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IMPACT AND RISK ASSESSMENT

Proposed Residential Development on Portion 91 of Farm Matjes Fontein 304, Keurboomstrand, Plettenberg Bay, Western Cape Province

Each potential environmental impact and risk identified was assessed according to specific criteria. These included the nature, extent, duration, consequence, probability and frequency of identified impacts, including the degree to which these impacts can be reversed, may cause irreplaceable loss of resources, and can be avoided, managed or mitigated. The criteria are based on the EIA Regulations, published by the Department of Forestry, Fisheries and the Environment (April 1998) in terms of the Environmental Conservation Act No. 73 of 1989. These criteria include:

Nature of the impact

This is an estimation of the type of effect the construction, operation and maintenance of a development would have on the affected environment. This description should include what is to be affected and how.

Extent of the impact

Describe whether the impact will be: local extending only as far as the development site area; or limited to the site and its immediate surroundings; or will have an impact on the region or will have an impact on a national scale or across international borders.

Duration of the impact

The specialist should indicate whether the lifespan of the impact would be short term (0-5 years), medium term (5-15 years), long term (16-30 years) or permanent.

Intensity

The specialist should establish whether the impact is destructive or benign and should be qualified as low, medium or high. The specialist study must attempt to quantify the magnitude of the impacts and outline the rationale used.

Probability of occurrence

The specialist should describe the probability of the impact actually occurring and should be described as improbable/unlikely (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of any prevention measures).

<u>Reversibility</u>

- Completely reversible the impact can be reversed with the implementation of minor mitigation measures.
- Partly reversible the impact is reversible but more intense mitigation measures are required
- Barely reversible the impact is unlikely to be reversed even with intense mitigation measures
- Irreversible the impact is irreversible, and no mitigation measures exist

Irreplaceable loss of resources

Describes the degree to which resources will be irreplaceably lost due to the proposed activity. It can be no loss of resources, marginal loss, significant loss or complete loss of resources.

Cumulative effect

An effect which in itself may not be significant but may become significant if added to other existing or potential impacts that may result from activities associated with the proposed development. The cumulative effect can be:

- Negligible the impact would result in negligible to no cumulative effect
- Low the impact would result in insignificant cumulative effects
- Medium the impact would result in minor cumulative effects
- High the impact would result in significant cumulative effects

Significance

Significance of impacts are determined through a synthesis of the assessment criteria and is described as -

- Low negative- where it would have negligible effects and would require little or no mitigation
- Low positive the impact will have minor positive effects
- Medium negative the impact will have moderate negative effects and will require moderate mitigation
- Medium positive the impact will have moderate positive effects
- High negative the impact will have significant effects and will require significant mitigation measures to achieve an accepted level of impact
- High positive the impact will have significant positive effects
- Very high negative the impact will have highly significant effects and are unlikely to be able to be mitigated adequately
- High positive the impact will have highly significant positive effects.



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Impacts foreseen during the Construction Phase for the Preferred Alternative (60 Residential stands):

Project Phase	Construction					
Impact	Clear	ance of vegetation for the const	ruction of the	dwelling and associated		
	infrastructure					
Description of	Loss of sensitive vegetation, habitat loss for terrestrial wildlife, mortalities to various					
impact	species unable to evade the disturbance, loss of viable propagules, fragmentation of					
AA:tiarable	Madium		nfrastructure	ificance of impacts		
Mitigable	Medium	Mitigation exists and will notable	•			
Potential mitigation	 Wherever there are sections of undisturbed natural habitat within the development area, they should not be impacted by the building activities and should be conserved as small islands of natural resources for the small wildlife of the area. the removal and translocation of protected plants if found should be undertaken prior to construction clearing activities. A permit is required prior to removal. Protected plants must either be moved to a safer, no-go area on the property or taken to a nursery for temporary storage until rehabilitation takes place. Access by heavy machinery should be limited on the site. Only areas necessary for the development footprint should be cleared and the remainder of the property should be left natural. Laydown areas for construction materials must be contained within the clearing footprint of the proposed development. 					
	 A 20-meter buffer zone must be retained along the base of the slope to protect the forest margin. 					
Assessment		Without mitigation		With mitigation		
Nature	Negative		Low negative			
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years		
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings		
Intensity	High	Natural and/ or social functions and/ or processes are significantly altered	Low	Natural and/or social functions and/or processes are somewhat altered		
Probability	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur	Probable	Has occurred here or elsewhere and could therefore occur		
Confidence	High Substantive supportive c exists to verify the assess		Medium	Determination is based on common sense and general knowledge		
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Medium	The affected environment will only recover from the impact with significant intervention		
Resource irreplaceability	High The resource is damaged Low The resource is not					
Significance		Minor - negative		egligible - negative		
Comment on		d area to the north of the dev		excluded from the proposed		
significance		nt and will not be directly affecte				
Cumulative impacts	The impact v	would result in insignificant cumu	lative effects			

PO Box 1252, Sedgefield, 6573

Project Phase	Construction					
Impact		Loss of secondary vegetation		ered ecosystem		
Description of	Loss of hab	Loss of habitat on site (within the proposed development footprint), modification of				
impact	ecological processes, spillover effects into surrounding areas due mostly to secondary					
	impacts such as boundary disturbance and alien invasive species spread.					
Mitigable	Medium	Mitigation exists and will notable				
Potential	Acce	ess to forested areas during co				
mitigation		struction personnel. These areas i				
	• Com	npile and implement an alien r	nanagement	plan, which highlights control		
	prior	ities and areas and provides a p	rogramme for	long-term control.		
	• Unde	ertake regular monitoring to det	ect alien inva	sions early so that they can be		
	cont	rolled, as per the Alien Manager	ment Plan.			
	• Reho	abilitation of disturbed areas, a	s well as pre	viously invaded areas, should		
		note establishment of site-appro				
Assessment	,	Without mitigation		With mitigation		
Nature	Negative	Willied Hilligation	Low negativ			
Duration	Permanent	Impact may be permanent,	Permanent	Impact may be permanent,		
Dordiion		or in excess of 20 years	1 childrich	or in excess of 20 years		
Extent	Limited	Limited to the site and its	Very	Limited to the site and its		
LXICIII		immediate surroundings	limited	immediate surroundings		
Intensity	Medium	Natural and/or social	Low	Natural and/or social		
	7710 010111	functions and/or processes		functions and/or processes		
		are notably altered		are somewhat altered		
Probability	Certain /	There are sound scientific	Certain /	There are sound scientific		
,	Definite	reasons to expect that the	Definite	reasons to expect that the		
		impact will definitely occur		impact will definitely occur		
Confidence	High	Substantive supportive data	High	Substantive supportive data		
		exists to verify the assessment		exists to verify the		
		·		assessment		
Reversibility	Low	The affected environment will	Medium	The affected environment		
		not be able to recover from		will only recover from the		
		the impact - permanently impact with significant				
		modified		intervention		
Resource	Low	The resource is not damaged	Low	The resource is not		
irreplaceability		irreparably or is not scarce		damaged irreparably or is		
				not scarce		
Significance		Minor - negative		egligible - negative		
Comment on	The vegetation type (Garden Route Shale Fynbos) is listed as Endangered. All upland					
significance	areas of the site on the steep slopes are covered with forest that matches the description					
	for Southern Afrotemperate Forest, which is not threatened, but is separately listed as protected under the National Forests Act. The forest areas on site fall within a CBA1. These forested areas are completely excluded from the proposed development (both options) and are not directly affected.					
	Th			and the least of the state of t		
		naining non-forest vegetation on				
		n the basis that no legal soil distu				
		s legally considered to be natura	-	_		
	•	It is, however, not representative is not considered to be irreplace	_	anon onli ana, being		
Cumulative		would result in insignificant cumu				
impacts		woold result in itsignificant come	MOTIVE CHECTS			
ппрасіз	l					

Project Phase	Construction					
Impact	Loss of individuals of protected tree species					
Description of	Loss of habitat on site (within the proposed development footprint), disturbance or loss of					
impact	protected trees.					
Mitigable	Medium	Mitigation exists and will notab	lv reduce siani	ificance of impacts		
Potential		n existing large trees within prop				
mitigation		trees need to be removed or p				
•		e National Forests Act.		5		
	Plant	additional milkwoods in the de	velopment as	part of the final landscapina.		
		e can be planted along with other	•			
		ortions and composition should				
		ally at this site.				
Assessment		Without mitigation		With mitigation		
Nature	Negative		Low negative	е		
Duration	Permanent	Impact may be permanent,	Long Term	Impact will last between 16		
		or in excess of 20 years		and 30 years		
Extent	Very	Limited to the site and its	Very	Limited to the site and its		
	limited	immediate surroundings	limited	immediate surroundings		
Intensity	Very high	Natural and/ or social	Low	Natural and/or social		
	functions and/or processes functions and/or processes					
		are majorly altered		are somewhat altered		
Probability	Probable	Has occurred here or	Rare /	Conceivable, but only in		
	elsewhere and could improbable extreme circumstances,					
		therefore occur and/or might occur for this				
		project although this has				
	rarely been known to result elsewhere					
Confidence	Medium	Determination is based on	Medium	Determination is based on		
Commutence	MCGIOTTI	common sense and general	Medioiii	common sense and general		
		knowledge		knowledge		
Reversibility	Partly	The impact is reversible but	Partly	The impact is reversible but		
Ke versioniny	reversible	more intense mitigation	reversible	more intense mitigation		
		measures are required		measures are required		
Resource	Low	The resource is not damaged	Low	The resource is not		
irreplaceability	irreparably or is not scarce damaged irreparably or is					
	not scarce					
Significance	Minor - negative Negligible - negative					
Comment on	The tree spec	cies affected is Sideroxylon inerm	e, protected (under the National Forests Act.		
significance		dividuals were seen on site, all of				
	is widespread but is a key and dominant component of coastal forests in the Garden					
	Route.					
Cumulative	The impact v	vould result in insignificant cumu	lative effects			
impacts						

Project Phase		Construction				
Impact		Loss of habitat for listed threatened animal species				
Description of	Loss of habite	at for threatened plant and animal species, spillover effects into surrounding				
impact	areas due m	ostly to secondary impacts such as dust deposition and alien invasive species				
	spread.	spread.				
Mitigable	Medium Mitigation exists and will notably reduce significance of impacts					
Potential mitigation	 Protect natural forest vegetation adjacent to the proposed development site. Rehabilitate and improve the small dam on site, including introducing pond 					
	good • Fores	margin vegetation typical of mountain ponds in forested areas. This will provide good habitat for various frogs, including potentially Afrixalus knysnae.				

must not be affected by the proposed development. A buffer zone should be retained along the base of the slope to protect the forest margin. For example, steps should be taken to rehabilitate these areas and encourage growth of species, such as *Pterocelastrus tricuspidatus* and *Sideroxylon inerme*, that are mesic and fire-resistant.

• An open space management system should be developed to formalize steps for forest protection.

Assessment		Without mitigation		With mitigation
Nature	Negative		Low negative	е
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings
Intensity	Very high	Natural and/ or social functions and/ or processes are majorly altered	Low	Natural and/or social functions and/or processes are somewhat altered
Probability	Probable	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge
Reversibility	Partly reversible	The impact is reversible but more intense mitigation measures are required	Partly reversible	The impact is reversible but more intense mitigation measures are required
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance		Minor - negative		egligible - negative
Comment on significance	 There is habitat on site that is suspected habitat for threatened plant and animal species. This is the forest habitat, which is outside the proposed development footprint and will not be affected by the proposed development. The species that could potentially occur within this habitat are as follows: Knysna Warbler (Vulnerable) has a moderate probability of occurring in forest margin areas. Crowned Eagle (Near Threatened) - the forests on site may constitute part of the general foraging range but it is unlikely that they are resident on site, or are dependent on it. Tunnelling Dung Beetle (Endangered). The type locality of the species is forest habitats in the Keurboomstrand area. Small antelope (Vulnerable). There is a moderate to high probability of it occurring in the forests on site. 			
Cumulative	The potentic	ıl impact affects a negligible pr		e overall habitat available for

Project Phase	Construction			
Impact	Earthworks and vegetation clearing for construction activities			
Description of	Sedimentation of the pond resulting in poor water quality. Destruction of vegetation			
impact	around the pond and spring.			
Mitigable	High Mitigation exists and will notably reduce significance of impacts			
Potential	Pre-construction erect temporary fencing along the entire green corridor and			
mitigation	open space to protect the pond as well as the corridor from impact during			
	construction.			

these species and will not directly affect any individuals.

impacts

	 Add signage to the fence indicating the area as No-Go. Site inductions for all staff must ensure contractors and works area aware they may 			
		nter the pond and spring area.	cormacióis ai	ia works area aware mey may
Assessment	Without mitigation With mitigation			With mitigation
Nature	Negative		Low negative	е
Duration	Short term	Impact will last between 1 and 2 years.	Brief	Impact will not last longer than 1 year.
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Possible	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge
Reversibility	Completely reversible	The impact can be reversed with the implementation of minor mitigation measures.	Completely reversible	The impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance		Minor - negative		egligible - negative
Comment on significance	While a natural spring and pond are present on the site, they are very small in extent and can be adequately protected from the development by implementing the 10m buffer during the construction and operational phases as indicated in this report. The presence of this feature is not sufficient to increase the sensitivity of the site to Very High, and it has been excluded from the development area. No stormwater should be put into this pond as the water is of high quality .			
Cumulative impacts		The impact would result in insignificant cumulative effects.		

Project Phase		Constr	uction	
Impact		Waste P	ollution	
Description of impact	Pollutio	n of buffer zones and natural are constructio	eas caused by waste generated by the on process.	
Mitigable	High	Mitigation exists and will consid	erably reduce significance of impacts	
Potential mitigation	man supp All compact No di place The li any Adecented	aged. Separation and recyclir orted. onstruction waste materials must e facility. umping of construction material e. ouffer and "no-go" areas must be waste that may have been blow quate sanitary facilities and abughout the project area. Use of the inding vegetation).	olutions must be provided for all personnel of these facilities must be enforced (these nat they are a desired alternative to the	
Assessment		Without mitigation With mitigation		
Nature	Negative	·	Low negative	

Duration Short term Impact will last between 1 Brief Impact	will not last longer					
and 5 years than 1 y	year					
Extent Very Limited to the site and its Very Limited	to the site and its					
limited immediate surroundings limited immedi	iate surroundings					
Intensity Low Natural and/or social Very low Natural	l and/or social					
functions and/or processes function	ns and/or processes					
are somewhat altered are sligit	htly altered					
Probability Likely The impact may occur Rare / Concein	ivable, but only in					
improbable extreme	e circumstances,					
	might occur for this					
: •	although this has					
· ·	peen known to result					
elsewhe						
	ntive supportive data					
· ·	verify the					
assessm						
, ,	ected environmental					
	able to recover from					
the impact the imp						
	ource is not					
irreplaceability irreparably or is not scarce damage not sca	ged irreparably or is					
	Negligible - negative Negligible - negative Construction activities are likely to generate significant quantities of solid waste that could					
	pollute buffer zones and natural areas. In addition, the high numbers of construction					
	workers present on site will generate a significant amount of human waste, which could					
pollute the environment.						
Cumulative The impact would result in insignificant cumulative effects.						
impacts						

Project Phase		Consti	ruction			
Impact	Construction Vehicles					
Description of	Po	ollution caused by the operation	of vehicles ar	nd heavy machinery.		
impact						
Mitigable	High	Mitigation exists and will consid	lerably reduce	e significance of impacts		
Potential	• Con	struction activities must be conf	fined to clear	ly demarcated areas so as to		
mitigation	prev	ent unnecessary disturbance the	e surrounding	environment.		
	• No v	ehicles are to park or operate w	ithin "no-go"	areas.		
	• Exco	avators and all other machinery o	and vehicles m	nust be checked for oil and fuel		
	leak	s daily. No machinery or vehicles	with leaks are	e permitted to work on site.		
		uel storage, refuelling, vehicle m	aintenance o	r vehicle depots to be allowed		
		natural spring and dam.				
		elling and fuel storage areas, ar				
		vehicles and machinery, must be located on impervious bases and should have				
		ds around them (sized to contair				
		possible spills. These areas must not be located within any natural drainage areas				
		eferential flow paths and must b				
		contractors used for the project		•		
	any	any fuel or oil spills are clean-up and discarded correctly.				
Assessment		Without mitigation		With mitigation		
Nature	Negative Low negative			e		
Duration	Short term	Impact will last between 1	Brief	Impact will not last longer		
		and 5 years		than 1 year		
Extent	Very	Limited to the site and its	Very	Limited to the site and its		
	limited	immediate surroundings	limited	immediate surroundings		

Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/or social functions and/or processes are slightly altered	
Probability	Likely	The impact may occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment	
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact	
Resource	Low	The resource is not damaged	Low	The resource is not	
irreplaceability		irreparably or is not scarce		damaged irreparably or is not scarce	
Significance	Negligible - negative Negligible - negative				
Comment on significance	Operation of vehicles could result in spillages or leaks of hydrocarbons (fuel and oil) and could lead to unnecessary disturbance of natural areas.				
Cumulative impacts	The impact would result in insignificant cumulative effects.				

Project Phase	Construction							
Impact		Disturbance / removal of topsoil						
Description of	Disturbance of topsoil, potential soil erosion and the loss of topsoil							
impact								
Mitigable		High Mitigation exists and will considerably reduce the significance of impacts						
Potential mitigation	 Areas that are disturbed through building activities (such as the excavations for pipelines) should be suitably rehabilitated without delay. Failure to do so will have a knock-on effect on biodiversity in the form of an increase in wind erosion, soil exposure and a loss of the soil micro-organisms that are essential for plant growth. Organic matter, such as roots and humus/topsoil should be removed from the footprint of structures and stockpiled separately for landscaping purposes. The stockpiling of topsoil for use in rehabilitation is required. Stockpiles must not exceed 1.5m in height, must be covered with shade cloth or similar, to prevent erosion and any invasive alien species that begin to grow within it must be removed. Soil disturbance during the removal of alien invasive plants must be minimised as much as possible. The site must be stabilised where necessary using available materials, where possible. It is recommended that exposed soils are covered with wood chips, and tree branches used to create berms. Any cut alien vegetation on site can be 							
Assessment		Without mitigation	W	ith mitigation				
Nature	Negative		Low Negative	-				
Duration	Short term	Impact will last between 1 and 5 years	Brief	Impact will not last longer than 1 year				
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to specific isolated parts of the site				
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/ or social functions and/ or processes are slightly altered				

Probability	Almost certain	It is most likely that the impact will occur	Likely	The impact may occur		
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment		
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	High	The affected environmental will be able to recover from the impact		
Resource irreplaceabilit y	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce		
Significance		Negligible - negative	Mino	or - negative		
Comment on significance	Clearing areas of the site in preparation for construction will expose bare soil which may lead to the potential loss of topsoil through runoff and incorrect storage. This is not envisaged to be a significant impact with mitigation measures in place. Topsoil can be reused on site for rehabilitation purposes.					
Cumulative impacts		tigation this impact could result in po	otential erosion dow	nhill of the site caused		

Project Phase	Construction						
Impact	Noise pollution						
Description of impact		Noise caused by machinery and staff					
Mitigable	Low	Mitigation does not exist; significance of impacts					
Potential mitigation	07:00-17:00 Machinery r Staff must b	 Construction activities must only take place during normal working times between 07:00-17:00 on weekdays. Machinery may be fitted with silences to dampen noise. 					
Assessment	Withou	ut mitigation		With mitigation			
Nature	Negative		Negative				
Duration	Brief	Impact will not last longer than 1 year	Brief	Impact will not last longer than 1 year			
Extent	Limited	Limited to the site and its immediate surroundings	Limited	Limited to the site and its immediate surroundings			
Intensity	Very low	Natural and/ or social functions and/ or processes are slightly altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered			
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Almost certain / Highly probable	It is most likely that the impact will occur			
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge			
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact			
Resource	Not relevant		Not				
irreplaceability			relevant				
Significance	Minor	r - negative	N	legligible - negative			

Comment on	Some extent of noise pollution during construction is expected; however, with mitigation
significance	the impact will be reduced.
Cumulative	No cumulative impacts exist.
impacts	

Project Phase	Construction							
Impact		Visual i	mpact					
Description of	Visual & aesthetic consequences of the proposed project							
impact		T						
Mitigable	Medium			ce significance of impacts				
Potential mitigation	adopted to	mitigate the colours, heig etc, which will all cont	ghts, disturbai	or the development must be nce areas, maximum footprint, smaller visual impact on the				
	 The necess protect the Appoint a L of an indigand to prepared. 	 The necessary measures be implemented during the construction phase to protect the natural vegetation, to control the noise, dust and visual intrusion. Appoint a Landscape consultant to recommend and implement the introduction of an indigenous landscape plan to protect the existing indigenous vegetation and to prepare a landscape plan for implementation in the private and common areas. 						
Assessment		external lighting restriction ut mitigation		With mitigation				
Nature	Negative		Negative					
Duration	Short term	Impact will last between 1 and 5 years	Short term	Impact will last between 1 and 5 years				
Extent	Limited	Limited to the site and its immediate surroundings	Limited	Limited to the site and its immediate surroundings				
Intensity	Low	Natural and/ or social functions and/ or processes are somewhat altered	Very low	Natural and/or social functions and/or processes are slightly altered				
Probability	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur	Likely	The impact may occur				
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment				
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	High	The affected environmental will be able to recover from the impact				
Resource	Not relevant		Not					
irreplaceability			relevant					
Significance		<mark>r - negative</mark>		legligible - negative				
Comment on significance	The proposal is sensitive towards the character of the area and attempts to create a unique sense of place that will blend in and compliment the ambience of the surrounding area.							
Cumulative impacts	No cumulative imp	No cumulative impacts exist.						

Project Phase		Constru	ction			
Impact		Employi				
Description of	Empowerment of the local community members living in the area relating to temporary					
impact	•	employment o				
Mitigable	Medium	,	nsure that the	e positive impact is followed		
5 1 11 1		through.				
Potential			ommunicatio	n channels to ensure social		
mitigation	representation Use local lab	on. Sour and source local mate	orials as far a	s possible		
Assessment		ut mitigation	Enais as rai a: I	With mitigation		
Nature	Negative	n miligation	Positive	wiin miigailon		
Duration	Short term	Impact will last	Short term	line in ord will least be above and 1		
Duration	2000 letti	between 1 and 5 years	2non iemi	Impact will last between 1 and 5 years		
Extent	Local	Extending across the site and to nearby settlements	Local	Extending across the site and to nearby settlements		
Intensity	Low	Natural and/ or social functions and/ or processes are somewhat altered	Low	Natural and/ or social functions and/ or processes are somewhat altered		
Probability	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	Almost certain / Highly probable	It is most likely that the impact will occur		
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge		
Reversibility	Not relevant		Not relevant			
Resource irreplaceability	Not relevant		Not relevant			
Significance	Nealiait	ole - negative		legligible - positive		
Comment on significance	Due to the proposed development being on a small-scale, there is a low difference in impacts between without mitigation and with mitigation. However, as the impact would be positive for the local community to be employed during construction, mitigation is recommended to ensure this occurs.					
Cumulative impacts	Minor upliftment for	the local community.				

Impacts foreseen during the Operational Phase for the Preferred Alternative (60 Residential Stands):

Project Phase	Operation				
Impact		Visual / Sens			
Description of	Visual impacts o			ue to incorrect or excessive	
impact	'	lighting, especially	•		
Mitigable	Medium			e significance of impacts	
Potential		y-laws need to be adhere			
mitigation		•		reas with suitable indigenous	
3	vegetation.			3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	
	_	removal and follow-up op	erations of inv	asive alien plants.	
		Architectural Design Guide			
	Create a 10	Om wide buffer between t	he developme	ent and the Keurboom Road.	
	This strip of l	and will be densely veget	ated to obscu	e the development.	
Assessment	Withou	ut mitigation		With mitigation	
Nature	Negative		Negative Lov	W	
Duration	Permanent	Impact may be	Brief	Impact will not last longer	
		permanent, or in		than 1 year	
		excess of 20 years			
Extent	Limited	Limited to the site and	Limited	Limited to the site and its	
		its immediate		immediate surroundings	
		surroundings			
Intensity	Low	Natural and/ or social	Very low	Natural and/or social	
		functions and/ or		functions and/or processes	
		processes are		are slightly altered	
		somewhat altered			
Probability	Probable	Has occurred here or	Rare /	Conceivable, but only in	
		elsewhere and could	improbable	extreme circumstances,	
		therefore occur		and/or might occur for this	
				project although this has	
				rarely been known to	
				result elsewhere	
Confidence	Medium	Determination is based	Medium	Determination is based on	
		on common sense and		common sense and	
B 11- 111	A A = altrina	general knowledge	11'-1-	general knowledge	
Reversibility	Medium	The affected	High	The affected environmental	
		environment will only		will be able to recover from	
		recover from the		the impact	
		impact with significant intervention			
Resource	Not relevant	inervermon	Not		
irreplaceability	INDITOIOVALII		relevant		
Significance	Minor - negative Negligible - negative				
Comment on				ut it provides a level of security	
significance				out should be implemented in	
		not cause negative impac	_	•	
	,				
	Ample open space	s and landscaped streets o	are incorporate	ed into the design to enhance	
	the quality of the n			2 2 2.2.1.3.1.00	
Cumulative			ot be meetina	design guidelines enforced	
impacts					
-	by the municipality. Specifically design guidelines for the local area.				

Project Phase	Operational					
Impact		Inputs of stormwater from roofs and roads into the pond				
Description of impact	Reduced physico-chemical water quality including the introduction of litter.					
Mitigable	High	Mitigation exists and will notab	lv reduce signi	ificance of impacts		
Potential		ormwater infrastructure to be dir				
mitigation		ne maintenance inspections to		•		
9		and spring.	0.00.0.	, , , , , , , , , , , , , , , , , , , ,		
	•	water should be diverted to det	ention ponds o	on the site which are indicated		
		arious SDP layouts and are consis				
	mana	agement.				
Assessment		Without mitigation		With mitigation		
Nature	Negative		Low negative	e		
Duration	Short term	Impact will last between 1 and 2 years.	Brief	Impact will not last longer than 1 year.		
Extent	Limited	Limited to the site and its	Very	Limited to the site and its		
		immediate surroundings	limited	immediate surroundings		
Intensity	Low	Natural and/or social	Negligible	Natural and/ or social		
		functions and/or processes		functions and/ or processes		
		are somewhat altered are negligibly altered				
Probability	Possible	Has occurred here or	Rare /	Conceivable, but only in		
		elsewhere and could	improbable	extreme circumstances,		
		therefore occur		and/or might occur for this		
		project although this has				
				rarely been known to		
Cantidanas	A A a ali:a	result elsewhere Determination is based on Medium Determination is based on				
Confidence	Medium	Determination is based on	Medium			
		common sense and general knowledge		common sense and general knowledge		
Reversibility	Completely	The impact can be reversed	Completely	The impact can be reversed		
Reversioning	reversible	with the implementation of	reversible	with the implementation of		
	10 10131010	minor mitigation measures.	10 10131010	minor mitigation measures.		
Resource	Low	The resource is not damaged	Low	The resource is not		
irreplaceability		irreparably or is not scarce		damaged irreparably or is		
. ,		'		not scarce		
Significance		Minor - negative	N ₀	egligible - negative		
Comment on	While a natu	ral spring and pond are present	on the site, the	ey are very small in extent and		
significance	can be ade	quately protected from the dev	elopment by	implementing the 10m buffer		
	during the co	onstruction and operational pho	ises as indicat	ed in this report. The presence		
		e is not sufficient to increase the				
		ed from the development area	No stormwate	er should be put into this pond		
		is of high quality.				
Cumulative impacts	The impact v	vould result in insignificant cumu	lative effects.			
IIIIpacis						

Project Phase	Operational				
Impact	Landscaping, gardening and maintenance extending into the pond and buffer area				
Description of	Transformation of indigenous vegetation through planting, removal and / or dumping.				
impact					
Mitigable	High Mitigation exists and will notably reduce significance of impacts				
Potential	 Landscaping and gardening staff must not undertake any clearing of vegetation 				
mitigation	inside of the 10m buffer.				
	A bird hide in the buffer to spot wildlife would be acceptable, but no additional recreational activities. The point is to create a quiet habitat with suitable				
	vegetation cover for continued use by animals, birds etc.				
	Indigenous plants found in adjacent thickets may be planted around the pond.				
	Only indigenous plants found in the immediate surrounding area may be planted.				

	 A list of recommended wetland plants for that can be used to improve vegetation cover of muddy areas and marginal areas of the pond is provided in this report. Do not place any fish into the pond as only alien invasive fish to the area would survive and could be transferred to other waterbodies on the feet of animals or birds. The only plants that should be removed from the area are listed alien invasive species. 					
Assessment		Without mitigation		With mitigation		
Nature	Negative		Low negative	9		
Duration	Short term	Impact will last between 1 and 2 years.	Brief	Impact will not last longer than 1 year.		
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings		
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered		
Probability	Possible	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere		
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge		
Reversibility	Completely reversible	The impact can be reversed with the implementation of minor mitigation measures.	Completely reversible	The impact can be reversed with the implementation of minor mitigation measures.		
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce		

Minor - negative

The impact would result in insignificant cumulative effects.

the green corridor.

Project Phase	Operation					
Impact	Stormwater Management					
Description of		Accelerated erosion / pollut	ion into sub-surfac	ce water.		
impact						
Mitigable	High Mitigat	ion exists and will considerably re	educe the signific	ance of impacts		
Potential	The sto	orm water drainage system must	be adhered to, a	and the system should lead		
mitigation	runoff	water away from sensitive areas	to prevent soil ero	osion.		
	Use rai	nwater collection tanks to serve	as a retention ves	ssel in downpours.		
	Drivew	·				
	surface	e flow and facilitate percolation.	,			
Assessment		Without mitigation	W	ith mitigation		
Nature	Negative		Low Negative			
Duration	Short term	Impact will last between 1	Brief	Impact will not last		
		and 5 years		longer than 1 year		
Extent	Limited	Limited to the site and its	Very limited	Limited to specific		
		immediate surroundings		isolated parts of the		
	site					
Intensity	Low	Natural and/or social	Very low	Natural and/ or social		
		functions and/or processes		functions and/ or		
		are somewhat altered				

The purpose of the pond and spring is to provide a sustained water source for wildlife in

Significance

Comment on

significance Cumulative

impacts

Negligible - negative

				processes are slightly altered	
Probability	Almost certain	It is most likely that the impact will occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment	
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	High	The affected environmental will be able to recover from the impact	
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce	
Significance	Negligible - negative Minor - negative				
Comment on significance	The development portion of the site is flat with no gradient along its southern boundary and has no defined drainage discharge points. The existing flat and permeable conditions allow for natural infiltration.				
Cumulative impacts	_	Without mitigation this impact could result in potential erosion on the site caused by stormwater flow.			

Project Phase	Operation				
Impact	Stormwater Runoff				
Description of impact	Alt	teration of surface flows caused	by increased storm	nwater runoff.	
Mitigable	High Mitigati	on exists and will considerably re	educe the significal	nce of impacts	
Potential	Stormw	rater from erven must be attenu	ated on site as far o	as possible.	
mitigation		rater from access roads must be ention ponds).	e attenuated onsit	e (prior to any discharge	
		off velocity of stormwater must	be reduced with 6	energy dissipaters prior to	
		ge into retention ponds.			
	Stormw	rater management should enco	ourage infiltration of	water into the soil profile	
	and of	ner on site attenuation (i.e. using	g grass pavers etc.).		
		tural spring and small dam must	t be protected by	a 10 m buffer throughout	
	the operational phase.				
		mwater should be put into this d		<u> </u>	
Assessment		Without mitigation		h mitigation	
Nature	Negative		Low Negative		
Duration	Permanent	Impact may be permanent,	Permanent	Impact may be	
		or in excess of 20 years		permanent, or in	
				excess of 20 years	
Extent	Very limited	Limited to specific isolated	Very limited	Limited to specific	
		parts of the site		isolated parts of the	
				site	
Intensity	Medium	Natural and/or social	Low	Natural and/or social	
	functions and/or processes functions and/or				
	are notably altered processes are				
Dura la cula litta :	somewhat altered				
Probability	Almost	It is most likely that the	Rare /	Conceivable, but only	
	certain	impact will occur	improbable	in extreme	
				circumstances, and/or	
				might occur for this	

				project although this has rarely been known to result elsewhere
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance		Minor - negative	Negligi	ble - negative
Comment on significance	The development will result in an increase in the area of paved/hardened surfaces. This will generate increased volumes of stormwater runoff. Hardened surface and establishment of foundations for houses may increase sub-surface flows towards the natural spring and small dam. The dam water is of high quality, and pollutants from stormwater runoff entering the dam should be minimised. Adequate management of stormwater should therefore effectively minimise the intensity of this impact.			
Cumulative impacts		ation this impact could result	in the water qua	ality of the dam being

Project Phase		Operation				
Impact		•	Connectivity			
Description of	Cut-off of n	atural dispersal and foraging mo	vement by ar	nimals, impacts on suitable link		
impact		or important corridor, fragmento	ation of ecolog	gical infrastructure		
Mitigable	Low	Mitigation will slightly reduce th	e significance	e of impacts		
Potential	❖ Inco	rporate portions of the seconda	ry vegetation	area to form part of the open		
mitigation	spac	ce system within the developmer	nt, which will li	nk up with the forest area.		
	❖ The p	proposed open space system sho	ould correspor	nd to the position of indigenous		
		etation.				
	♦ An c	ppen space management syste	em should be	developed to formalize such		
	step:	s for forest protection.				
	♦ It is	recommended that fencing	does not int	ersect the corridor between		
	prop	erties. Security is unlikely to be a	concern alor	na the base of the slope and it		
		erefore not necessary to fence o		.9		
		onsidered absolutely necessar		it is fossible to fonce the		
		elopment off from the 20m corride	•	ing the comdor as a continuous		
		tat between adjacent propertie				
		erable fencing would be palisac				
	man	nmals between bars whereas c	learvu type fe	encing prohibits all movement		
	barri	ng very small animals like frogs.				
	❖ Wild!	ife gaps in the perimeter fence r	nust be installe	ed at appropriate intervals and		
	be o	f a suitable dimension to allow fo	or the movem	ent of small animals.		
Assessment		Without mitigation		With mitigation		
Nature	Negative		Negative			
Duration	Permanent	Impact may be permanent,	Permanent	Impact may be permanent,		
		or in excess of 20 years		or in excess of 20 years		
Extent	Limited Limited to the site and its		Very	Limited to the site and its		
		immediate surroundings	limited	immediate surroundings		
Intensity	Low	Natural and/or social	Very low	Natural and/or social		
		functions and/or processes		functions and/or processes		
		are somewhat altered		are slightly altered		

Probability	Probable	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	High	Substantive supportive data exists to verify the assessment	Medium	Determination is based on common sense and general knowledge	
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Medium	The affected environment will only recover from the impact with significant intervention	
Resource irreplaceability	Medium	The resource is damaged irreparably but is represented elsewhere	Low	The resource is not damaged irreparably or is not scarce	
Significance		Minor - negative	N	egligible - negative	
Comment on significance	The proposed development layout makes provision for a 20m buffer along the forest margin and also incorporated portions of the secondary vegetation area to form part of the open space system within the development, which will link up with the forest area.				
Cumulative impacts	The impact	would result in insignificant cumu	lative effects		

Project Phase	Operation					
Impact		Eradication of Alien Vegetation				
Description of impact	lmp	oacts on biodiversity / natur	al habitats / ir	ncreased fire risk		
Mitigable	High					
Potential mitigation	 All invasive alien plants should be completely cleared from the property, and where a tree or bush cover is desired, replaced with suitable indigenous species. Rehabilitation of disturbed areas, as well as previously invaded areas, should promote establishment of site-appropriate indigenous species. A suitable planting list of trees and shrubs must be compiled and incorporated into the Landscape Plan. An Alien Control Plan should be compiled to systematically remove and control alien plant species. Follow-up operations must be done. Minimise disturbance to the natural vegetation using low impact manual labour techniques. 					
Assessment		hazard on site ut mitigation		With mitigation		
Nature	Negative		Positive			
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Brief	Impact will not last longer than 1 year		
Extent	Limited	Limited to the site and its immediate surroundings	Limited	Limited to the site and its immediate surroundings		
Intensity	Very high	Natural and/ or social functions and/ or processes are majorly altered	Medium	Natural and/or social functions and/or processes are notably altered		
Probability PO Roy 1252 Sedge	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to		

				result elsewhere		
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge		
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Medium	The affected environment will only recover from the impact with significant intervention		
Resource irreplaceability	Not relevant		Not relevant			
Significance	High - negative Moderate - positive					
Comment on	An ongoing alien i	An ongoing alien invasive management programme should take place on site. This will				
significance	protect riparian habitats downslope from degradation and could potentially be the biggest					
	contribution to maintaining and protecting biodiversity on site and in surrounding areas.					
Cumulative	Without mitigation t	he development would no	t be meeting	design guidelines enforced by		
impacts	the municipality. Sp	ecifically design guidelines	for the local of	area.		

Project Phase	Operation					
Impact	Formal gardens					
Description of impact	Habitat loss for terrestrial wildlife, fragmentation of ecological corridor					
Mitigable	Low	Mitigation will slightly redu	uce the signifi	cance of impacts		
Potential mitigation	indigenous All alien invo	vegetation. asive plants must be remov	ed from the s	ite on an on-going basis. nent should be encouraged to		
	avoid plant	ing exotic plants in favour o	of locally indig	genous plants.		
		g must be done with locall	y occurring in			
Assessment		ut mitigation		With mitigation		
Nature	Negative	1	Positive			
Duration	Brief	Impact will not last longer than 1 year	Permanent	Impact may be permanent, or in excess of 20 years		
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to specific isolated parts of the site		
Intensity	Negligible	Natural and/ or social functions and/ or processes are negligibly altered	Very low	Natural and/ or social functions and/ or processes are slightly altered		
Probability	Highly unlikely / None	Expected never to happen	Almost certain / Highly probable	It is most likely that the impact will occur		
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge		
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	Not relevant			
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Not relevant			
Significance	Negligi	ble - negative		Minor - positive		

Comment on	With mitigation the impact is likely to have more beneficial impact to retaining natural
significance	biodiversity, than without mitigation.
Cumulative	Without mitigation this impact could result in the spread of alien invasive plants and the loss
impacts	of indigenous vegetation.

Impacts foreseen during the Construction Phase for Alternative 1 (73 Residential stands):

Project Phase	Construction					
Impact	Clearance of vegetation for the construction of the dwelling and associated					
	infrastructure					
Description of		ensitive vegetation, habitat loss f				
impact	species un	able to evade the disturbance,	•	oropagules, fragmentation of		
A 4 *1 * - -	A 4 = =12		nfrastructure	*f*		
Mitigable	Medium	Mitigation exists and will notable				
Potential		rever there are sections of				
mitigation		elopment area, they should not Id be conserved as small island:				
		area.	s of flatoral le	sources for the strial whalle of		
		emoval and translocation of pro	tected plants	if found should be undertaken		
		to construction clearing activitie				
		ected plants must either be mov				
		n to a nursery for temporary store				
		ess by heavy machinery should k				
	 Only 	areas necessary for the develo	pment footpr	int should be cleared and the		
		ainder of the property should be				
		lown areas for construction mat		contained within the clearing		
		orint of the proposed developme				
		-meter buffer zone must be reta	iined along th	e base of the slope to protect		
	the t	orest margin.		NA (**)		
Assessment	N. I. a. a. a. I. a. a.	Without mitigation	1	With mitigation		
Nature Duration	Negative	line is an at the court be a transfer or the court	Low negativ			
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years		
Extent	Limited	Limited to the site and its	Very	Limited to the site and its		
LAIGIII	Liiiiica	immediate surroundings	limited	immediate surroundings		
Intensity	High	Natural and/ or social	Low	Natural and/or social		
c.i.sii y	111911	functions and/ or processes		functions and/or processes		
		are significantly altered		are somewhat altered		
Probability	Certain /	There are sound scientific	Probable	Has occurred here or		
•	Definite	reasons to expect that the		elsewhere and could		
		impact will definitely occur		therefore occur		
Confidence	High	Substantive supportive data	Medium	Determination is based on		
		exists to verify the assessment common sense and general				
				knowledge		
Reversibility	Low	The affected environment will	Medium	The affected environment		
		not be able to recover from		will only recover from the		
		the impact - permanently		impact with significant		
Danasa	1.121-	modified	1	intervention		
Resource	High	The resource is damaged	Low	The resource is not		
irreplaceability		irreparably but is represented elsewhere		damaged irreparably or is		
Significance		Minor - negative	N.I.	not scarce		
NODITICATO		winor - negative	N	egligible - negative		

Comment on significance	The forested area to the north of the development is excluded from the proposed development and will not be directly affected.
Cumulative impacts	The impact would result in insignificant cumulative effects

Project Phase	Construction					
Impact	Loss of bab	Loss of secondary vegetation within endangered ecosystem				
Description of impact	Loss of habitat on site (within the proposed development footprint), modification of ecological processes, spillover effects into surrounding areas due mostly to secondary					
	impacts such as boundary disturbance and alien invasive species spread.					
Mitigable	Medium	Mitigation exists and will notable				
Potential		ess to forested areas during co				
mitigation		struction personnel. These areas r				
		npile and implement an alien n				
		ities and areas and provides a p	-	-		
		ertake regular monitoring to det		sions early so that they can be		
	cont	rolled, as per the Alien Manager	ment Plan.			
	• Reho	abilitation of disturbed areas, a	is well as pre	viously invaded areas, should		
	prom	note establishment of site-approp	priate indigen	ous species.		
Assessment		Without mitigation		With mitigation		
Nature	Negative		Low negativ	-		
Duration	Permanent	Impact may be permanent,	Permanent	Impact may be permanent,		
20.0		or in excess of 20 years		or in excess of 20 years		
Extent	Limited	Limited to the site and its	Very	Limited to the site and its		
		immediate surroundings	limited	immediate surroundings		
Intensity	Medium	Natural and/or social	Low	Natural and/or social		
iiii Ciiony	Modioni	functions and/or processes		functions and/or processes		
		are notably altered		are somewhat altered		
Probability	Certain /	There are sound scientific	Certain /	There are sound scientific		
Trobubility	Definite	reasons to expect that the	Definite	reasons to expect that the		
		impact will definitely occur	Bollino	impact will definitely occur		
Confidence	High	Substantive supportive data	High	Substantive supportive data		
	19	exists to verify the assessment	19	exists to verify the		
		assessment				
Reversibility	Low	The affected environment will	Medium	The affected environment		
,		not be able to recover from		will only recover from the		
		the impact - permanently		impact with significant		
		modified		intervention		
Resource	Low	The resource is not damaged	Low	The resource is not		
irreplaceability		irreparably or is not scarce		damaged irreparably or is		
,		,		not scarce		
Significance		Minor - negative	N	egligible - negative		
Comment on	The veaetat	tion type (Garden Route Shale				
significance						
	areas of the site on the steep slopes are covered with forest that matches the description for Southern Afrotemperate Forest, which is not threatened, but is separately listed as					
		nder the National Forests Act. The		·		
	forested areas are completely excluded from the proposed development (both options)					
		and are not directly affected.				
	and die net alleen, andered.					
	The only rem	naining non-forest vegetation on	site is conside	ered to be secondary.		
	However, on the basis that no legal soil disturbance has occurred during the preceding					
		legally considered to be natura				
		It is, however, not representative	-			
		is not considered to be irreplace	_			
		,				

Cumulative	The impact would result in insignificant cumulative effects
impacts	

Project Phase		Construction				
Impact	Loss of individuals of protected tree species					
Description of	Loss of habitat on site (within the proposed development footprint), disturbance or loss of					
impact	protected tre					
Mitigable	Medium	Mitigation exists and will notab	ly reduce sign	ificance of impacts		
Potential	 Retai 	n existing large trees within prop	osed develop	ment.		
mitigation	If any	r trees need to be removed or p	oruned then a	permit is required, according		
	to the	e National Forests Act.				
	 Plant 	additional milkwoods in the de	velopment as	part of the final landscaping.		
	These	e can be planted along with other	er appropriate	coastal forest species, but the		
	propo	ortions and composition should	reflect habite	at that would have occurred		
		ally at this site.				
Assessment		Without mitigation		With mitigation		
Nature	Negative		Low negative			
Duration	Permanent	Impact may be permanent,	Long Term	Impact will last between 16		
		or in excess of 20 years		and 30 years		
Extent	Very	Limited to the site and its	Very	Limited to the site and its		
	limited	immediate surroundings	limited	immediate surroundings		
Intensity	Very high	Natural and/ or social	Low	Natural and/or social		
		functions and/ or processes		functions and/or processes		
		are majorly altered		are somewhat altered		
Probability	Probable	Has occurred here or	Rare /	Conceivable, but only in		
		elsewhere and could	improbable	extreme circumstances,		
		therefore occur		and/or might occur for this		
		project although this has				
		rarely been known to				
				result elsewhere		
Confidence	Medium	Determination is based on	Medium	Determination is based on		
		common sense and general		common sense and general		
	5 !!	knowledge	5 "	knowledge		
Reversibility	Partly	The impact is reversible but	Partly	The impact is reversible but		
	reversible	more intense mitigation	reversible	more intense mitigation		
D		measures are required		measures are required		
Resource	Low	The resource is not damaged	Low	The resource is not		
irreplaceability		irreparably or is not scarce		damaged irreparably or is		
Ciamifia ama a		Aliner negative	NI.	not scarce		
Significance Comment on	The tree and	Minor - negative		egligible - negative		
significance		cies affected is Sideroxylon inerm	•			
significance		dividuals were seen on site, all of				
	is widespread but is a key and dominant component of coastal forests in the Garden Route.					
Cumulative		vould result in insignificant cumu	lative effects			
impacts		voola reson in misignineam como	IGHAC GHECI2			
ппрасіз						

Project Phase	Construction				
Impact		Loss of habitat for listed threatened animal species			
Description of impact	Loss of habitat for threatened plant and animal species, spillover effects into surrounding areas due mostly to secondary impacts such as dust deposition and alien invasive species spread.				
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts			
Potential mitigation	• Prote	ct natural forest vegetation adjacent to the proposed development site.			

- Rehabilitate and improve the small dam on site, including introducing pond margin vegetation typical of mountain ponds in forested areas. This will provide good habitat for various frogs, including potentially Afrixalus knysnae.
- Forest habitats on the upland, steeply-sloping part of the site, have high biodiversity and conservation value, and are designated as sensitive. These areas must not be affected by the proposed development. A buffer zone should be retained along the base of the slope to protect the forest margin. For example, steps should be taken to rehabilitate these areas and encourage growth of species, such as *Pterocelastrus tricuspidatus* and *Sideroxylon inerme*, that are mesic and fire-resistant.
- An open space management system should be developed to formalize steps for forest protection.

	forest protection.				
Assessment		Without mitigation		With mitigation	
Nature	Negative	T	Low negative		
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years	
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings	
Intensity	Very high	Natural and/ or social functions and/ or processes are majorly altered	Low	Natural and/or social functions and/or processes are somewhat altered	
Probability	Probable	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge	
Reversibility	Partly reversible	The impact is reversible but more intense mitigation measures are required	Partly reversible	The impact is reversible but more intense mitigation measures are required	
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce	
Significance		Minor - negative	N	egligible - negative	
Comment on significance	 There is habitat on site that is suspected habitat for threatened plant and animal species. This is the forest habitat, which is outside the proposed development footprint and will not be affected by the proposed development. The species that could potentially occur within this habitat are as follows: Knysna Warbler (Vulnerable) has a moderate probability of occurring in forest margin areas. Crowned Eagle (Near Threatened) - the forests on site may constitute part of the general foraging range but it is unlikely that they are resident on site, or are dependent on it. Tunnelling Dung Beetle (Endangered). The type locality of the species is forest habitats in the Keurboomstrand area. Small antelope (Vulnerable). There is a moderate to high probability of it occurring in the forests on site. 				
Cumulative		l impact affects a negligible pr		e overall habitat available for	
impacts	these specie	s and will not directly affect any	individuals.		

Project Phase		Constr	uction				
Impact		Earthworks and vegetation cle	aring for const	ruction activities			
Description of impact	Sedimentation of the pond resulting in poor water quality. Destruction of vegetation around the pond and spring.						
Mitigable	High	Mitigation exists and will notab	lv reduce signi	ificance of impacts			
Potential							
mitigation	open const • Add : • Site ir not e	 open space to protect the pond as well as the corridor from impact during construction. Add signage to the fence indicating the area as No-Go. 					
Assessment		Without mitigation		With mitigation			
Nature	Negative		Low negative				
Duration	Short term	Impact will last between 1 and 2 years.	Brief	Impact will not last longer than 1 year.			
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings			
Intensity	Low						
Probability	Possible Has occurred here or elsewhere and could therefore occur Has occurred here or elsewhere and could therefore occur Rare / improbable extreme circumstances, and/or might occur for the project although this has rarely been known to result elsewhere						
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge			
Reversibility	Completely reversible	The impact can be reversed with the implementation of minor mitigation measures.	Completely reversible	The impact can be reversed with the implementation of minor mitigation measures.			
Resource irreplaceability	Low						
Significance		Minor - negative		egligible - negative			
Comment on significance	While a natural spring and pond are present on the site, they are very small in extent and can be adequately protected from the development by implementing the 10m buffer during the construction and operational phases as indicated in this report. The presence of this feature is not sufficient to increase the sensitivity of the site to Very High, and it has been excluded from the development area. No stormwater should be put into this pond as the water is of high quality .						
Cumulative impacts	The impact v	vould result in insignificant cumu	lative effects.				

Project Phase		Construction			
Impact		Waste Pollution			
Description of	Pollutio	n of buffer zones and natural areas caused by waste generated by the			
impact		construction process.			
Mitigable	High	Mitigation exists and will considerably reduce significance of impacts			
Potential mitigation	man supp • All co wast	construction waste generated on-site during construction must be adequately aged. Separation and recycling of different waste materials should be corted. Construction waste materials must be collected and disposed of at a suitable e facility. Supplying of construction material within natural areas or buffer zones may take e.			

	 The buffer and "no-go" areas must be monitored on a weekly basis to clean-up any waste that may have been blown from the construction site. Adequate sanitary facilities and ablutions must be provided for all personnel throughout the project area. Use of these facilities must be enforced (these facilities must be kept clean so that they are a desired alternative to the surrounding vegetation). 					
Assessment		Without mitigation		With mitigation		
Nature	Negative		Low negative			
Duration	Short term	Impact will last between 1 and 5 years	Brief	Impact will not last longer than 1 year		
Extent	Very limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings		
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/or social functions and/or processes are slightly altered		
Probability	Likely	The impact may occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere		
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment		
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact		
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce		
Significance	1	Negligible - negative	N	egligible - negative		
Comment on significance	pollute buff workers pre	n activities are likely to generate s fer zones and natural areas. In sent on site will generate a signif environment.	addition, the icant amount	high numbers of construction		
A 1 11	The form and a south a south is factor of a south as a fine to					

Project Phase	Construction
Impact	Construction Vehicles
Description of	Pollution caused by the operation of vehicles and heavy machinery.
impact	
Mitigable	High Mitigation exists and will considerably reduce significance of impacts
Potential mitigation	 Construction activities must be confined to clearly demarcated areas so as to prevent unnecessary disturbance the surrounding environment. No vehicles are to park or operate within "no-go" areas. Excavators and all other machinery and vehicles must be checked for oil and fuel leaks daily. No machinery or vehicles with leaks are permitted to work on site. No fuel storage, refuelling, vehicle maintenance or vehicle depots to be allowed near natural spring and dam. Refuelling and fuel storage areas, and areas used for the servicing or parking of vehicles and machinery, must be located on impervious bases and should have bunds around them (sized to contain 110 % of the tank capacity) to contain any possible spills. These areas must not be located within any natural drainage areas or preferential flow paths and must be located outside of buffer zones. The contractors used for the project should have spill kits available to ensure that any fuel or oil spills are clean-up and discarded correctly.

The impact would result in insignificant cumulative effects.

Cumulative impacts

Assessment		Without mitigation	With mitigation		
Nature	Negative		Low negative	Э	
Duration	Short term	Impact will last between 1 and 5 years	Brief	Impact will not last longer than 1 year	
Extent	Very limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings	
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/or social functions and/or processes are slightly altered	
Probability	Likely	The impact may occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment	
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact	
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce	
Significance	Negligible - negative Negligible - negative				
Comment on significance	Operation of vehicles could result in spillages or leaks of hydrocarbons (fuel and oil) and could lead to unnecessary disturbance of natural areas.				
Cumulative impacts	The impact	would result in insignificant cumu	ulative effects.		

Project Phase	Construction					
Impact		Disturbance / removal of topsoil				
Description of		Disturbance of topsoil, potential sc	oil erosion and the lo	oss of topsoil		
impact						
Mitigable	High Mit	gation exists and will considerably re	duce the significar	nce of impacts		
Potential mitigation	 Areas that are disturbed through building activities (such as the excavations for pipelines) should be suitably rehabilitated without delay. Failure to do so will have a knock-on effect on biodiversity in the form of an increase in wind erosion, soil exposure and a loss of the soil micro-organisms that are essential for plant growth. Organic matter, such as roots and humus/topsoil should be removed from the footprint of structures and stockpiled separately for landscaping purposes. The stockpiling of topsoil for use in rehabilitation is required. Stockpiles must not exceed 1.5m in height, must be covered with shade cloth or similar, to prevent erosion and any invasive alien species that begin to grow within it must be removed. Soil disturbance during the removal of alien invasive plants must be minimised as much as possible. 					
	The site must be stabilised where necessary using available materials, where possible. It is recommended that exposed soils are covered with wood chips, and tree branches used to create berms. Any cut alien vegetation on site can be utilised for this purpose if it is without seed.					
Assessment	Without mitigation With mitigation			n mitigation		
Nature	Negative		Low Negative			
Duration	Short term	Impact will last between 1 and 5 years	Brief	Impact will not last longer than 1 year		

Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to specific isolated parts of the site		
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/ or social functions and/ or processes are slightly altered		
Probability	Almost certain	It is most likely that the impact will occur	Likely	The impact may occur		
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment		
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	High	The affected environmental will be able to recover from the impact		
Resource irreplaceabilit y	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce		
Significance		Negligible - negative Minor - negative				
Comment on significance	Clearing areas of the site in preparation for construction will expose bare soil which may lead to the potential loss of topsoil through runoff and incorrect storage. This is not envisaged to be a significant impact with mitigation measures in place. Topsoil can be reused on site for rehabilitation purposes.					
Cumulative impacts	Without mi	tigation this impact could result in po ater flow.	tential erosion dow	nhill of the site caused		

Project Phase	Construction					
Impact	Noise pollution					
Description of impact		Noise caused by m	achinery and	staff		
Mitigable	Low	Mitigation does not exist; significance of impacts	or mitigation	will slightly reduce the		
Potential mitigation	07:00-17:00 • Machinery I • Staff must b	 Construction activities must only take place during normal working times between 07:00-17:00 on weekdays. Machinery may be fitted with silences to dampen noise. 				
Assessment	Withou	ut mitigation		With mitigation		
Nature	Negative		Negative			
Duration	Brief	Impact will not last longer than 1 year	Brief	Impact will not last longer than 1 year		
Extent	Limited	Limited to the site and its immediate surroundings	Limited	Limited to the site and its immediate surroundings		
Intensity	Very low	Natural and/ or social functions and/ or processes are slightly altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered		
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Almost certain / Highly probable	It is most likely that the impact will occur		
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge		

Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact		
Resource	Not relevant		Not			
irreplaceability			relevant			
Significance	Minor - negative Negligible - negative					
Comment on	Some extent of noise pollution during construction is expected; however, with mitigation					
significance	the impact will be reduced.					
Cumulative	No cumulative impacts exist.					
impacts						

Project Phase		Construction						
Impact	Visual impact							
Description of	Visual & aesthetic consequences of the proposed project							
impact								
Mitigable	Medium			ce significance of impacts				
Potential				or the development must be				
mitigation	vegetation, landscape. The necess protect the Appoint a L of an indig and to prepared.	 adopted to mitigate the colours, heights, disturbance areas, maximum footprint, vegetation, etc, which will all contribute to a smaller visual impact on the landscape. The necessary measures be implemented during the construction phase to protect the natural vegetation, to control the noise, dust and visual intrusion. Appoint a Landscape consultant to recommend and implement the introduction of an indigenous landscape plan to protect the existing indigenous vegetation and to prepare a landscape plan for implementation in the private and common 						
Assessment		ut mitigation		With mitigation				
Nature	Negative		Negative					
Duration	Short term	Impact will last	Short term	Impact will last between 1				
		between 1 and 5 years		and 5 years				
Extent	Limited	Limited to the site and its immediate	Limited	Limited to the site and its immediate surroundings				
		surroundings						
Intensity	Low	Natural and/ or social functions and/ or processes are somewhat altered	Very low	Natural and/or social functions and/or processes are slightly altered				
Probability	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur	Likely	The impact may occur				
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment				
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	High	The affected environmental will be able to recover from the impact				
Resource irreplaceability	Not relevant		Not relevant					
Significance	Mino	r - negative		legligible - negative				
Comment on significance	The proposal is ser	nsitive towards the charac	cter of the a	rea and attempts to create a le ambience of the surrounding				

Cumulative	No cumulative impacts exist.
impacts	

Project Phase		Constru	ction			
Impact	Employment					
Description of impact	Empowerment of the local community members living in the area relating to temporary employment opportunities					
Mitigable	Medium	through.		e positive impact is followed		
Potential mitigation	representation			n channels to ensure social spossible.		
Assessment	Withou	ıt mitigation		With mitigation		
Nature	Negative		Positive			
Duration	Short term	Impact will last between 1 and 5 years	Short term	Impact will last between 1 and 5 years		
Extent	Local	Extending across the site and to nearby settlements	Local	Extending across the site and to nearby settlements		
Intensity	Low	Natural and/ or social functions and/ or processes are somewhat altered	Low	Natural and/ or social functions and/ or processes are somewhat altered		
Probability	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	Almost certain / Highly probable	It is most likely that the impact will occur		
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge		
Reversibility	Not relevant		Not relevant			
Resource irreplaceability	Not relevant		Not relevant			
Significance		ole - negative		legligible - positive		
Comment on significance	Due to the proposed development being on a small-scale, there is a low difference in impacts between without mitigation and with mitigation. However, as the impact would be positive for the local community to be employed during construction, mitigation is recommended to ensure this occurs.					
Cumulative impacts	Minor upliftment for	the local community.				

Impacts foreseen during the Operational Phase for Alternative 1 (73 Residential Stands):

Project Phase	Operation
Impact	Visual / Sense of place
Description of	Visual impacts of structures / aesthetic consequences due to incorrect or excessive
impact	lighting, especially outdoor lighting

Mitigable	Medium	Mitigation exists and will	notably reduc	e significance of impacts		
Potential mitigation	 Municipal by-laws need to be adhered to. Re-vegetation and Landscaping of open space areas with suitable indigenous vegetation. 					
	Systematic rAdhere to ACreate a 10	patic removal and follow-up operations of invasive alien plants. The to Architectural Design Guidelines and Landscape Plan. The a 10m wide buffer between the development and the Keurboom Road. The property of land will be densely vegetated to obscure the development.				
Assessment		ut mitigation		With mitigation		
Nature	Negative		Negative Lov	W		
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Brief	Impact will not last longer than 1 year		
Extent	Limited	Limited to the site and its immediate surroundings	Limited	Limited to the site and its immediate surroundings		
Intensity	Low	Natural and/ or social functions and/ or processes are somewhat altered	Very low	Natural and/or social functions and/or processes are slightly altered		
Probability	Probable	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere		
Confidence	Medium	Determination is based on common sense and general knowledge	Medium Determination is based on			
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	High	The affected environmental will be able to recover from the impact		
Resource	Not relevant		Not			
irreplaceability	A4*		relevant			
Significance Comment on significance	Minor - negative Lighting, specifically outdoor lighting is not only aesthetic, but it provides a level of security to property owners. Therefore, outdoor lighting is essential, but should be implemented in a way which does not cause negative impacts to neighbours.					
	Ample open spaces and landscaped streets are incorporated into the design to enhance the quality of the neighbourhood.					
Cumulative impacts	Without mitigation the development would not be meeting design guidelines enforced by the municipality. Specifically design guidelines for the local area.					

Project Phase	Operational					
Impact		Inputs of stormwater from roofs and roads into the pond				
Description of	Reduced ph	ysico-chemical water quality including the introduction of litter.				
impact						
Mitigable	High	Mitigation exists and will notably reduce significance of impacts				
Potential	No sto	ormwater infrastructure to be directed towards the pond.				
mitigation		Routine maintenance inspections to clear windblow / discarded litter from the pond and spring.				
	on vo	nwater should be diverted to detention ponds on the site which are indicated arious SDP layouts and are consistent with the SUDS approach to stormwater agement.				

Assessment		Without mitigation		With mitigation	
Nature	Negative		Low negative	Э	
Duration	Short term	Impact will last between 1 and 2 years.	Brief	Impact will not last longer than 1 year.	
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings	
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered	
Probability	Possible	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge	
Reversibility	Completely reversible	The impact can be reversed with the implementation of minor mitigation measures.	Completely reversible	The impact can be reversed with the implementation of minor mitigation measures.	
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce	
Significance		Minor - negative	Ne	egligible - negative	
Comment on significance	While a natural spring and pond are present on the site, they are very small in extent and can be adequately protected from the development by implementing the 10m buffer during the construction and operational phases as indicated in this report. The presence of this feature is not sufficient to increase the sensitivity of the site to Very High, and it has been excluded from the development area. No stormwater should be put into this pond as the water is of high quality .				
Cumulative impacts		vould result in insignificant cumu	lative effects.		

Project Phase	Operational					
Impact	Landscapi	ing, gardening and maintenanc	e extending in	to the pond and buffer area		
Description of impact	Transformation	on of indigenous vegetation thro	ough planting,	removal and / or dumping.		
Mitigable	High	Mitigation exists and will notab		•		
Potential mitigation	inside A bird recre vege Indig Only A list cove Do ne survivi birds.	only plants that should be remo	ife would be of to create a coy animals, bird thickets may namediate surrous for that can be areas of the pas only alien in other waterbooks.	acceptable, but no additional quiet habitat with suitable ds etc. be planted around the pond. bunding area may be planted, be used to improve vegetation and is provided in this report. Invasive fish to the area would adies on the feet of animals or		
Assessment	Without mitigation With mitigation					
Nature	Negative		Low negative	Э		
Duration	Short term	Impact will last between 1 and 2 years.	Brief	Impact will not last longer than 1 year.		

Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings	
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered	
Probability	Possible	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge	
Reversibility	Completely reversible	The impact can be reversed with the implementation of minor mitigation measures.	Completely reversible	The impact can be reversed with the implementation of minor mitigation measures.	
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce	
Significance	Minor - negative Negligible - negative				
Comment on significance	The purpose of the pond and spring is to provide a sustained water source for wildlife in the green corridor.				
Cumulative impacts	The impact would result in insignificant cumulative effects.				

Project Phase		Operation					
Impact	Stormwater Management						
Description of impact		Accelerated erosion / pollution	on into sub-surface	e water.			
Mitigable	High Mitigatio	n exists and will considerably re	educe the significa	nce of impacts			
Potential mitigation	The storn runoff woUse rainvDriveway	 The storm water drainage system must be adhered to, and the system should lead runoff water away from sensitive areas to prevent soil erosion. Use rainwater collection tanks to serve as a retention vessel in downpours. 					
Assessment	W	thout mitigation	Wit	h mitigation			
Nature	Negative		Low Negative				
Duration	Short term	Impact will last between 1 and 5 years	Brief	Impact will not last longer than 1 year			
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to specific isolated parts of the site			
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/ or social functions and/ or processes are slightly altered			
Probability	Almost certain	It is most likely that the impact will occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere			
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment			

Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	High	The affected environmental will be able to recover from the impact		
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce		
Significance	Negligible - negative Minor - negative					
Comment on	The developmer	The development portion of the site is flat with no gradient along its southern boundary and				
significance	has no defined drainage discharge points. The existing flat and permeable conditions allow for natural infiltration.					
Cumulative	Without mitigation	on this impact could result in po	otential erosion on t	he site caused by		
impacts	stormwater flow.					

Operation
Stormwater Runoff

Description of impact	Alteration of surface flows caused by increased stormwater runoff.						
Mitigable	High Mitigati	High Mitigation exists and will considerably reduce the significance of impacts					
Potential mitigation	Stormw Stormw into ret The run dischar Stormw and otl The na the ope	 Stormwater from erven must be attenuated on site as far as possible. Stormwater from access roads must be attenuated onsite (prior to any discharge into retention ponds). The runoff velocity of stormwater must be reduced with energy dissipaters prior to discharge into retention ponds. Stormwater management should encourage infiltration of water into the soil profile and other on site attenuation (i.e. using grass pavers etc.). The natural spring and small dam must be protected by a 10 m buffer throughout the operational phase. 					
Assessment		Without mitigation		ith mitigation			
Nature	Negative		Low Negative				
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years			
Extent	Very limited	Limited to specific isolated parts of the site	Very limited	Limited to specific isolated parts of the site			
Intensity	Medium	Natural and/or social functions and/or processes are notably altered	Low	Natural and/or social functions and/or processes are somewhat altered			
Probability	Almost certain	It is most likely that the impact will occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere			
Confidence	High						
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact			

Project Phase Impact

Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance		Minor - negative	Negligi	ble - negative
Comment on significance	generate incre foundations for dam. The dam dam should be	ent will result in an increase in the ased volumes of stormwater run houses may increase sub-surface water is of high quality, and posternishmised. The magement of stormwater should increase in the asset in the ase in t	off. Hardened surfo ce flows towards the ollutants from storm	ace and establishment of e natural spring and small water runoff entering the
Cumulative impacts	Without mitigo compromised.	ation this impact could result	in the water qua	ality of the dam being

Project Phase	Operation				
Impact	Landscape Connectivity				
Description of	Cut-off of natural dispersal and foraging movement by animals, impacts on suitable link				
impact		or important corridor, fragmentation of ecological infrastructure			
Mitigable	Low				
Potential mitigation	 Incorporate portions of the secondary vegetation area to form part of the open space system within the development, which will link up with the forest area. The proposed open space system should correspond to the position of indigenous vegetation. An open space management system should be developed to formalize such steps for forest protection. 				
		f a suitable dimension to allow fo			
Assessment	.55 5	Without mitigation		With mitigation	
Nature	Negative	<u> </u>	Negative	-	
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years	
Extent	Limited	Limited to the site and its	Very	Limited to the site and its	
		immediate surroundings	limited	immediate surroundings	
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Low	Natural and/or social functions and/or processes are somewhat altered	
Probability	Probable	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	High	Substantive supportive data exists to verify the assessment	Medium	Determination is based on common sense and general knowledge	
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Medium	The affected environment will only recover from the impact with significant intervention	
Resource irreplaceability	Medium	The resource is damaged irreparably but is represented elsewhere	Low	The resource is not damaged irreparably or is not scarce	
Significance		Minor - negative		egligible - negative	
Comment on significance	The proposed development layout makes provision for a 10m buffer along the forest margin and also incorporated portions of the secondary vegetation area to form part of the open space system within the development, which will link up with the forest area.				

Cumulative	The impact would result in insignificant cumulative effects
impacts	

Project Phase	Operation				
Impact	Eradication of Alien Vegetation				
Description of impact	Impacts on biodiversity / natural habitats / increased fire risk				
Mitigable	High Mitigation exists and will considerably reduce significance of impacts				
Potential mitigation	 High Mitigation exists and will considerably reduce significance of impacts All invasive alien plants should be completely cleared from the property, and where a tree or bush cover is desired, replaced with suitable indigenous species. Rehabilitation of disturbed areas, as well as previously invaded areas, should promote establishment of site-appropriate indigenous species. A suitable planting list of trees and shrubs must be compiled and incorporated into the Landscape Plan. An Alien Control Plan should be compiled to systematically remove and control alien plant species. Follow-up operations must be done. Minimise disturbance to the natural vegetation using low impact manual labour techniques. 				
_		hazard on site	ı		
Assessment		ut mitigation	With mitigation		
Nature Duration	Negative Permanent	Impact may be permanent, or in excess of 20 years	Positive Brief	Impact will not last longer than 1 year	
Extent	Limited	Limited to the site and its immediate surroundings	Limited	Limited to the site and its immediate surroundings	
Intensity	Very high	Natural and/ or social functions and/ or processes are majorly altered	Medium	Natural and/or social functions and/or processes are notably altered	
Probability	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge	
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Medium	The affected environment will only recover from the impact with significant intervention	
Resource	Not relevant		Not		
irreplaceability	110-1-	no continuo	relevant	Madayata pasitira	
Significance Comment on	High - negative Moderate - positive				
significance	An ongoing alien invasive management programme should take place on site. This will protect riparian habitats downslope from degradation and could potentially be the biggest contribution to maintaining and protecting biodiversity on site and in surrounding areas.				
Cumulative impacts	Without mitigation the development would not be meeting design guidelines enforced by the municipality. Specifically design guidelines for the local area.				

Project Phase	Operation				
Impact	Formal gardens				
Description of	Habitat loss for terrestrial wildlife, fragmentation of ecological corridor				
impact					
Mitigable	Low Mitigation will slightly reduce the significance of impacts				
Potential					
mitigation	indigenous vegetation.				
	 All alien invasive plants must be removed from the site on an on-going basis. Investing landowners within the proposed development should be encouraged to 				
		ng exotic plants in favour o			
		g must be done with locall	y occurring in		
Assessment		ut mitigation		With mitigation	
Nature	Negative	1	Positive		
Duration	Brief	Impact will not last longer than 1 year	Permanent	Impact may be permanent, or in excess of 20 years	
Extent	Limited	Limited to the site and	Very	Limited to specific isolated	
		its immediate	limited	parts of the site	
		surroundings			
Intensity	Negligible	Natural and/ or social	Very low	Natural and/ or social	
		functions and/ or		functions and/ or processes	
		processes are negligibly		are slightly altered	
B 1 1 1111	11. 11. 11. 1	altered	A		
Probability	Highly unlikely /	Expected never to	Almost	It is most likely that the impact	
	None	happen	certain / Highly	will occur	
			probable		
Confidence	Medium	Determination is based	Medium	Determination is based on	
Communica	Modiom	on common sense and	Modiom	common sense and general	
		general knowledge		knowledge	
Reversibility	Medium	The affected	Not		
,		environment will only	relevant		
		recover from the			
		impact with significant			
		intervention			
Resource	Low	The resource is not	Not		
irreplaceability		damaged irreparably	relevant		
		or is not scarce			
Significance	Negligible - negative Minor - positive				
Comment on	With mitigation the impact is likely to have more beneficial impact to retaining natural				
significance	biodiversity, than without mitigation.				
Cumulative	Without mitigation this impact could result in the spread of alien invasive plants and the loss				
impacts	of indigenous vegetation.				

Impacts foreseen during the Construction Phase for Alternative 2 (19 Residential Stands):

Project Phase	Construction		
Impact	Clear	Clearance of vegetation for the construction of the dwelling and associated	
		infrastructure	
Description of	Loss of sensitive vegetation, habitat loss for terrestrial wildlife, mortalities to various		
impact	species unable to evade the disturbance, loss of viable propagules, fragmentation of		
	ecological infrastructure		
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts	

Potential mitigation	 Wherever there are sections of undisturbed natural habitat within the development area, they should not be impacted by the building activities and should be conserved as small islands of natural resources for the small wildlife of the area. the removal and translocation of protected plants if found should be undertaken prior to construction clearing activities. A permit is required prior to removal. Protected plants must either be moved to a safer, no-go area on the property or taken to a nursery for temporary storage until rehabilitation takes place. Access by heavy machinery should be limited on the site. Only areas necessary for the development footprint should be cleared and the remainder of the property should be left natural. Laydown areas for construction materials must be contained within the clearing footprint of the proposed development. A 10-meter buffer zone must be retained along the base of the slope to protect the forest margin. 					
Assessment		Without mitigation		With mitigation		
Nature	Negative		Low negative			
Duration	Permanent	Impact may be permanent,	Permanent	Impact may be permanent,		
		or in excess of 20 years		or in excess of 20 years		
Extent	Limited	Limited to the site and its	Very	Limited to the site and its		
11	A 4 = =1°	immediate surroundings	limited	immediate surroundings		
Intensity	Medium	Natural and/or social	Low	Natural and/or social		
		functions and/or processes are notably altered		functions and/or processes are somewhat altered		
Probability	Certain /	There are sound scientific	Probable	Has occurred here or		
Flobability	Definite	reasons to expect that the	TTODADIE	elsewhere and could		
		impact will definitely occur		therefore occur		
Confidence	High	Substantive supportive data	Medium	Determination is based on		
Communica	111911	exists to verify the assessment	Mediom	common sense and general		
		Oxists to vointy into assessment		knowledge		
Reversibility	Low	The affected environment will	Medium	The affected environment		
,		not be able to recover from		will only recover from the		
		the impact - permanently		impact with significant		
		modified		intervention		
Resource	High	The resource is damaged	Low	The resource is not		
irreplaceability		irreparably but is represented		damaged irreparably or is		
		elsewhere		not scarce		
Significance		Minor - negative		egligible - negative		
Comment on significance	The forested area to the north of the development is excluded from the proposed development and will not be directly affected. Additional Private Open Space will not significantly mitigate the disturbance of vegetation as it will be in the transformed/lawned areas. Rehabilitation of these areas may offset loss of secondary vegetation. Some additional secondary vegetation near the forest margins will be retained with fewer stands					

Project Phase		Construction					
Impact		Loss of secondary vegetation within endangered ecosystem					
Description of	Loss of hab	itat on site (within the proposed development footprint), modification of					
impact	ecological	ecological processes, spillover effects into surrounding areas due mostly to secondary					
	impacts suc	impacts such as boundary disturbance and alien invasive species spread.					
Mitigable	Medium Mitigation exists and will notably reduce significance of impacts						
Potential	Access to forested areas during construction must not be permitted by any						
mitigation	construction personnel. These areas must be fenced off and no access allowed.						
	• Com						
	prior	ities and areas and provides a programme for long-term control.					

The impact would result in insignificant cumulative effects

Cumulative impacts

•	Undertake regular monitoring to detect alien invasions early so that they can be
	controlled, as per the Alien Management Plan.

•	Rehabilitation	of	disturbed	areas,	as	well	as	previously	invaded	areas,	should
	promote estab	olish	nment of si	te-appr	opi	riate i	indi	genous spe	ecies.		

	Rehabilitation of disturbed areas, as well as previously invaded areas, should					
	pron	promote establishment of site-appropriate indigenous species.				
Assessment		Without mitigation	With mitigation			
Nature	Negative		Low negativ			
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years		
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings		
Intensity	Medium	Natural and/or social functions and/or processes are notably altered	Low	Natural and/or social functions and/or processes are somewhat altered		
Probability	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur		
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment		
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Medium	The affected environment will only recover from the impact with significant intervention		
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce		
Significance		Minor - negative	N	egligible - negative		
Comment on significance	The vegetation type (Garden Route Shale Fynbos) is listed as Endangered. All upland areas of the site on the steep slopes are covered with forest that matches the description for Southern Afrotemperate Forest, which is not threatened, but is separately listed as protected under the National Forests Act. The forest areas on site fall within a CBA1. These forested areas are completely excluded from the proposed development (both options) and are not directly affected. The only remaining non-forest vegetation on site is considered to be secondary. However, on the basis that no legal soil disturbance has occurred during the preceding 10 years, it is legally considered to be natural vegetation that is within an Endangered ecosystem. It is, however, not representative of this vegetation unit and, being secondary, is not considered to be irreplaceable. Additional Private Open Space will not significantly mitigate the disturbance of vegetation as it will be in the transformed/lawned areas. Rehabilitation of these areas may offset loss of secondary vegetation. Some additional secondary vegetation near the					
Cumulative impacts	forest margi	ns will be retained with fewer sta would result in insignificant cumu	nds.	, 5		

Project Phase		Construction					
Impact		Loss of individuals of protected tree species					
Description of	Loss of habite	at on site (within the proposed development footprint), disturbance or loss of					
impact	protected tre	ees.					
Mitigable	Medium	Medium Mitigation exists and will notably reduce significance of impacts					
Potential	Retain existing large trees within proposed development.						
mitigation	If any trees need to be removed or pruned then a permit is required, according						
	to the	to the National Forests Act.					
		additional milkwoods in the development as part of the final landscaping.					
	These	can be planted along with other appropriate coastal forest species, but the					

	proportions and composition should reflect habitat that would have occurred naturally at this site.				
Assessment		Without mitigation	With mitigation		
Nature	Negative		Low negative	Э	
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Long Term	Impact will last between 16 and 30 years	
Extent	Very limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings	
Intensity	High	Natural and/ or social functions and/ or processes are significantly altered	Low	Natural and/or social functions and/or processes are somewhat altered	
Probability	Probable	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge	
Reversibility	Partly reversible	The impact is reversible but more intense mitigation measures are required	Partly reversible	The impact is reversible but more intense mitigation measures are required	
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce	
Significance		Minor - negative		egligible - negative	
Comment on significance	The tree species affected is <i>Sideroxylon inerme</i> , protected under the National Forests Act. A total of 4 individuals were seen on site, all of them relatively large individuals. The species is widespread but is a key and dominant component of coastal forests in the Garden Route. Additional Private Open Space will not significantly mitigate the disturbance of protected species as it will be in the transformed/lawned areas. Rehabilitation of these areas may offset loss of secondary vegetation.				
Cumulative impacts		vould result in insignificant cumu	lative effects		

Project Phase	Construction			
Impact	Loss of habitat for listed threatened animal species			
Description of	Loss of habitat for threatened plant and animal species, spillover effects into surrounding			
impact	areas due mostly to secondary impacts such as dust deposition and alien invasive species spread.			
Mitigable	Medium Mitigation exists and will notably reduce significance of impacts			
Potential mitigation	 Medium Mitigation exists and will notably reduce significance of impacts Protect natural forest vegetation adjacent to the proposed development site. Rehabilitate and improve the small dam on site, including introducing pond margin vegetation typical of mountain ponds in forested areas. This will provide good habitat for various frogs, including potentially Afrixalus knysnae. Forest habitats on the upland, steeply-sloping part of the site, have high biodiversity and conservation value, and are designated as sensitive. These areas must not be affected by the proposed development. A buffer zone should be retained along the base of the slope to protect the forest margin. For example, steps should be taken to rehabilitate these areas and encourage growth of species, such as Pterocelastrus tricuspidatus and Sideroxylon inerme, that are mesic and fire-resistant. 			

		pen space management system	n should be de	eveloped to formalize steps for		
	forest protection.					
Assessment		Without mitigation		With mitigation		
Nature	Negative		Low negative			
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years		
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings		
Intensity	High	Natural and/ or social functions and/ or processes are significantly altered	Low	Natural and/or social functions and/or processes are somewhat altered		
Probability	Probable	Has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere		
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge		
Reversibility	Partly reversible	The impact is reversible but more intense mitigation measures are required	Partly reversible	The impact is reversible but more intense mitigation measures are required		
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce		
Significance		Minor - negative	N	egligible - negative		
Comment on significance	 There is habitat on site that is suspected habitat for threatened plant and animal species. This is the forest habitat, which is outside the proposed development footprint and will not be affected by the proposed development. The species that could potentially occur within this habitat are as follows: Knysna Warbler (Vulnerable) has a moderate probability of occurring in forest margin areas. Crowned Eagle (Near Threatened) - the forests on site may constitute part of the general foraging range but it is unlikely that they are resident on site, or are dependent on it. Tunnelling Dung Beetle (Endangered). The type locality of the species is forest habitats in the Keurboomstrand area. Small antelope (Vulnerable). There is a moderate to high probability of it occurring in the forests on site. Additional Private Open Space will not significantly mitigate the disturbance of habitat as it will be in the transformed/lawned areas. Rehabilitation of these areas 					
Cumulative		offset loss of habitat in secondar		e overall habitat available for		
impacts	The potential impact affects a negligible proportion of the overall habitat available for these species and will not directly affect any individuals.					

Project Phase	Construction					
Impact		Waste Pollution				
Description of	Pollutio	n of buffer zones and natural areas caused by waste generated by the				
impact		construction process.				
Mitigable	High	High Mitigation exists and will considerably reduce significance of impacts				
Potential mitigation	 All construction waste generated on-site during construction must be adequately managed. Separation and recycling of different waste materials should be supported. All construction waste materials must be collected and disposed of at a suitable waste facility. 					

	 No dumping of construction material within natural areas or buffer zones may take place. The buffer and "no-go" areas must be monitored on a weekly basis to clean-up any waste that may have been blown from the construction site. Adequate sanitary facilities and ablutions must be provided for all personnel throughout the project area. Use of these facilities must be enforced (these facilities must be kept clean so that they are a desired alternative to the surrounding vegetation). 					
Assessment		Without mitigation		With mitigation		
Nature	Negative		Low negative	e		
Duration	Short term	Impact will last between 1 and 5 years	Brief	Impact will not last longer than 1 year		
Extent	Very limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings		
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/or social functions and/or processes are slightly altered		
Probability	Likely	The impact may occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere		
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment		
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact		
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce		
Significance		Negligible - negative		egligible - negative		
Comment on significance	Construction activities are likely to generate significant quantities of solid waste that could pollute buffer zones and natural areas. In addition, the high numbers of construction workers present on site will generate a significant amount of human waste, which could					

Project Phase	Construction
Impact	Construction Vehicles
Description of	Pollution caused by the operation of vehicles and heavy machinery.
impact	
Mitigable	High Mitigation exists and will considerably reduce significance of impacts
Potential mitigation	 Construction activities must be confined to clearly demarcated areas so as to prevent unnecessary disturbance the surrounding environment. No vehicles are to park or operate within "no-go" areas. Excavators and all other machinery and vehicles must be checked for oil and fuel leaks daily. No machinery or vehicles with leaks are permitted to work on site. No fuel storage, refuelling, vehicle maintenance or vehicle depots to be allowed near natural spring and dam. Refuelling and fuel storage areas, and areas used for the servicing or parking of vehicles and machinery, must be located on impervious bases and should have bunds around them (sized to contain 110 % of the tank capacity) to contain any possible spills. These areas must not be located within any natural drainage areas or preferential flow paths and must be located outside of buffer zones.

The impact would result in insignificant cumulative effects.

Cumulative impacts

pollute the environment.

	The contractors used for the project should have spill kits available to ensure that any fuel or oil spills are clean-up and discarded correctly.			
Assessment	Griy	Without mitigation	With mitigation	
Nature	Negative	g	Low negative	
Duration	Short term	Impact will last between 1 and 5 years	Brief	Impact will not last longer than 1 year
Extent	Very limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/or social functions and/or processes are slightly altered
Probability	Likely	The impact may occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance		legligible - negative		egligible - negative
Comment on significance	Operation of vehicles could result in spillages or leaks of hydrocarbons (fuel and oil) and could lead to unnecessary disturbance of natural areas.			
Cumulative impacts	The impact would result in insignificant cumulative effects.			

Project Phase	Construction					
Impact	Disturbance / removal of topsoil					
Description of	Disturbance of topsoil, potential soil erosion and the loss of topsoil			oss of topsoil		
impact						
Mitigable	High Mit	igation exists and will considerably re	duce the significar	nce of impacts		
Potential mitigation	pipkno	pipelines) should be suitably rehabilitated without delay. Failure to do so will have a knock-on effect on biodiversity in the form of an increase in wind erosion, soil exposure and a loss of the soil micro-organisms that are essential for plant growth. Organic matter, such as roots and humus/topsoil should be removed from the footprint of structures and stockpiled separately for landscaping purposes. The stockpiling of topsoil for use in rehabilitation is required. Stockpiles must not exceed 1.5m in height, must be covered with shade cloth or similar, to prevent erosion and any invasive alien species that begin to grow within it must be removed. Soil disturbance during the removal of alien invasive plants must be minimised as much as possible. The site must be stabilised where necessary using available materials, where possible. It is recommended that exposed soils are covered with wood chips, and tree branches used to create berms. Any cut alien vegetation on site can be				
Assessment		Without mitigation	With	n mitigation		
Nature	Negative	-	Low Negative			
Duration	Short	Impact will last between 1 and 5	Brief	Impact will not last		
	term	years		longer than 1 year		

Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to specific isolated parts of the site		
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/ or social functions and/ or processes are slightly altered		
Probability	Almost certain	It is most likely that the impact will occur	Likely	The impact may occur		
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment		
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	High	The affected environmental will be able to recover from the impact		
Resource irreplaceabilit y	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce		
Significance		Negligible - negative Minor - negative				
Comment on significance	Clearing areas of the site in preparation for construction will expose bare soil which may lead to the potential loss of topsoil through runoff and incorrect storage. This is not envisaged to be a significant impact with mitigation measures in place. Topsoil can be reused on site for rehabilitation purposes.					
Cumulative impacts	Without mi by stormw	tigation this impact could result in po ater flow.	tential erosion dow	nhill of the site caused		

Project Phase	Construction					
Impact	Noise pollution					
Description of impact		Noise caused by machinery and staff				
Mitigable	Low	Low Mitigation does not exist; or mitigation will slightly reduce the significance of impacts				
Potential mitigation	 Construction activities must only take place during normal working times between 07:00-17:00 on weekdays. Machinery may be fitted with silences to dampen noise. Staff must be reminded that they are working within a residential area and noise levels must be kept low. 					
Assessment	Without mitigation With mitigation			With mitigation		
Nature	Negative		Negative			
Duration	Brief	Impact will not last longer than 1 year	Brief	Impact will not last longer than 1 year		
Extent	Limited	Limited to the site and its immediate surroundings	Limited	Limited to the site and its immediate surroundings		
Intensity	Very low	Natural and/ or social functions and/ or processes are slightly altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered		
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Almost certain / Highly probable	It is most likely that the impact will occur		
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge		

Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact	
Resource	Not relevant		Not		
irreplaceability			relevant		
Significance	Minor - negative			legligible - negative	
Comment on	Some extent of noise pollution during construction is expected; however, with mitigation				
significance	the impact will be reduced.				
Cumulative	No cumulative impacts exist.				
impacts					

Description of impact Visual & aesthetic consequences of the proposed project	nt must be im footprint, act on the in phase to trusion. Introduction vegetation and common
Mitigable Medium Mitigation exists and will notably reduce significance of in Potential mitigation The Architectural Design Guidelines proposed for the development adopted to mitigate the colours, heights, disturbance areas, maximum vegetation, etc, which will all contribute to a smaller visual important important to the necessary measures be implemented during the construction protect the natural vegetation, to control the noise, dust and visual into the Appoint a Landscape consultant to recommend and implement the information of an indigenous landscape plan to protect the existing indigenous and to prepare a landscape plan for implementation in the private and	nt must be im footprint, act on the in phase to trusion. Introduction vegetation and common
Mitigation exists and will notably reduce significance of in Potential mitigation • The Architectural Design Guidelines proposed for the development adopted to mitigate the colours, heights, disturbance areas, maximum vegetation, etc, which will all contribute to a smaller visual important important to the necessary measures be implemented during the construction protect the natural vegetation, to control the noise, dust and visual into the Appoint a Landscape consultant to recommend and implement the information of an indigenous landscape plan to protect the existing indigenous and to prepare a landscape plan for implementation in the private and	nt must be im footprint, act on the n phase to trusion. introduction vegetation and common
 The Architectural Design Guidelines proposed for the development adopted to mitigate the colours, heights, disturbance areas, maximum vegetation, etc, which will all contribute to a smaller visual important important the necessary measures be implemented during the construction protect the natural vegetation, to control the noise, dust and visual into the Appoint a Landscape consultant to recommend and implement their of an indigenous landscape plan to protect the existing indigenous and to prepare a landscape plan for implementation in the private and 	nt must be im footprint, act on the n phase to trusion. introduction vegetation and common
 mitigation adopted to mitigate the colours, heights, disturbance areas, maximum vegetation, etc, which will all contribute to a smaller visual important important and scape. The necessary measures be implemented during the construction protect the natural vegetation, to control the noise, dust and visual into Appoint a Landscape consultant to recommend and implement their of an indigenous landscape plan to protect the existing indigenous and to prepare a landscape plan for implementation in the private an 	m footprint, act on the n phase to trusion. introduction vegetation and common
vegetation, etc, which will all contribute to a smaller visual important landscape. The necessary measures be implemented during the construction protect the natural vegetation, to control the noise, dust and visual into Appoint a Landscape consultant to recommend and implement the irrof an indigenous landscape plan to protect the existing indigenous and to prepare a landscape plan for implementation in the private an	act on the n phase to trusion. introduction vegetation and common
Implement external lighting restrictions and guidelines.	etween 1
Assessment Without mitigation With mitigation	atween 1
Nature Negative Negative	etween 1
Duration Short term Impact will last Short term Impact will last be	, ,
between 1 and 5 years and 5 years	
Extent Limited Limited to the site and Limited Limited to the site	
its immediate immediate surrour	ndings
surroundings lntensity Low Natural and/or social Very low Very low	ocial
functions and/or functions and/or	
processes are are slightly altered	•
somewhat altered	-
Probability Certain / Definite There are sound scientific reasons to expect that the impact will definitely occur	occur
ConfidenceHighSubstantive supportive data exists to verify the assessmentHigh exists to verify the assessmentSubstantive supportive exists to verify the assessment	
Reversibility Medium The affected environment will only recover from the impact with significant intervention The affected environment will only will be able to recover from the impact with significant intervention	
Resource Not relevant Not	
irreplaceability relevant	
Significance Minor - negative Negligible - negative	
Comment on significance The proposal is sensitive towards the character of the area and attempts to unique sense of place that will blend in and compliment the ambience of the sarea.	

Cumulative	No cumulative impacts exist.
impacts	

Project Phase	Construction				
Impact	Employment				
Description of	Empowerment of the local community members living in the area relating to temporary				
impact	employment opportunities				
Mitigable	Medium	Mitigation only exists to e	ensure that the	e positive impact is followed	
		through.			
Potential			ommunicatio	n channels to ensure social	
mitigation	representation				
		our and source local mate	erials as far a		
Assessment		ıt mitigation		With mitigation	
Nature	Negative		Positive		
Duration	Short term	Impact will last	Short term	Impact will last between 1	
		between 1 and 5 years		and 5 years	
Extent	Local	Extending across the	Local	Extending across the site	
		site and to nearby		and to nearby settlements	
		settlements			
Intensity	Low	Natural and/ or social	Low	Natural and/ or social	
		functions and/ or		functions and/ or processes are somewhat altered	
		processes are		are somewhat difered	
Probability	Dava / incorrelegible	somewhat altered	Almost	It is no out likely the out the o	
Probability	Rare / improbable	Conceivable, but only in extreme	certain /	It is most likely that the impact will occur	
		circumstances, and/or	Highly	Impact will occor	
		might occur for this	probable		
		project although this	probable		
		has rarely been known			
		to result elsewhere			
Confidence	Medium	Determination is based	Medium	Determination is based on	
		on common sense and		common sense and	
		general knowledge		general knowledge	
Reversibility	Not relevant		Not		
			relevant		
Resource	Not relevant		Not		
irreplaceability			relevant		
Significance	Negligib	ole - negative		legligible - positive	
Comment on				there is a low difference in	
significance				owever, as the impact would	
			ployed during	construction, mitigation is	
	recommended to e				
Cumulative	Minor uplittment for	the local community.			
impacts					

Impacts foreseen during the Operational Phase for Alternative 2 (19 Residential Stands):

Project Phase	Operation
Impact	Visual / Sense of place

Description of impact	Visual impacts of structures / aesthetic consequences due to incorrect or excessive				
Mitigable	lighting, especially outdoor lighting Medium Mitigation exists and will notably reduce significance of impacts				
Potential	Municipal by-laws need to be adhered to.				
mitigation				reas with suitable indigenous	
minganon	vegetation.	1 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -			
	 Systematic removal and follow-up operations of invasive alien plants. 				
	Adhere to Architectural Design Guidelines and Landscape Plan.				
	Create a 10m wide buffer between the development and the Keurboom Road.				
	This strip of land will be densely vegetated to obscure the development.				
Assessment	Withou	ut mitigation		With mitigation	
Nature	Negative		Negative Lov	W	
Duration	Permanent	Impact may be	Brief	Impact will not last longer	
		permanent, or in		than 1 year	
		excess of 20 years			
Extent	Limited	Limited to the site and	Limited	Limited to the site and its	
		its immediate		immediate surroundings	
		surroundings			
Intensity	Low	Natural and/or social	Very low	Natural and/or social	
		functions and/or		functions and/or processes	
		processes are		are slightly altered	
		somewhat altered			
Probability	Probable	Has occurred here or	Rare /	Conceivable, but only in	
		elsewhere and could	improbable	extreme circumstances,	
		therefore occur		and/or might occur for this project although this has	
				rarely been known to	
				result elsewhere	
Confidence	Medium	Determination is based	Medium	Determination is based on	
Commence	Mediom	on common sense and	Mediom	common sense and	
		general knowledge		general knowledge	
Reversibility	Medium	The affected	High	The affected environmental	
,,		environment will only	19.1	will be able to recover from	
		recover from the		the impact	
		impact with significant		·	
		intervention			
Resource	Not relevant		Not		
irreplaceability			relevant		
Significance		r - negative		egligible - negative	
Comment on				ut it provides a level of security	
significance	,		•	out should be implemented in	
	a way which does	not cause negative impac	cts to neighbou	urs.	
	l				
		· · · · · · · · · · · · · · · · · · ·	are incorporate	ed into the design to enhance	
	the quality of the n				
Cumulative				design guidelines enforced	
impacts	by the municipality. Specifically design guidelines for the local area.				

Project Phase	Operation
Impact	Stormwater Management
Description of	Accelerated erosion / pollution into sub-surface water.
impact	
Mitigable	High Mitigation exists and will considerably reduce the significance of impacts
Potential	The storm water drainage system must be adhered to, and the system should lead
mitigation	runoff water away from sensitive areas to prevent soil erosion.
	 Use rainwater collection tanks to serve as a retention vessel in downpours.

	 Driveways can be constructed from grass blocks to allow for effective retarding of surface flow and facilitate percolation. 			
Assessment	Without mitigation		With mitigation	
Nature	Negative		Low Negative	
Duration	Short term	Impact will last between 1 and 5 years	Brief	Impact will not last longer than 1 year
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to specific isolated parts of the site
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/ or social functions and/ or processes are slightly altered
Probability	Almost certain	It is most likely that the impact will occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	High	The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance		gligible - negative		nor - negative
Comment on significance	The development portion of the site is flat with no gradient along its southern boundary and has no defined drainage discharge points. The existing flat and permeable conditions allow for natural infiltration.			
Cumulative impacts	Without mitigation this impact could result in potential erosion on the site caused by stormwater flow.			

Project Phase	Operation				
Impact		Stormwater Runoff			
Description of	Al:	teration of surface flows caused	by increased storm	water runoff.	
impact					
Mitigable	High Mitigati	on exists and will considerably re	educe the significar	nce of impacts	
Potential	Stormw	rater from erven must be attenue	ated on site as far o	as possible.	
mitigation	 Stormwater from access roads must be attenuated onsite (prior to any discharge into retention ponds). The runoff velocity of stormwater must be reduced with energy dissipaters prior to discharge into retention ponds. Stormwater management should encourage infiltration of water into the soil profile and other on site attenuation (i.e. using grass pavers etc.). The natural spring and small dam must be protected by a 10 m buffer throughout the operational phase. No stormwater should be put into this dam as the water is of high quality 				
Assessment	Without mitigation With mitigation				
Nature	Negative		Low Negative		
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years	

Extent	Very limited	Limited to specific isolated parts of the site	Very limited	Limited to specific isolated parts of the site
Intensity	Low	Natural and/or social functions and/or processes are somewhat altered	Very low	Natural and/or social functions and/or processes are slightly altered
Probability	Almost certain	It is most likely that the impact will occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance		Minor - negative		ble - negative
Comment on significance	The development will result in an increase in the area of paved/hardened surfaces. This will generate increased volumes of stormwater runoff. Hardened surface and establishment of foundations for houses may increase sub-surface flows towards the natural spring and small dam. The dam water is of high quality, and pollutants from stormwater runoff entering the dam should be minimised. A lower density development may result in less runoff with fewer hardened surfaces. Adequate management of stormwater should therefore effectively minimise the intensity of this impact.			
Cumulative impacts	Without mitigation this impact could result in the water quality of the dam being compromised.			

Project Phase		Operation				
Impact		Landscape Connectivity				
Description of	Cut-off of n	atural dispersal and foraging mo	vement by ar	nimals, impacts on suitable link		
impact		or important corridor, fragmento	ation of ecolog	gical infrastructure		
Mitigable	Low	Mitigation will slightly reduce th	e significance	of impacts		
Potential mitigation	spac The property steps An consteps Wildle	 space system within the development, which will link up with the forest area. The proposed open space system should correspond to the position of indigenous vegetation. An open space management system should be developed to formalize such steps for forest protection. 				
Assessment		Without mitigation With mitigation				
Nature	Negative Negative					
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years		
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to the site and its immediate surroundings		

Intensity Probability	Low Probable	Natural and/or social functions and/or processes are somewhat altered Has occurred here or	Very low Rare /	Natural and/or social functions and/or processes are slightly altered Conceivable, but only in
,		elsewhere and could therefore occur	improbable	extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Confidence	High	Substantive supportive data exists to verify the assessment	Medium	Determination is based on common sense and general knowledge
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	Medium	The affected environment will only recover from the impact with significant intervention
Resource irreplaceability	Medium	The resource is damaged irreparably but is represented elsewhere	Low	The resource is not damaged irreparably or is not scarce
Significance	Minor - negative Negligible - negative			egligible - negative
Comment on significance	The proposed development layout makes provision for a 10m buffer along the forest margin and also incorporated portions of the secondary vegetation area to form part of the open space system within the development, which will link up with the forest area. Additional Private Open Space may allow for wildlife corridors if managed correctly.			
Cumulative impacts	The impact would result in insignificant cumulative effects			

Project Phase	Operation					
Impact	Eradication of Alien Vegetation					
Description of impact	Imp	Impacts on biodiversity / natural habitats / increased fire risk				
Mitigable	High	Mitigation exists and will o	considerably r	educe significance of impacts		
Potential mitigation	 All invasive alien plants should be completely cleared from the property, and where a tree or bush cover is desired, replaced with suitable indigenous species. Rehabilitation of disturbed areas, as well as previously invaded areas, should promote establishment of site-appropriate indigenous species. A suitable planting list of trees and shrubs must be compiled and incorporated into the Landscape Plan. An Alien Control Plan should be compiled to systematically remove and control alien plant species. Follow-up operations must be done. Minimise disturbance to the natural vegetation using low impact manual labour techniques. Reduce fire hazard on site 					
Assessment	Without mitigation With mitigation					
Nature	Negative		Positive			
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Brief	Impact will not last longer than 1 year		
Extent	Limited	Limited to the site and its immediate surroundings	Limited	Limited to the site and its immediate surroundings		
Intensity	Very high	Natural and/ or social functions and/ or processes are majorly altered	Medium	Natural and/or social functions and/or processes are notably altered		

Probability	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Medium	The affected environment will only recover from the impact with significant intervention
Resource	Not relevant		Not	
irreplaceability			relevant	
Significance	High	- negative	I	Moderate - positive
Comment on	An ongoing alien invasive management programme should take place on site. This will			
significance	protect riparian habitats downslope from degradation and could potentially be the biggest			
	contribution to maintaining and protecting biodiversity on site and in surrounding areas.			
Cumulative	Without mitigation the development would not be meeting design guidelines enforced by			
impacts	the municipality. Sp	ecifically design guidelines	for the local o	area.

Project Phase	Operation				
Impact	Formal gardens				
Description of impact	Habitat loss for terrestrial wildlife, fragmentation of ecological corridor				
Mitigable	Low	Mitigation will slightly redu	uce the signifi	cance of impacts	
Potential mitigation	 Areas that are not required for development purposes should remain natural with indigenous vegetation. All alien invasive plants must be removed from the site on an on-going basis. Investing landowners within the proposed development should be encouraged to avoid planting exotic plants in favour of locally indigenous plants. Landscaping must be done with locally occurring indigenous vegetation. 				
Assessment		ut mitigation		With mitigation	
Nature	Negative		Positive		
Duration	Brief	Impact will not last longer than 1 year	Permanent	Impact may be permanent, or in excess of 20 years	
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Limited to specific isolated parts of the site	
Intensity	Negligible	Natural and/ or social functions and/ or processes are negligibly altered	Very low	Natural and/ or social functions and/ or processes are slightly altered	
Probability	Highly unlikely / None	Expected never to happen	Almost certain / Highly probable	It is most likely that the impact will occur	
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge	
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	Not relevant		

Resource	Low	The resource is not	Not	
irreplaceability		damaged irreparably	relevant	
		or is not scarce		
Significance	Negligible - negative Minor - positive			Minor - positive
Comment on	With mitigation the impact is likely to have more beneficial impact to retaining natural			
significance	biodiversity, than without mitigation.			
Cumulative	Without mitigation this impact could result in the spread of alien invasive plants and the loss			
impacts	of indigenous vegetation.			