EMPr (section 8.2). • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr)	1	1	6	4	32 M

chalet units, the restaurant and 3 sewage pump stations being placed within the 32 m buffer and the riparian vegetation.												
Disturbance and loss of hydrological function (quality and fluctuation properties) along the Crocodile River and drainage lines due to: • Destruction of riparian habitat • Alteration of surface characteristics (roughness) due to activity within the water course (uncontrolled access by workers) • Removal of stabilising vegetation (uncontrolled clearing and access by workers) • Sedimentation and siltation from erosion This pertains to the placement of 3 bird hides, 13 chalet units, the restaurant and 3 sewage pump stations being placed within the 32 m buffer and the riparian vegetation.	1	1	10	5	60 H		1	1	6	4	32 M
Pollution and contamination of the Crocodile river and drainage lines due to: • Unmanaged runoff of grey water, cement slurry and wash water. • Unmanaged sewage discharge, leaks and spills • Solvent, paints and chemical spills • Litter and other inert construction waste. • Hydrocarbon and fuel leaks and spills	3	1	10	4	56 M		3	1	6	3	30 L
Soil												
Soil contamination and pollution due to: • Unmanaged surface runoff (grey water, cement slurry and wash water) • Unmanaged sewage discharge, leaks and spills	1	1	8	4	40 M	• Pre-construction planning as per the EMPr (section 8.1) • Biodiversity Management, specifically soil contamination and erosion as per the EMPr (section	1	1	4	3	18 L

• Solvent, paints and chemical spills • Litter and other inert construction waste. • Hydrocarbon and fuel leaks and spills						8.3.1 and 8.3.2) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr)					
Soil erosion by wind and rain due to: • The removal of stabilising vegetation • Soil compaction by movement of construction vehicles, equipment and activities • Decrease in water infiltration and an increase of water runoff in construction areas • Disturbance of sensitive soils	1	4	6	4	44 M		1	4	4	3	27 L
Soil compaction and increased risk of sediment transport and erosion.	1	1	8	4	40 M		1	1	4	3	18 L
Air											
Air pollution due emissions from construction vehicles and equipment.	3	1	4	4	32 M	• Pre-construction planning as per the EMPr (section 8.1) • Biodiversity Management, specifically air quality as per the EMPr (section 8.3.4) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	3	1	4	3	24 L
Dust liberated by general construction activities and movement of construction vehicles.	2	1	6	4	36 M		2	1	4	3	21 L
Smoke from open fires used by site staff for heating and cooking as well as from uncontrolled fires.	2	1	6	4	36 M		2	1	4	3	21 L
Biodiversity (Flora)											
Removal of invader alien species (positive impact). *A large seed base of invasive alien species is already present.*	*1*	*1*	*6*	*3*	*24 L*	• Pre-construction planning as per the EMPr (section 8.1) • Biodiversity Management, specifically flora as per the EMPr (section 8.3.5, 8.3.6, 8.3.7, 8.3.8) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	*1*	*1*	*8*	*5*	*50 M*
Loss of ecological support areas: protected area buffer and areas classified as Heavily modified/ other natural areas due to: • Site clearing ahead of construction • General construction activities and movement of construction vehicles	1	5	4	5	50 M		1	4	2	4	28 L

Loss of Delagoa Lowveld vegetation classified as Least Threatened and associated loss of species richness due to: • Site clearing ahead of construction • General construction activities and movement of construction vehicles • Unmanaged sewage discharge, leaks and spills • Solvent, paints and chemical spills • Hydrocarbon and fuel leaks and spills • Litter and other inert construction waste	1	5	4	5	50 M		1	4	2	4	28 L
Destruction of riparian areas due to placement of infrastructure within this habitat which will result in habitat and biodiversity loss due to: • Site clearing ahead of construction • General construction activities and movement of construction vehicles • Unmanaged sewage discharge, leaks and spills • Solvent, paints and chemical spills • Litter and other inert construction waste. • Hydrocarbon and fuel leaks and spills This pertains to the placement of 2 sewage pump stations, 3 bird hides, 13 chalet units and a portion of the restaurant.	1	5	10	5	80 H		1	5	6	4	48 M
Disturbance and impacts on the riparian areas due to vegetation removal and the generation of dust and the placement of structures within this habitat. This could lead to: • Decreased visibility due to clouding of the water column; • Decreased light penetration; • Siltation of fine sediment substrates, gravel substrates and inter-substrate spaces; and	1	2	10	4	52 M		1	2	6	3	27 L

• The decrease in habitat availability. This pertains to the placement of 2 sewage pump stations, 3 bird hides, 13 chalet units and a portion of the restaurant.												
Destruction and damage to Conservation Important Species and protected trees. i.e. *Elaeodendron transvaalense* (NT), *Dalbergia melanoxylon* (NT), *Sclerocarya birrea, Combretum imberbe, Philenoptera violacea* and *Elaeodendron transvaalense, Aloe chabaudii, A. marlothii, A. spicata, A. parvibracteata* due to: • Site clearing ahead of construction • General construction activities and movement of construction vehicles	1	5	8	4	56 M		1	5	6	2	24 L	
Increase in exotic vegetation/alien species and bush encroachment into disturbed soils and areas due to: • Unmanaged cleared and disturbed areas, as well as, stockpiles • Unrehabilitated areas cleared and disturbed during construction • Construction vehicles operating on other sites and carrying material and seed onto site Bush encroachment is the process, which transforms grassy vegetation into a woody species-dominated one. This is recognised as a very serious problem throughout Sub-Saharan Africa, as it means that large areas of grazing lands are lost (or reduced in capacity), and it transforms habitats and reduces species diversity.	1	4	8	4	52 M		1	4	8	2	26 L	
Biodiversity (Fauna)												

Loss of habitat for conservation-important fauna which also acts as a wildlife migration corridors due to: • Site clearing ahead of construction • General construction activities and movement of construction vehicles • Construction dust • Construction material, litter and other inert construction waste	1	4	8	4	52 M	• Pre-construction planning as per the EMPr (section 8.1) • Biodiversity Management, specifically fauna as per the EMPr (section 8.3.9, 8.3.10, 8.3.11) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	1	4	4	3	27 L
Disturbance of populations of important fauna confirmed on site i.e. two CR birds (Hooded and White-backed Vultures) due to: • Site clearing ahead of construction • General construction activities and movement of construction vehicles • Construction dust • Construction material, litter and other inert construction waste It should be noted that no nests were recorded on site.	1	2	8	3	33 M		1	2	6	2	18 L

Disturbance of fauna along the Crocodile River within KNP due to noise from workers and construction vehicles.	1	1	8	4	40 M		1	1	6	3	24 L
Mortality of fauna due to: • Dangerous trenches and excavations • Persecution and extermination • Solvent, paints and chemical spills (poisoning) • Construction material, litter and other inert construction waste (suffocation) • Collisions with construction vehicles	2	1	8	4	44 M		2	1	6	2	18 L
Increased illegal harvesting of plant and animal resources due to increased access to the site, influx of contract workers into the area	2	1	10	4	52 M		2	1	8	2	22 L
Poaching and snaring of fauna on site by construction staff.	2	1	10	4	52 M		2	1	6	3	27 L
Increased opportunity for smuggling of poached items out of the site and KNP due to regular presence of large construction vehicles.	2	1	10	3	39 M		2	1	6	3	27 L
Land Use & Agricultural Potential											
None.						•					
Heritage											

Possible discovery of new important artefacts (positive impact)	*1*	*1*	*6*	*2*	*16 L*	• Pre-construction planning as per the EMPr (section 8.1) • Heritage Management, specifically fauna as per the EMPr (section 8.4) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	*1*	*1*	*6*	*2*	*16 L*
Damage to and / or destruction of archaeological, paleontological or historical artefacts unearthed during construction due to: • Site clearing ahead of construction • General construction activities and movement of construction vehicles	1	5	6	2	24 L		1	5	2	1	8 N	
Visual												
Visual impact of construction, lighting and dust on sensitive visual receptors owing to the presence of construction equipment, camps and workers.	2	1	8	4	44 M	• Pre-construction planning as per the EMPr (section 8.1) • Socio-economic Management, specifically visual impact as per the EMPr (section 8.5.1) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	2	1	4	3	21 L
Visual impact of construction, lighting and dust on conservation areas within the region (KNP).	3	1	6	4	40 M		3	1	4	3	24 L	
Socio-economics												
Stimulation of the local economy, especially the local service delivery industry (i.e. accommodation, catering, cleaning, transport and security, etc.). (positive impact)	*3*	*1*	*4*	*2*	*16 L*	• Pre-construction planning as per the EMPr (section 8.1) • Socio-economic Management as per the EMPr (section 8.5) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	*3*	*1*	*4*	*3*	*24 L*
Creation of short-term employment and business opportunities and the opportunity for skills development and on-site training. (Positive impact). *Jobs and employment opportunities will be created, with a percentage being low and semi-skilled.*	*2*	*1*	*6*	*3*	*27 L*		*2*	*1*	*6*	*4*	*36 M*	
Noise, dust and safety impacts and disturbance to guests at Ngwenya Lodge and adjacent landowners due to general construction activities and movement of construction vehicles.	2	1	8	4	44 M		2	1	6	3	27 L	
An increase in construction workers and associated increase in social problems for the community, including:	3	1	4	3	24 L		3	1	4	2	16 L	

• An increase in alcohol and drug use; • An increase in crime levels; • An increase in teenage and unwanted pregnancies; • An increase in prostitution; • An increase in sexually transmitted diseases (STDs). • An increase in vandalism.											
Increase in casual workers and associated increase in poaching.	1	1	8	4	40 M		1	1	6	3	24 L
Increased risk of veld fires due to the presence of construction workers on site.	2	1	10	4	52 M		2	1	4	3	21 L
Services & traffic											
Increase in traffic on the surrounding local roads due to construction vehicles.	2	1	6	4	36 M	• Pre-construction planning as per the EMPr (section 8.1) • Socio-economic Management specifically services and traffic as per the EMPr (section 8.5.4) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr)	2	1	4	3	21 L
Increase in the number and frequency of construction vehicles accessing the site and the resultant noise, dust, and safety impacts on other road users, residents of the local community and adjacent landowners.	2	1	6	4	36 M		2	1	4	3	21 L
Indirect Impacts											
Biodiversity (Flora)											
Loss of floral biodiversity, Conservation Important Species and protected trees due to increased incidence of veld fires	3	4	8	3	45 M	• As above	3	4	4	2	22 L
Biodiversity (Fauna)											
Loss of faunal biodiversity due to increased incidence of veld fires	3	1	8	3	36 M	• As above	3	1	6	2	20 L
Socio-economics											
Loss of property and threat to human life due to increased incidence of veld fires	3	1	6	3	30 L	• As above	3	1	4	2	16 L
Traffic and services											
Degradation of local roads due to the increase in the	2	1	6	4	36	• As above	2	1	4	3	21

numbers of heavy vehicles.					M						L
Cumulative Impacts											
Biodiversity (Flora)											
Cumulative loss of ecological function of sensitive habitats i.e. riparian forest.	3	4	8	4	60 H	• Pre-construction planning as per the EMPr (section 8.1) • Biodiversity Management, specifically flora as per the EMPr (section 8.3.5, 8.3.6, 8.3.7, 8.3.8) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	3	4	6	3	39 M
Cumulative reduction of Conservation Important Species and protected trees. i.e. *Elaeodendron transvaalense* (NT), *Dalbergia melanoxylon* (NT), *Sclerocarya birrea, Combretum imberbe, Philenoptera violacea* and *Elaeodendron transvaalense, Aloe chabaudii, A. marlothii, A. spicata, A. parvibracteata.* This will result in the overall loss of these species.	3	5	8	4	64 H		3	5	4	2	24 L
Biodiversity (Fauna)											
Cumulative loss of faunal habitat.	2	4	8	3	42 M	• Pre-construction planning as per the EMPr (section 8.1) • Biodiversity Management, specifically fauna as per the EMPr (section 8.3.9, 8.3.10, 8.3.11) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	2	4	6	2	24 L
Socio-economics											
Community upliftment and the opportunity to up-grade and improve skills levels in the area. (positive impact)	*3*	*1*	*2*	*2*	*12 N*	• Pre-construction planning as per the EMPr (section 8.1) • Socio-economic Management as per the EMPr (section 8.5) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	*3*	*1*	*4*	*3*	*24 L*
Services & traffic											
Cumulative increase in traffic and the resultant noise, dust, and safety impacts on other road users, residents of the local community and adjacent landowners.	3	1	6	4	40 M	• Pre-construction planning as per the EMPr (section 8.1) • Socio-economic Management specifically services and traffic as per the EMPr (section 8.5.4)	3	1	4	2	16 L

						• Waste management plan and storm water management plan (Section 10 and 11 of the EMPr)					

Potential impacts:	Extent (1-5)	Duration (1-5)	Magnitude (0-10)	Probability (1-5)	Significance	Proposed mitigation:	Extent (1-5)	Duration (1-5)	Magnitude (0-10)	Probability (1-5)	Significance
ALTERNATIVE A2 (LAYOUT ALTERNATIVE) - CONSTRUCTION PHASE											
Direct Impacts											
Ground water											
As per Alternative 1: Preferred Alternative						• Pre-construction planning as per the EMPr (section 8.1) • Hydrology, including groundwater as per the EMPr (section 8.2). • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr)					
Hydrology (surface water)											
Disturbance and loss of ecological function of the habitat (physical structure) of the Crocodile river and along the drainage lines due to: • Clearing and destruction of riparian and wetland vegetation • Loss of fringing vegetation and erosion of denuded areas • Invasion by alien invasive trees and plants • Alteration in natural fire regimes	1	1	10	5	60 H	• Pre-construction planning as per the EMPr (section 8.1) • Hydrology, including surface water as per the EMPr (section 8.2). • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr)	1	1	6	4	32 M

• Shading of natural vegetation • Destabilization of banks This pertains to the placement of 3 bird hides, 18 chalet units and 3 sewage pump stations being placed within the 32 m buffer and the riparian vegetation.											
Disturbance and loss of hydrological function (quality and fluctuation properties) along the Crocodile River and drainage lines due to: • Destruction of riparian habitat • Alteration of surface characteristics (roughness) due to activity within the water course (uncontrolled access by workers) • Removal of stabilising vegetation (uncontrolled clearing and access by workers) • Sedimentation and siltation from erosion This pertains to the placement of 3 bird hides, 18 chalet units and 3 sewage pump stations being placed within the 32 m buffer and the riparian vegetation.	1	1	10	5	60 H		1	1	6	4	32 M
Pollution and contamination of the Crocodile river and drainage lines due to: • Unmanaged runoff of grey water, cement slurry and wash water. • Unmanaged sewage discharge, leaks and spills • Solvent, paints and chemical spills • Litter and other inert construction waste. • Hydrocarbon and fuel leaks and spills	3	1	10	4	56 M		3	1	6	3	30 L
Soil											
• As per Alternative 1: Preferred Alternative						• Pre-construction planning as per the EMPr (section					

						8.1) • Biodiversity Management, specifically soil contamination and erosion as per the EMPr (section 8.3.1 and 8.3.2) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr)					
Air												
As per Alternative 1: Preferred Alternative						• Pre-construction planning as per the EMPr (section 8.1) • Biodiversity Management, specifically air quality as per the EMPr (section 8.3.4) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Biodiversity (Flora)												
Removal of invader alien species (positive impact). *A large seed base of invasive alien species is already present.*	*1*	*1*	*6*	*3*	*24 L*	• Pre-construction planning as per the EMPr (section 8.1) • Biodiversity Management, specifically flora as per the EMPr (section 8.3.5, 8.3.6, 8.3.7, 8.3.8) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	*1*	*1*	*8*	*5*	*50 M*
Loss of ecological support areas: protected area buffer and areas classified as Heavily modified/ other natural areas due to: • Site clearing ahead of construction • General construction activities and movement of construction vehicles	1	5	4	5	50 M		1	4	2	4	28 L
Loss of Delagoa Lowveld vegetation classified as Least Threatened and associated loss of species richness due to: • Site clearing ahead of construction • General construction activities and movement of construction vehicles	1	5	4	5	50 M		1	4	2	4	28 L

• Unmanaged sewage discharge, leaks and spills • Solvent, paints and chemical spills • Hydrocarbon and fuel leaks and spills • Litter and other inert construction waste												
Destruction of riparian areas due to placement of infrastructure within this habitat which will result in habitat and biodiversity loss due to: • Site clearing ahead of construction • General construction activities and movement of construction vehicles • Unmanaged sewage discharge, leaks and spills • Solvent, paints and chemical spills • Litter and other inert construction waste. • Hydrocarbon and fuel leaks and spills This pertains to the placement of 2 sewage pump stations, 3 bird hides and 18 chalet units.	1	5	10	5	80 H		1	5	6	4	48 M	
Disturbance and impacts on the riparian areas due to vegetation removal and the generation of dust and the placement of structures within this habitat. This could lead to: • Decreased visibility due to clouding of the water column; • Decreased light penetration; • Siltation of fine sediment substrates, gravel substrates and inter-substrate spaces; and • The decrease in habitat availability. This pertains to the placement of 2 sewage pump stations, 3 bird hides and 18 chalet units.	1	2	10	4	52 M		1	2	6	3	27 L	
Destruction and damage to Conservation Important Species and protected trees. i.e. *Elaeodendron transvaalense* (NT)*, Dalbergia melanoxylon* (NT),	1	5	8	4	56 M		1	5	6	2	24 L	

Sclerocarya birrea, Combretum imberbe, Philenoptera violacea and *Elaeodendron transvaalense, Aloe chabaudii, A. marlothii, A. spicata, A. parvibracteata* due to: • Site clearing ahead of construction • General construction activities and movement of construction vehicles											
Increase in exotic vegetation/alien species and bush encroachment into disturbed soils and areas due to: • Unmanaged cleared and disturbed areas, as well as, stockpiles • Unrehabilitated areas cleared and disturbed during construction • Construction vehicles operating on other sites and carrying material and seed onto site Bush encroachment is the process, which transforms grassy vegetation into a woody species-dominated one. This is recognised as a very serious problem throughout Sub-Saharan Africa, as it means that large areas of grazing lands are lost (or reduced in capacity), and it transforms habitats and reduces species diversity.	1	4	8	4	52 M		1	4	8	2	26 L
Biodiversity (Fauna)											
As per Alternative 1:Preferred Alternative						• Pre-construction planning as per the EMPr (section 8.1) • Biodiversity Management, specifically fauna as per the EMPr (section 8.3.9, 8.3.10, 8.3.11) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					

Land Use & Agricultural Potential												
None.						•						
Heritage												
As per Alternative 1:Preferred Alternative						• Pre-construction planning as per the EMPr (section 8.1) • Heritage Management, specifically fauna as per the EMPr (section 8.4) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)						
Visual												
As per Alternative 1:Preferred Alternative						• Pre-construction planning as per the EMPr (section 8.1) • Socio-economic Management, specifically visual impact as per the EMPr (section 8.5.1) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)						
Socio-economics												
As per Alternative 1:Preferred Alternative						• Pre-construction planning as per the EMPr (section 8.1) • Socio-economic Management as per the EMPr (section 8.5) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)						
Services & traffic												
As per Alternative 1:Preferred Alternative						• Pre-construction planning as per the EMPr (section 8.1) • Socio-economic Management specifically services and traffic as per the EMPr (section 8.5.4) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr)						
Indirect Impacts												

Biodiversity (Flora)												
As per Alternative 1:Preferred Alternative						• As above						
Biodiversity (Fauna)												
As per Alternative 1:Preferred Alternative						• As above						
Socio-economics												
As per Alternative 1:Preferred Alternative						• As above						
Traffic and services												
As per Alternative 1:Preferred Alternative						• As above						
Cumulative Impacts												
Biodiversity (Flora)												
As per Alternative 1:Preferred Alternative						• Pre-construction planning as per the EMPr (section 8.1) • Biodiversity Management, specifically flora as per the EMPr (section 8.3.5, 8.3.6, 8.3.7, 8.3.8) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)						
Biodiversity (Fauna)												
As per Alternative 1:Preferred Alternative						• Pre-construction planning as per the EMPr (section 8.1) • Biodiversity Management, specifically fauna as per the EMPr (section 8.3.9, 8.3.10, 8.3.11) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)						
Socio-economics												
As per Alternative 1:Preferred Alternative						• Pre-construction planning as per the EMPr (section 8.1) • Socio-economic Management as per the EMPr (section 8.5) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)						
Services & traffic												

As per Alternative 1:Preferred Alternative						• Pre-construction planning as per the EMPr (section 8.1) • Socio-economic Management specifically services and traffic as per the EMPr (section 8.5.4) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr)						

NO-PROJECT ALTERNATIVE												
Direct Impacts												
None						•						
Indirect Impacts												
None.						•						
Cumulative Impacts												
None.						•						

2.3 Impacts that may result from the Operational Phase

Operational phase impacts refer to those impacts that may be mitigated through effective and efficient operating procedures.

Potential impacts:	Extent (1-5)	Duration (1-5)	Magnitude (0-10)	Probability (1-5)	Significance	Proposed mitigation:	Extent (1-5)	Duration (1-5)	Magnitude (0-10)	Probability (1-5)	Significance
ALTERNATIVE A1 (PREFERRED ALTERNATIVE) – OPERATIONAL PHASE											
Direct Impacts											
Ground water											
Depletion of ground water resources due to over use	3	4	6	3	39	• Hydrology as per the EMPr (section 9.1)	3	4	4	2	22

and waste during operation.					M	• Waste management plan and storm water management plan (Section 10 and 11 of the EMPr)					L
Pollution and contamination of ground water due to: • Unmanaged storm water runoff • Unmanaged sewage discharge • Sewage leaks and spills • Herbicides, pesticides and fertilisers • Discharge and spill of solvents, paints, chemicals and cleaning products • Discharge and spill of hydrocarbons and fuel	3	4	8	3	45 M		3	4	4	2	22 L
Hydrology (surface water)											
Disturbance and loss of ecological function of the habitat (physical structure) along the Crocodile river and drainage lines due to: • Encroachment of alien invasive species • Uncontrolled vegetation clearing and access by staff and visitors	1	4	8	3	39 M	• Hydrology as per the EMPr (section 9.1) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	1	4	4	2	18 L
Pollution and contamination of surface water due to: • Unmanaged storm water runoff • Litter and uncontrolled waste • Sewage leaks and spills • Herbicides, pesticides and fertilisers • Discharge and spill of solvents, paints, chemicals and cleaning products • Discharge and spill of hydrocarbons and fuel	2	4	10	3	48 M		2	4	4	2	20 L
Disturbance and loss of hydrological function (quality and fluctuation properties) along the Crocodile River and drainage lines due to: • Uncontrolled discharges into the water resource (storm water) • Alteration of surface characteristics (roughness)	1	4	8	3	39 M		1	4	4	2	18 L

due to activity within the water course (uncontrolled access by staff and visitors) • Removal of stabilising vegetation (uncontrolled clearing and access by staff and visitors) • Sedimentation and siltation from erosion											
Soil											
Soil contamination and pollution due to: • Unmanaged storm water runoff • Litter and uncontrolled waste • Sewage leaks and spills • Herbicides, pesticides and fertilisers • Discharge and spill of solvents, paints, chemicals and cleaning products • Discharge and spill of hydrocarbons and fuel	1	4	6	3	33 M	• Biodiversity management, specifically soil as per the EMPr (section 9.2.1 and 9.2.2) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	1	4	4	2	18 L
Soil erosion due to: • Soil compaction by uncontrolled movement of staff and visitors (especially vehicles) • Runoff over exposed or cleared areas that have failed to rehabilitate.	1	4	8	3	39 M		1	4	4	2	18 L
Air											
Air pollution by emissions from increased numbers of private vehicles.	3	4	4	3	33 M	• Biodiversity management, specifically air quality as per the EMPr (section 9.2.3) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	3	4	4	3	33 M
Biodiversity (Flora)											
Disturbance of riparian areas due to: • Uncontrolled vegetation clearing and access by staff and visitors • Encroachment of alien invasive species • Litter and waste	1	4	8	3	39 M	• Biodiversity management, specifically flora as per the EMPr (section 9.2.4, 9.2.5 and 9.2.6) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	1	4	4	2	18 L

Destruction and damage to Conservation Important Species and protected trees. i.e. *Elaeodendron transvaalense* (NT), *Dalbergia melanoxylon* (NT), *Sclerocarya birrea, Combretum imberbe, Phylenoptera violacea* and *Elaeodendron transvaalense, Aloe chabaudii, A. marlothii, A. spicata, A. parvibracteata* due to uncontrolled vegetation clearing and access by staff and visitors.	1	5	8	3	42 M		1	5	4	2	20 L
Increase in exotic vegetation/alien species and bush encroachment into disturbed soils and areas in the event that the rehabilitation process is not successful. Colonisation and re-emergence of exotic vegetation / alien species and bush encroachment into disturbed soils and poorly rehabilitated areas. Alien invasive species tend to out-compete indigenous, slower growing species and could also result in unsuccessful rehabilitation.	1	4	8	3	39 M		1	4	6	2	22 L
Biodiversity (Fauna)											
Loss of faunal habitat due to: • Uncontrolled vegetation and bush clearing and access by staff • Encroachment of alien invasive species • Litter and waste	1	4	6	3	33 M	• Biodiversity management, specifically flora as per the EMPr (section 9.2.7, 9.2.8 and 9.2.9, 9.2.10) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	1	4	4	2	18 L
Faunal disturbances especially along the Crocodile river in KNP, displacement of taxa and changes in distribution and abundance due to: • Uncontrolled vegetation and bush clearing and access by staff and visitors • General operations (activities) of the facility • Noise from staff and vehicles • Perimeter safety fences	1	4	6	4	44 M		1	4	4	3	27 L

Mortality of fauna due to: • Persecution and extermination • Solvents, paints, chemicals and cleaning products (poisoning) • Litter and waste (suffocation)	2	4	6	4	48 M		2	4	4	2	20 L
Poaching and snaring of faunal species by staff.	2	4	8	3	42 M		2	4	6	2	24 L
Land Use & Agricultural Potential											
None.						•					
Visual											
Potential visual impact on sensitive visual receptors in close proximity to the proposed development.	1	4	8	3	39 M	• Socio-economic management, specifically visual impact as per the EMPr (section 9.3.1) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	1	4	4	2	18 L
Potential visual impact on sensitive visual receptors within the region	2	4	4	3	30 L		2	4	2	2	16 L
Potential visual impact on protected and conservation areas (i.e. Kruger National Park) within the study area.	2	4	6	3	36 M		2	4	4	2	20 L
The potential visual impact of safety and security lighting of the developments at night on sensitive visual receptors in close proximity i.e. KNP	2	4	8	3	42 M		2	4	4	2	20 L
Socio-economics											
Stimulation of the local economy, especially the local service delivery industry (accommodation, catering, cleaning, transport, security etc.). (positive impact)	*3*	*4*	*4*	*2*	*22 L*	• Socio-economic management as per the EMPr (section 9.3) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	*3*	*4*	*4*	*3*	*33 M*
Creation of long term employment and business opportunities as well as opportunities for skills development and transfer (positive impact)	*2*	*4*	*4*	*4*	*40 M*		*2*	*4*	*6*	*4*	*48 M*
Creation of opportunities for local SMME's (positive impact)	*2*	*4*	*6*	*3*	*36 M*		*2*	*4*	*6*	*4*	*48 M*
The potential visual impact of safety and security lighting of the developments at night on sensitive visual receptors in close proximity i.e. KNP	2	4	2	3	24 L		2	4	2	1	8 N

Service and traffic											
Increase in traffic on the surrounding roads.	2	4	6	4	48 M	• Socio-economic management as per the EMPr (section 9.3) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	2	4	4	3	30 L
Increase in the number and frequency of vehicles accessing the site, and the resultant noise, dust, and safety impacts on other road users, residents of the local community and adjacent landowners.	2	4	6	4	48 M		2	4	4	3	30 L
Indirect Impacts											
Visual											
The potential visual impact of the development on the visual character of the landscape and sense of place of the region (particularly the KPGR)	3	4	6	3	39 M	• Socio-economic management, specifically visual impact as per the EMPr (section 9.3.1) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	3	4	2	2	18 L
Cumulative Impacts											
Biodiversity (Flora)											
Cumulative disturbance of sensitive habitats.	3	4	6	3	39 M	• Biodiversity management, specifically flora as per the EMPr (section 9.2.4, 9.2.5 and 9.2.6) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	3	4	4	2	22 L
Cumulative reduction and damage to Conservation Important Species and protected trees. i.e. *Elaeodendron transvaalense* (NT), *Dalbergia melanoxylon* (NT), *Sclerocarya birrea, Combretum imberbe, Philenoptera violacea* and *Elaeodendron transvaalense, Aloe chabaudii, A. marlothii, A. spicata, A. parvibracteata*	3	5	8	3	48 M		3	5	4	2	24 L
Visual											
The accumulation of built forms within an otherwise natural environment.	3	4	6	4	52 M	• Socio-economic management, specifically visual impact as per the EMPr (section 9.3.1) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	3	4	4	2	22 L
Socio-economics											
Creation of permanent employment and skills and development opportunities for members from the	*3*	*4*	*2*	*2*	*18 L*	• Socio-economic management as per the EMPr	*3*	*4*	*4*	*3*	*33 M*

local community and creation of additional business and economic opportunities in the area (positive impact)						(section 9.3) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Promotion of social and economic development in the local communities and improvement in the overall wellbeing of the community (positive impact)	*3*	*4*	*2*	*2*	*18 L*		*3*	*4*	*2*	*3*	*27 L*
Services and traffic											
Cumulative increase in traffic on the surrounding roads due to increased visitor numbers.	3	4	6	3	39 M	• Socio-economic management as per the EMPr (section 9.3) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)	3	4	2	2	18 L
Cumulative increase in the number and frequency of vehicles accessing the site, and the resultant noise, dust, and safety impacts for other road users, adjacent landowners and residents of the local communities.	3	4	4	3	33 M		3	4	4	2	22 L
Waste disposal practices will have an accumulative effect on the local landfill site's capacity to absorb waste.	3	4	6	4	52 M		3	4	4	2	22 L

Potential impacts:	Extent (1-5)	Duration (1-5)	Magnitude (0-10)	Probability (1-5)	Significance	Proposed mitigation:	Extent (1-5)	Duration (1-5)	Magnitude (0-10)	Probability (1-5)	Significance
ALTERNATIVE A2 (LAYOUT ALTERNATIVE) – OPERATIONAL PHASE											
Direct Impacts											
Ground water											
As per Alternative 1: Preferred Alternative						• Hydrology as per the EMPr (section 9.1) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr)					
Hydrology (surface water)											

As per Alternative 1: Preferred Alternative						• Hydrology as per the EMPr (section 9.1) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Soil											
As per Alternative 1: Preferred Alternative						• Biodiversity management, specifically soil as per the EMPr (section 9.2.1 and 9.2.2) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Air											
As per Alternative 1: Preferred Alternative						• Biodiversity management, specifically air quality as per the EMPr (section 9.2.3) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Biodiversity (Flora)											
As per Alternative 1: Preferred Alternative						• Biodiversity management, specifically flora as per the EMPr (section 9.2.4, 9.2.5 and 9.2.6) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Biodiversity (Fauna)											
As per Alternative 1: Preferred Alternative						• Biodiversity management, specifically flora as per the EMPr (section 9.2.7, 9.2.8 and 9.2.9, 9.2.10) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Land Use & Agricultural Potential											
None.						•					
Visual											
As per Alternative 1: Preferred Alternative						• Socio-economic management, specifically visual impact as per the EMPr (section 9.3.1) • Waste management plan and storm water					

						management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Socio-economics											
As per Alternative 1: Preferred Alternative						• Socio-economic management as per the EMPr (section 9.3) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Service and traffic											
As per Alternative 1: Preferred Alternative						• Socio-economic management as per the EMPr (section 9.3) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Indirect Impacts											
Visual											
As per Alternative 1: Preferred Alternative						• Socio-economic management, specifically visual impact as per the EMPr (section 9.3.1) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Cumulative Impacts											
Biodiversity (Flora)											
As per Alternative 1: Preferred Alternative						• Biodiversity management, specifically flora as per the EMPr (section 9.2.4, 9.2.5 and 9.2.6) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Visual											
As per Alternative 1: Preferred Alternative						• Socio-economic management, specifically visual impact as per the EMPr (section 9.3.1) • Waste management plan and storm water					

						management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Socio-economics											
As per Alternative 1: Preferred Alternative						• Socio-economic management as per the EMPr (section 9.3) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					
Services and traffic											
As per Alternative 1: Preferred Alternative						• Socio-economic management as per the EMPr (section 9.3) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)					

NO-PROJECT ALTERNATIVE											
Direct Impacts											
No stimulation of the local economy, especially the local service delivery industry.	3	4	6	4	52 M	• None.	3	4	6	4	52 M
No short term and long-term employment through skills development and on-site training.	3	4	6	4	52 M	• None.	3	4	6	4	52 M
Indirect Impacts											
None.						•					
Cumulative Impacts											
No opportunity to up-grade and improve skill levels in the area.	3	4	6	4	52 M	• None.	3	4	6	4	52 M

2.4 Decommissioning Phase

The decommissioning of the facility is not anticipated at this stage and, therefore, no impacts are assessed.