

Table 1 Impact management statement and objectives

Aspect	Statement		Phase
	Potential impacts and risks	Impact management statement and objectives	
Geographical	Impact on <i>Protected Areas; Critical Biodiversity Areas; Ecological Support Areas</i>	Minimize the potential impacts on these areas	
	The activity sites will encroach in these sensitive geographical biodiversity areas. Indiscriminate site selection and preparation will destroy and fragment habitats and will compromise the state of these areas and ecological functions.	The least sensitive site footprint must be identified by specialist input during the design phase (this has been done).	Planning
	Unmonitored construction activities will lead to loss of vegetation and fragmentation of habitat.	The construction phase must be monitored in order to ensure that no unnecessary vegetation clearing and excavations are done. Complete rehabilitation of disturbed surfaces must be performed.	Construction Rehabilitation
Topography & geology	Impacts related to topographic and geological conditions	Identify topographic and geological features and plan accordingly	
	The physical conditions of development area will be modified by development activities which will have indirect negative consequences (e.g. loss of vegetation and habitat, erosion, stream flow reduction, etc.).	The least sensitive site footprints must be identified by specialist input during the design phase (this has been done).	Planning
	Construction on unstable soil and steep slopes will result in erosion (loss of soil) and siltation of the streams.	Site footprints must be identified that have the least potential of having negative consequences (this has been done).	Planning
Biodiversity & ecology	Loss of biota and fragmentation of habitat	Minimize the loss of biota and fragmentation of habitat	
	Uneducated site selection will lead to the loss of biota and fragmentation of habitat.	The least sensitive site footprints must be identified by specialist input during the design phase (this has been done).	Planning
	Site preparation and vegetation removal will result in a loss of vegetation and fauna and will degrade the natural character of the site.	Site preparation, including vegetation removal must be kept to the necessary minimum to ensure that the natural character of the site is retained. Management principles must formulated along the following measures:	Construction
	Invasive vegetation	Management of alien and invasive vegetation	
	Invasive and alien vegetation and weeds will establish on disturbed areas and eventually encroach into the natural habitats.	Prevent unnecessary disturbance to the natural environment.	Construction
		Control the presence and spreading of alien and invasive vegetation.	Rehabilitation Operational
	Loss of important biota	Prevent the loss of important biota	
	Important biota may be lost during site preparation.	The site footprint must be investigated by a specialist prior to construction in order to identify and to relocate important biota and to recommend on vegetation that must remain on site.	Pre-construction
Impact on sensitive ecosystems and watercourses (including wetlands)	Minimize the negative impact the <i>Critical Biodiversity Area</i> and on sensitive habitats		
The activity sites will encroach into sensitive terrestrial and freshwater ecosystems. Indiscriminate site selection and preparation will destroy and fragment habitats and will compromise the state of these areas and ecological functions.	The least sensitive site footprint must be identified by specialist input during the design phase (this has been done). Mitigation will be necessary to reduce the magnitude of potential impacts on these ecosystems.	Planning	
Soil and water resources	Fragmentation of riparian and wetland habitats and loss of vegetation	Prevent and minimize the fragmentation of habitats and loss of vegetation	
	Watercourse crossing sites encroach into riparian and wetland zones and will fragment these sensitive ecosystems.	The least sensitive site footprint must be identified by specialist input during the design phase (this has been done).	Planning
	Construction activities will result in loss of vegetation and will compromise ecological functions of the wetlands.	Mitigation will be necessary to reduce the magnitude of potential impacts on these ecosystems.	Construction
	Pollution of soil, water quality and loss of these resources	Soil and water resources must be responsibly used and pollution and loss thereof must be prevented	
	Construction activities (e.g. vegetation clearing, disturbance of topsoil) and poor construction site management will result in loss of soil and pollution of soil and water resources.	Site preparation, disturbance to topsoil and excavations must kept to the minimum. Topsoil that is removed must be stockpiled for use in rehabilitation or landscaping. Erosion of soil must be prevented and the occurrence thereof must be rectified.	Construction
Use of natural surface water will put strain on this resource.	Surface water may not be used for construction or domestic purposes.	Construction	

	Spillages of cement, concrete, lubricants, fuel, chemicals and other hazardous substances during construction will result in pollution of soil and water resources.	Efficient water use and waste management must be a priority. Chemicals, lubricants and fuel must be stored in a safe environment and must be handled and applied as per the manufacturer's instructions. Vehicles and machinery must be refueled and serviced in a designated area with a lined surface and fluid traps if applicable.	Construction
Atmosphere and sound	Air and noise pollution	Prevent air and noise pollution	
	Dust and noise will be generated during the construction phase.	The generation of noise, dust and vibrations must be monitored and actions must be taken to mitigate if it is determined that it is excessive.	Construction
	Burning of waste during construction and operational phases will pollute the atmosphere.	Waste may not be disposed of by means of burning during any phase.	Construction
Visual	Visual impact	All phases must be managed in such a way so as to not create negative visual impacts	
	It is not expected that the completed infrastructure will result in a visual intrusion.	No mitigation necessary.	Planning
	During construction phase poor site management and waste disposal will result in untidy and littered sites that will be an eyesore to the general public.	The construction sites and stockpiles must be kept tidy and litter free.	Construction
	Inadequate maintenance of buildings and infrastructure will create an unacceptable visual feature for tourists and passers-by.	The infrastructure must be well maintained in order to create a good image and does not stand out in the natural setting.	Operational
Heritage Resources	Loss of palaeontological features , heritage sites and items	Loss of heritage and archeological sites & items must be prevented.	
	Construction activities may result in the loss of heritage sites and cultural activities. Construction activities may result in the loss of palaeontological features.	No high potential palaeontological features, heritage sites or cultural activities have been identified by the specialist investigations. Any "chance" finds or potential sites will be investigated by a specialist.	Construction
Social & legal	Negative social & legal consequences	Avoid negative social impacts and comply with legal requirements	
	Contractors and personnel that are not familiar with the legal requirements of the authorization may result in non-compliance. Personnel that are not trained properly or are poorly disciplined may lead to negative environmental and social impacts.	Personnel must be initiated on the legal requirements and conditions of the environmental authorization prior to commencement of construction. Contractors and personnel must be managed in an orderly fashion in order to avoid disturbing the local residents.	Pre-construction
	Untrained and undisciplined personnel will result in injury and negative interaction.	Personnel must be trained and disciplined	Construction
Economic Development	Increased employment and business opportunity	Employment of local people and support of local businesses must be encouraged	
	Employment opportunities will be created for the local population and local businesses will benefit if building materials and consumables are sourced locally.	The applicant and contractors must support local labour and businesses whenever possible.	Construction
Rehabilitation	Inadequate rehabilitation will have negative environmental consequences	Rehabilitation must be monitored and be completed and aftercare must be followed up	
	Insufficient funds for rehabilitation will result in negative consequences.	Adequate funds must be available for rehabilitation.	Planning
	Inadequate rehabilitation of disturbed areas will result in soil erosion and the establishment of invasive alien vegetation. Incomplete or no cleanup of spoil material, construction waste, spillages will lead to environmental pollution and negative visual impacts.	The ECO must have to oversee that rehabilitation is conducted according to the EMPr and any other conditions as included with the Environmental Authorization.	Rehabilitation
Maintenance	Lack of maintenance will result in negative environmental impacts	Maintenance of buildings and infrastructure must be conducted regularly	
	Lack of maintenance will result in a magnitude of environmental impacts, e.g. erosion, pollution, visual, loss of biota and fragmentation of habitat.	The buildings, roads and important infrastructure must be maintained in good visual and functional order.	Operational