Eco Route
ENVIRONMENTAL CONSULTANCY
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IMPACT AND RISK ASSESSMENT

PROPOSED DEVELOPMENT OF ERF 301, WHITES ROAD, HOEKWIL (WILDERNESS HEIGHTS) GEORGE MUNICIPALITY, WESTERN CAPE.

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.

Mitigation Measures

Ways in which an impact can be avoided, minimised, or managed to reduce its environmental significance.

Extent of the impact - the scale of the impact	
Rating	**Definition of Rating**
Very Limited	Extending only as far as the development site area
Limited	Limited to the site and its immediate surroundings
Local	Extending across the site and to nearby settlements
Regional	The region, which may be defined in various ways, e.g. cadastral, catchment, topographic.
National	National scale or across international borders

Duration of the impact - the lifespan or length of time the impact will last	
Rating	**Definition of Rating**
Brief	Impact will not last longer than 1 year
Short term	Impact will last between 1 and 2 years
Medium Term	Impact will last between 2 and 15 years
Long Term	Impact will last more than 15 years
Permanent	Impact may be permanent, or in excess of 20 years
Very High	Natural and/ or social functions and/ or processes are severely altered

Intensity - the severity of the impact	
Rating	**Definition of Rating**
Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Low	Natural and/or social functions and/or processes are slightly altered
Medium	Natural and/or social functions and/or processes are notably altered
High	Natural and/ or social functions and/ or processes are significantly altered
Very High	Natural and/ or social functions and/ or processes are severely altered

Probability of occurrence - the probability of the impact occurring	
Rating	**Definition of Rating**
Improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Possible	Has occurred here or elsewhere and could therefore occur
Probable	It is most likely that the impact will occur
Definite	There are sound scientific reasons to expect that the impact will occur

Reversibility - the ability of the impacted environment to return to its pre-impacted state	
Rating	**Definition of Rating**
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 - the degree to which resources will be irreplaceably lost	
Rating	**Definition of Rating**
Negligible	No loss of resources
Low	Marginal loss, the resource is not damaged irreparably or is not scarce
Medium	the resource is damaged irreparably but is represented elsewhere
High	Irreparable damage and is not represented elsewhere

Confidence - the level of confidence in the assessment rating	
Low	Judgement is based on intuition
Medium	Determination is based on common sense and general knowledge
High	Substantive supportive data exists to verify the assessment

Significance - Significance of impacts are determined through a synthesis of the assessment criteria		
Rating		**Definition of Rating**
	Very high negative (-)	The impact will have highly significant effects and are unlikely to be able to be mitigated adequately
	High negative (-)	The impact will have significant effects and will require significant mitigation measures to achieve an accepted level of impact
	Medium negative (-)	The impact will have moderate negative effects and will require moderate mitigation
	Low negative (-)	The impact will have minimal effects and would require little mitigation
	Negligible	The impact will have negligible effects and would require little or no mitigation
	Low positive (+)	The impact will have minor positive effects
	Medium positive (+)	The impact will have moderate positive effects
	High positive (+)	The impact will have significant positive effects
	Very High positive (+)	The impact will have highly significant positive effects.

Impacts foreseen during the Construction Phase for Alternative A (Preferred Alternative):

Project Phase	Construction
Impact	**A direct loss of patches of habitat due to earthworks and other construction related activities.**
Description of impact	❖ The further loss and fragmentation of an already fragmented habitat, and a loss of ecotonal vegetation. ❖ A shift towards a negative change in the conservation status of the forest / thicket habitat on the site.
Mitigable	Medium | Mitigation exists and will notably reduce significance of impacts
Potential mitigation	❖ Prior to construction, the disturbance footprint of proposed developments should be clearly defined and demarcated to prevent unnecessary damage to the surrounding environment. This mitigation measure is described in the animal species report and must be followed according to the specifications in that report. o For once off deliveries, clear indications on the nearby roads should be put up to guide truck drivers to the construction site, thus avoiding divers getting lost and causing unnecessary disturbance. ❖ Prior & during construction: Weather reports must be checked daily to avoid heavy machinery and activities on the site during rainy weather. Following a rainfall event (excluding short periods of gentle, light rain), all construction on the site must cease temporarily. ❖ During construction: Erosion control measures. o Make use of silt fences and sediment barriers on the site. ▪ Silt fences should only be implemented where necessary on the site if during the construction phase erosion becomes a noteworthy problem. ▪ Straw bales and sandbags are temporary barriers that can be used on the site from the start of the construction phase to avoid and control sediment movement in areas with higher potential for runoff. o Temporary vegetation cover in areas of permanent disturbance ▪ A hydroseed mixture of native grasses and groundcovers can be used on exposed soil surfaces to provide immediate soil stabilization. Species such as *Eragrostis capensis* and *Stenotaphrun secondatum* can be used for rapid coverage. *Vicia sativa* (common vetch) is a leguminous plant that can be used in areas where construction activities have temporarily ceased in order to protect the soil. o Erosion control blankets and mats that are biodegradable (e.g., coir made from coconut fibres) can be used with native seed mixes to enhance the stabilisation of soil. These are an option in the disturbance envelope of 2m around permanent disturbance footprints on the site. ❖ During construction: Protection and re-use of topsoil. o The topsoil will be vital for the success of rehabilitation of vegetation following construction process and must therefore be treated with care. o Topsoil from vegetation on the site (excluding topsoil under invasive plants) in new excavation areas must be stripped to a depth of ca. 30cm and kept in designated piles. Topsoil piles must be suitably covered with to prevent any additional invasive species seeds from falling in and establishing in the soil. o If the SDP of a proposed development does not have enough space for the storage and protection of topsoil within the disturbance envelope, then the Contractor must identify an alternative temporary stockpile area that is already transformed and where it can easily be retrieved for post-construction rehabilitation. o The topsoil piles must be clearly labelled so that it does not mix with subsoils excavated or any other construction material for the site.

	❖ Prior planning & during construction: Minimise the disturbance area. o Dust suppression mechanisms e.g., materials and regular site maintenance (e.g., cleaning surfaces and "rounding off" a workday) is essential to reduce dust, and general pollution. o Implement phased construction to limit the extent of exposed soil at any given time. This approach reduces the area vulnerable to erosion and allows for stabilization measures to be applied progressively.			
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	Extending only as far as the development site area
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	Definite	There are sound scientific reasons to expect that the impact will occur	Definite	There are sound scientific reasons to expect that the impact will occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	Barely reversible	the impact is unlikely to be reversed even with intense mitigation measures	Barely reversible	the impact is unlikely to be reversed even with intense mitigation measures
Resource irreplaceability	Medium	the resource is damaged irreparably but is represented elsewhere	Medium	the resource is damaged irreparably but is represented elsewhere
Significance	**Medium negative (-)**		**Low negative (-)**	
Comment on significance	The proposed development will result in the permanent loss of thicket ecotonal vegetation, and small patches of forest south of Whites Road. The impact on the loss of vegetation and habitat is most severe and noticeable during the construction phase of the project due to the fact that structures placed on the site are permanent features.			

Project Phase	**Construction**	
Impact	**A direct loss of patches of species of conservation concern (SCC) and protected trees due to earthworks and other construction related activities.**	
Description of impact	❖ Fragmentation of SCC sub-populations. ❖ A shift towards a negative change in the conservation status of the SCC and a reduction in the extent of occurrence (EOO) of SCC and protected trees. ❖ A general loss of suitable habitat for SCC. ❖ A loss of genetic variation within remaining SCC stands. ❖ An increased risk of re-invasion of the site, mainly by wattles, hakeas, and pines.	
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts
Potential mitigation	❖ Prior planning & during construction: The proposed development must have a maximum disturbance envelope of 2m around the proposed development. o Prior to the commencement of construction and earth movement on the site, a plant search and rescue must be conducted of all fynbos taxa on the site (preferably with a botanist or suitably informed ECO on the site to supervise the search and rescue and provide guidance on best practice). o The rescued plants must be kept in a nursery that should preferably be set up on Erf 301. Alternatively, arrangements for a suitable nursery site should be made to keep and care for removed plants during the construction phase of the project. o The rescued plants must be planted back with the aid of the ECO or horticultural specialists within the 2m disturbance footprint around the	

	permanent disturbance footprints. This will promote the regeneration of natural vegetation around the developments and reduce the possibility of negative edge effects on the site. o Additional plants that are observed during construction within a development footprint must be rescued and added to the rescued plants in the indigenous nursery. ❖ The development may not have any additional gardening, especially lawn areas, in order to prevent negative edge effects and long-term habitat degradation. The only additional landscaping / gardening on the site should be limited to potted plants and potted beds. o Only natural fynbos and forest plant species rescued from the site must regrow around the dwelling and pods, with regular invasive plant management (checks and removal). o No kikuyu grass is allowed anywhere on Erf 301. o The owner must be wary of so-called "indigenous" gardening, as this kind of advertising is not always accurate. o Plaques celebrating some of the naturally occurring flora on the property could potentially be made on Erf 301, however this is not a requirement. ❖ Materials used during construction must be sourced and transported responsibly to minimise the risk of further introductions of new invasive plants and contamination of the site. o Install vehicle wash stations at site exits to remove soil and prevent it from being transported off-site and contributing to erosion elsewhere. o Staff must check their clothes when they enter and leave to ensure no invasive plants have been introduced or poached from the natural surrounding environment. Geophytes are at a large risk of poaching, and this is an important reason why SANBI has a list of sensitive species for plants (i.e., their identities are unknown) in South Africa. However, some LC and Near Threatened species, especially geophytes (several on Erf 301), can also be targeted by plant poachers despite not being listed as sensitive species. ❖ Driveways and parking spaces for non-heavy machinery could make use of open pavers that are planted with non-invasive grasses, like *Cynodon dactylon* (the Cape Royal variety), or as an alternative *Stenotaphrum secundatum* (Buffalo grass). ❖ If any trees need to be removed or pruned then a permit is required, according to the National Forests Act.

Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Negative	
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Medium Term	Impact will last between 2 and 15 years
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Extending only as far as the development site area
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	It is most likely that the impact will occur	Possible	Has occurred here or elsewhere and could therefore occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	Barely reversible	the impact is unlikely to be reversed even with intense mitigation measures	Barely reversible	the impact is unlikely to be reversed even with intense mitigation measures
Resource irreplaceability	Medium	the resource is damaged irreparably but is represented elsewhere	Medium	the resource is damaged irreparably but is represented elsewhere
Significance	**Low negative (-)**		**Negligible**	

Comment on significance	Erf 301 is home to SCC and protected trees (namely milkwood and cheesewood trees). The local loss of threatened and protected plant species can have potentially far-reaching impacts on the environment.

Project Phase	**Construction**			
Impact	**An indirect impact resulting in habitat degradation, and SCC loss due to construction site management.**			
Description of impact	❖ Unanticipated losses of vegetation outside of designated areas. ❖ Increased duration of negative construction impacts. ❖ Increased vulnerability to impacts within remaining habitat portions. ❖ Potential health and safety hazards on the site and in the surrounding environment. ❖ The creation of novel habitat that indigenous species cannot survive in, but where exotics and invasive plants thrive in.			
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts		
Potential mitigation	❖ During construction: All new staff must be briefed about the layout of the construction site and must be made aware of the no-go areas and fact that the surrounding environment is sensitive and must not be disturbed. ❖ During construction: Construction vehicles should be checked on a daily basis at the start of the day for leaks and other faults. o Sandbags or sawdust should be available on the site to ensure that any accidental oil or toxic material spills can be contained and stopped quickly. o Any contaminated soil on the site must be removed by a registered hazardous waste service provider (Spill Tech, Interwaste, EnviroServ etc.). o Vehicles with leaks and other problems must not be allowed to operate on the site until they have been repaired. ❖ During construction: Ongoing monitoring and clearing of invasive plants should occur. A detailed plan is not required for Erf 301, as the invasive plants on the site are minimal, and can easily be cleared. This is a requirement by law. Pine trees can be cut down as close to the ground as possible without application of herbicide. ❖ During construction: Adequate ablution must be provided and no waste dumping or burning is to be allowed. ❖ During construction: Concrete, cement, plastering, and painting must be conducted with care. ❖ During construction: Stockpiles of materials must be managed responsibly.			
Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Negative	
Duration	Long Term	Impact will last more than 15 years	Brief	Impact will not last longer than 1 year
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Extending only as far as the development site area
Intensity	Medium	Natural and/or social functions and/or processes are notably altered	Very low	Natural and/or social functions and/or processes are slightly altered
Probability	Probable	It is most likely that the impact will occur	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	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	Medium	the resource is damaged irreparably but is represented elsewhere	Medium	the resource is damaged irreparably but is represented elsewhere
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	In addition to the large and obvious construction impacts, the management of materials and staff on the site is also an important impact on the site. If managed properly, many accidents and unanticipated negative losses to the expense of the environment, as well as staff can be avoided.			

Project Phase	**Construction**			
Impact	**Loss of habitat for fauna within the footprint of the proposed houses, pods and roads due to construction related activities.**			
Description of impact	Loss of suitable habitat for fauna SCC to live, forage and breed.			
Mitigable	Medium	Mitigation exists and will reduce significance of impacts		
Potential mitigation	❖ Prior to construction, the disturbance footprint of proposed roads and houses should be clearly defined and demarcated to prevent unnecessary additional damage to the surrounding environment: o Construction netting or fencing must be used to clearly indicate construction areas. Access roads must be clearly marked so there is no confusion as to where the tracks are or how wide the road is. o Clear signs for "no-go" areas for vehicles and personnel should be placed strategically on the site and along access roads. No-go areas are anywhere outside of the direct area of influence of the construction phase. o All vehicles, construction or inspection, must only access the sites via a planned, single track access road with no additional roads, tracks to be made in the environment. Roads are to be clearly marked to prevent additional tracks or unnecessarily widening the access road. A turning area for construction vehicles should be demarcated within the existing footprint of the house. ❖ Where vegetation will be cleared to make way for construction, filled sandbags, silt socks or a silt fence must be used to reduce the intensity of water runoff and flow over the site and thereby reduce erosion potential. This should be placed around adaptive management to ensure the integrity of the system for reducing erosion. This is pertinent given the slope of the property. ❖ Protection and reuse of topsoil can be critical for the successful rehabilitation of vegetation following construction processes as it contains valuable seedbank of indigenous plants that regenerate after the soil is replaced.			
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	Extending only as far as the development site area
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	It is most likely that the impact will occur	Probable	It is most likely that the impact will occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment

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	Medium	the resource is damaged irreparably but is represented elsewhere	Medium	the resource is damaged irreparably but is represented elsewhere
Significance	**Medium negative (-)**		**Low negative (-)**	
Comment on significance	The proposed development of a residential dwelling, pods and associated access roads will result in the permanent loss of habitat space on the property. The primary development footprint where permanent infrastructure is placed and permanent loss of habitat occurs, translates to approx. 2% of the property size. Efforts to reduce this impact have already been made by means of using stilts/pylons to raise sections of the development off the ground, thereby increasing habitat availability for many SCC.			

Project Phase	**Construction**	
Impact	**Fauna and habitat negatively affected by the management of the construction site (i.e., staff, stockpiles, and equipment).**	
Description of impact	❖ Loss of habitat or harm to fauna outside of designated construction areas. ❖ Litter and pollution of natural environment. ❖ Potential health and safety hazards (for staff and fauna) on the site and in the surrounding environment.	
Mitigable	Medium	Mitigation exists and will reduce significance of impacts
Potential mitigation	❖ All new staff must be briefed about the layout of the construction site, made aware of the no-go areas and informed of the sensitive surrounding environment that is not to be disturbed. Regular site meetings should be held, during which the ECO should remind all staff of these requirements and any questions/concerns can be raised and addressed. ❖ Construction vehicles should be checked daily, prior to construction at the start of each day for leaks and other faults. o Sandbags or sawdust should be available and accessible on the site to ensure that any accidental oil spills are contained and stopped quickly. o Any contaminated soil on the site must be removed by a registered hazardous waste service provider (e.g. Spill Tech, Interwaste, EnviroServ., etc.). o Vehicles with leaks and other problems are not allowed to operate on the site until they have been repaired. ❖ No littering, waste dumping or burning is allowed on the site or in the surrounding environment. All waste is to be collected in designated bins with lids that can be secured or stored in a secure area when construction is not taking place (evenings, weekends, holidays, etc.) to prevent interference by animals (i.e. baboons). All waste is to be transported to a registered waste disposal facility off site. ❖ Adequate ablution facilities must be provided for every construction project. o Portable toilets will need to be used in remote areas like this site, and these must be placed on a level platform before construction starts within the footprint of the access roads or housing sites. o Ablution facilities must be regularly maintained and cleaned. o Refer to SHEQ guidelines for minimum toilet facilities to be provided for number of staff on site. ❖ Concrete, cement, plastering, and painting: o Mixing areas be clearly defined on the site and must be surrounded by an impermeable material (i.e. create a temporary coffer dam with sandbags and thick plastic sheeting) to prevent any runoff and absorption into the surrounding soils. o The designated mixing areas should be limited to areas that will become future hard surfaces on the site, or that are already transformed and likely to remain transformed.	

	○ No concrete and cement mixing is allowed in areas outside the site development plans (SDPs). ○ Cleaning of cement, plastering & paint equipment must be done into a designated, bunded & lined slurry sump or container to avoid contaminating the environment. ❖ All stockpiles of fine textured building materials and soils must be covered by a geotextile or plastic covering, which must also be bunded (e.g. with sandbags) when not in use. This will prevent material being lost to the environment and fauna from accessing stockpiles and possibly subjecting them to harm during construction. ❖ Any small items or building materials which can be carried away by medium-large animals (i.e. baboons) should be safely stored in containers or locked away in a designated area to prevent interference from animals, causing possible harm to them and preventing them from removing such items from site. ❖ All food waste (leftovers, bones, pips, apple cores) to be disposed of in designated bins and NOT to be disposed of in the surrounding environment within or outside the designated construction areas. Food sources serve as a major attractant for fauna and will expose them to unnecessary harm in the vicinity of the construction site. All food waste should be removed from site on a daily basis and disposed of appropriately. ❖ Construction should take place during daylight hours so that the site can be adequately monitored for fauna during work hours, and also to prevent the use of artificial lighting at night which attracts many animal species (predominantly insects and associated predators) and subjects them to the risks of construction.			
Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Negative	
Duration	Medium Term	Impact will last between 2 and 15 years	Brief	Impact will not last longer than 1 year
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Extending only as far as the development site area
Intensity	High	Natural and/ or social functions and/ or processes are significantly altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Possible	Has occurred here or elsewhere and could therefore occur	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	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	Medium	the resource is damaged irreparably but is represented elsewhere	Low	Marginal loss, the resource is not damaged irreparably or is not scarce
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	The management of materials and staff on the site is also an important impact of development. If managed properly, many accidents and unanticipated negative impacts on fauna and the surrounding environment can be avoided.			

Project Phase	Construction			
Impact	**Harm/Death of fauna, particularly invertebrates and soil dwelling mammal SCC, due to earthworks and construction related activities.**			
Description of impact	❖ Loss of threatened species and a shift towards a negative change in the conservation status of the SCC and other indigenous species affected by the development. ❖ Loss of genetic diversity from remaining fauna populations. ❖ General loss of biodiversity.			
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts		
Potential mitigation	❖ Construction should happen in phases, such that construction related activities are confined to one area at a time on the property and can be monitored for faunal impacts appropriately ❖ During construction: o Before construction commences for any new earthworks at the start of new phase, an ECO should do a walk-through of the demarcated area and access roads to look fauna with limited mobility. These animals should be removed from the demarcated area to an adjacent location, and where appropriate a Fauna Specialist contacted for assistance or guidance. Construction/Earthworks for this new phase can commence thereafter. o At any point during the day (during construction), if an animal with limited mobility is observed on site, this should be reported to the ECO and construction temporarily halted. Construction can commence once the ECO is satisfied that all such fauna are removed from the construction area. ❖ Speed limits should be imposed and monitored during construction phase, as collisions with vehicles (roadkill) pose a significant threat to many fauna species. The development site falls within a largely natural area, increasing connectivity and ultimately the diversity of fauna that may be encountered and threatened by moving vehicles. Given the narrow access roads recommended for this development, speed limits should be restricted at the discretion of the ECO to appropriate speeds to allow for driver alertness and ability to avoid collisions with fauna. Recommended speeds include 40 km/hour on main access roads with good visibility into the road verges, and 20 km/hour on smaller access roads with narrow or overgrown verges where visibility is reduced. Signs should be put up along the roads to remind people of speed limits, as well as warnings to look out for small animals on the roads. ❖ Noise must be kept to an absolute minimum during the evenings and at night to minimise all possible disturbances to nocturnal species which are more dependent on auditory signals for life processes. ❖ No trapping, killing, or poisoning of any wildlife is to be allowed and Signs must be put up to enforce this. Monitoring must take place in this regard. ❖ Any holes/deep excavations must be dug in a progressive manner and shouldn't be left open overnight. Should any holes remain open overnight they must be properly covered temporarily to ensure that no small fauna species fall in. Holes must be subsequently inspected for fauna prior to backfilling.			
Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		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	Extending only as far as the development site area
Intensity	Medium	Natural and/or social functions and/or processes are notably altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Probable	It is most likely that the impact will occur	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	Partly reversible	The impact is reversible but more intense mitigation measures are required	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	**Low negative (-)**		**Negligible**	
Comment on significance	Fauna may occur on site and be killed or seriously harmed during construction related activities. Cryptic and ground-dwelling species, like the golden mole SCC, are difficult to detect and are limited in their mobility rendering them vulnerable to earthmoving and construction activities.			

Project Phase	**Construction**			
Impact	**Fragmentation of habitats**			
Description of impact	Cut-off of natural dispersal and foraging movement by animals, fragmentation of ecological infrastructure, secondary impacts to wildlife such as noise and lighting.			
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts		
Potential mitigation	❖ The security fence around the building footprint should be constructed in Clear View fencing in colour charcoal of not more than 1,8m high, following a random alignment to clear established trees and vegetation. ❖ Where fencing is required, wildlife gaps in the perimeter fence must be installed at appropriate intervals and be of a suitable dimension to allow for the movement of small animals.			
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	Limited	Limited to the site and its immediate surroundings
Intensity	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	Probable	It is most likely that the impact will occur	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	**Low negative (-)**		**Negligible**	
Comment on significance	The potential impact affects a small proportion of the vegetation but could have wider ecological implications.			

Cumulative impacts	The potential impact affects a negligible proportion of the overall habitat available for wildlife.

Project Phase	**Construction**			
Impact	**Waste Pollution**			
Description of impact	Pollution of buffer zone and natural areas caused by waste generated by the construction process.			
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts		
Potential mitigation	❖ Waste management must be a priority and all waste must be collected and stored effectively and responsibly. Refuse bins will be responsibly emptied and secured. Temporary storage of domestic waste shall be in covered and secured waste skips. Dangerous waste such as metal wires and glass must be safely stored before being moved off site as soon as possible. Under no circumstances may domestic waste be burned on site or buried on open pits. ❖ Separation and recycling of different waste materials should be supported. ❖ Litter, spills, fuels, chemical and human waste in and around the Project Area must be minimised and controlled. ❖ Cement mixing may not be performed on the ground. It is recommended that only closed side drum or pan type concrete mixers be utilised. Any spills must be immediately contained and isolated from the natural environment, before being removed from site. ❖ Toilets at the recommended Health and Safety standards must be provided. Portable toilets must be emptied regularly to prevent overflow. Once no longer required, they must be pumped dry to prevent leakage into the surrounding environment and removed from site. ❖ Where a registered disposal facility is not available close to the Project Area, the Contractor shall provide a method statement with regards to waste management.			
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	Very Limited	Extending only as far as the development site area	Very Limited	Extending only as far as the development site area
Intensity	Low	Natural and/or social functions and/or processes are slightly altered	Low	Natural and/or social functions and/or processes are slightly altered
Probability	Possible	Has occurred here or elsewhere and could therefore occur	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	Negligible	No loss of resources	Negligible	No loss of resources
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	Construction activities are likely to generate significant quantities of solid waste that could pollute the buffer zone and natural areas.			

Project Phase	Construction			
Impact	**Construction Vehicles**			
Description of impact	Pollution caused by the operation of vehicles and heavy machinery.			
Mitigable	Medium	Mitigation exists and will notably 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. ❖ 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.			
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	Very Limited	Extending only as far as the development site area	Very Limited	Extending only as far as the development site area
Intensity	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	Possible	Has occurred here or elsewhere and could therefore occur	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	Negligible	No loss of resources	Negligible	No loss of resources
Significance	**Low negative (-)**		**Negligible**	
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.			

Project Phase	Construction	
Impact	**Erosion and Stormwater Management**	
Description of impact	Potential erosion during clearance of the site and increased stormwater runoff	
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts
Potential mitigation	❖ Ensure that construction activities do not cause any preferential flow paths and concentrated surface runoff during rainfall events. ❖ Clearly demarcate the construction area and ensure that heavy machinery does not compact soil or disturb vegetation outside of these demarcated areas.	

	❖ Reduce transport of sediment through use of structures such as silt fences and biodegradable coir logs placed along a contour below the development footprint. ❖ Ensure that vegetation clearing is conducted in parallel with the construction progress to minimise erosion and runoff. ❖ Revegetate exposed areas once construction has been completed. ❖ Ensure that vegetation clearing is conducted in parallel with the construction progress to minimise erosion and runoff. ❖ Ensure that stormwater and runoff generated by hardened surfaces is discharged in retention areas (i.e. swales or retention ponds), to avoid concentrated runoff and associated erosion.			
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	Extending only as far as the development site area
Intensity	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	Probable	It is most likely that the impact will occur	Possible	Has occurred here or elsewhere and could therefore occur
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	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Low	Marginal loss, the resource is not damaged irreparably or is not scarce	Negligible	No loss of resources
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	Steep slopes on the property will be vulnerable to erosion during clearance of the site and the construction phase. It is therefore important that appropriate erosion control measures are implemented.			

Project Phase	**Construction**	
Impact	**Disturbance / removal of topsoil**	
Description of impact	Disturbance of topsoil, potential soil erosion and the loss of topsoil	
Mitigable	Medium	Mitigation exists and will notably reduce 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 utilised for this purpose if it is without seed.			
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	Extending only as far as the development site area
Intensity	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	Probable	It is most likely that the impact will occur	Possible	Has occurred here or elsewhere and could therefore occur
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	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Low	Marginal loss, the resource is not damaged irreparably or is not scarce	Negligible	No loss of resources
Significance	**Low negative (-)**		**Negligible**	
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.			

Project Phase	**Construction**			
Impact	**Noise pollution**			
Description of impact	Noise caused by machinery and staff			
Mitigable	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**	
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	Negligible	The impact will have negligible effects and would require little or no mitigation	Negligible	The impact will have negligible effects and would require little or no mitigation

Probability	Probable	It is most likely that the impact will occur	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	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	Not relevant		Not relevant	
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	Some extent of noise pollution during construction is expected; however, with mitigation the impact will be reduced.			

Project Phase	**Construction**			
Impact	**Employment**			
Description of impact	Empowerment of the local community members living in the area relating to temporary employment opportunities			
Mitigable	Medium	Mitigation only exists to ensure that the positive impact is followed through.		
Potential mitigation	❖ Use existing social structures and communication channels to ensure social representation. ❖ Use local labour and source local materials as far as possible.			
Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Positive	
Duration	Short term	Impact will last between 1 and 2 years	Short term	Impact will last between 1 and 2 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 slightly altered	Low	Natural and/or social functions and/or processes are slightly altered
Probability	Improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	Definite	There are sound scientific reasons to expect 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	**Negligible**		**Low 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.			

Impacts foreseen during the Operational Phase for the Alternative A (Preferred Alternative):

Project Phase	Operation			
Impact	**Habitat and SCC negatively affected by the management activities, like vegetation trimming, path and road maintenance, fire regime changes, ongoing management of invasive plants, etc.**			
Description of impact	❖ A general long-term loss of habitat for plants, pollinators, and other important taxa. ❖ Altered soil characteristics which causes unnecessary harm to forest vegetation dynamics. ❖ Pollution of the environment. ❖ The creation of a landscape of fear where some animals and insects that are able to access the site do not do so because of excessive and potentially destructive anthropogenic activity. ❖ Loss of habitat to invasive plants species and increasingly species poor senescent fynbos in ecotonal areas on the site.			
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts		
Potential mitigation	❖ It is a requirement of the law that alien clearing and monitoring be followed on Erf 301. ❖ Emergency & cleaning supplies for incidents of waste spillage, or fires accidentally spreading should be kept nearby for each development proposed (e.g., keep lime, spades, first aid etc. handy). Fire extinguishers etc. must be kept as per fire safety regulations. ❖ Owners and guests must be aware of activities that are not allowed on the site. o No disposal of grey water in the environment. o No walking where a path is not clearly indicated / present. o Instructions for the proper use of chemical toilets must be provided and must be clearly visible in all restrooms. ❖ No plants may be brought to the site from elsewhere, unless planted in pots or artificial beds. All species must be from the plant search and rescue operation, or must be species that occur there naturally. o No planting of trees or other plants outside of the development disturbance footprint. o Locally indigenous species may be sourced from elsewhere for the rehabilitation of the 2m disturbance strip. ❖ Light pollution must be considered during the operational phase of the project. Full-spectrum bulbs mimic natural sunlight, providing a balanced spectrum of light suitable for plant growth. They are suitable for areas with low natural light. ❖ Due to the forest environment over the majority of the site, and Whites Road along the northern boundary, no fire breaks may be made on Erf 301. ❖ Fencing around the perimeter of Erf 301 should be avoided if possible to ensure the site remains connected to the habitat to the east and west.			
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	Extending only as far as the development site area
Intensity	Medium	Natural and/or social functions and/or processes are notably altered	Low	Natural and/or social functions and/or processes are slightly altered
Probability	Probable	It is most likely that the impact will occur	Probable	It is most likely that the impact will occur

Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
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	Medium	the resource is damaged irreparably but is represented elsewhere	Medium	the resource is damaged irreparably but is represented elsewhere
Significance	**Medium negative (-)**		**Low negative (-)**	
Comment on significance	The proposed developments will be in close proximity to Red Listed and protected plant species that are vulnerable to habitat loss and fragmentation. The primary dwelling and pods will alter the disturbance regime in the northern section of Erf 301. If the management of Erf 301 is done in an ecologically friendly way in the long-term, impacts of management in the area can prevent and reduce cumulative negative impacts. Without the appropriate consideration for the environment, management activities will impact the flora and habitat they grow in negatively.			

Project Phase	**Operation**	
Impact	**Habitat and SCC are negatively affected in the long-term by landscaping resulting in water attenuation problems, genetic pollution, and potential long-term biodiversity loss from the cultivation of species that are not indigenous to the area.**	
Description of impact	❖ A gradual increase in the number of negative edge effects that result from exotic garden plants outcompeting natural species in the environment. ❖ Biodiversity loss from introduction & establishment of invasive plants in natural fynbos vegetation ❖ A general loss of habitat, not only for plants, but important pollinator species too. ❖ Eventual loss of any remaining native vegetation remaining due to the gradual naturalisation of exotic garden plant varieties. ❖ A loss of natural genetic variation (e.g., due to introgression; Mitchell & Holsinger, 2018) between populations and species of plants. ❖ Loss of specific adaptations that make plant species resilient. ❖ Altered population and plant community structure and fragmentation of sub-populations of SCC. ❖ Altered soil characteristics, including soil microbes, & seed bank changes. ❖ Altered fire regimes.	
Mitigable	High	Mitigation exists and will considerably reduce the significance of impacts
Potential mitigation	❖ Additional gardening should be avoided and may only take place in pots and potted beds on the site. ❖ Ongoing effort to remove all invasive plants species is a requirement by law. ❖ As mentioned before, no planting of kikuyu grass will be allowed. Lawns may not be planted. ❖ Landowners are responsible to maintain their gardens, so that plants do not overgrow. No garden waste may be dumped in any remaining natural area and must be disposed of in a responsible manner. ❖ Fertilisers and pesticides must be avoided in gardens, and when used it must be done with caution and may not become routine practice. ❖ If gardens need to be considered within the 2m disturbance areas around permanent disturbance footprints, they can be designed to be water wise (avoid erosion) and friendly to wildlife and the greater natural habitat. Fynbos Life in Cape Town is an inspirational indigenous landscaping project - all tips from Fynbos Life form part of the mitigation on the impact of landscaping.	
Assessment	**Without mitigation**	**With mitigation**
Nature	Negative	Negative

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	Very Limited	Extending only as far as the development site area
Intensity	High	Natural and/ or social functions and/ or processes are significantly altered	Low	Natural and/or social functions and/or processes are slightly altered
Probability	Definite	There are sound scientific reasons to expect that the impact will occur	Possible	Has occurred here or elsewhere and could therefore occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
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	Medium	the resource is damaged irreparably but is represented elsewhere	Medium	the resource is damaged irreparably but is represented elsewhere
Significance	**Medium negative (-)**		**Negligible**	
Comment on significance	Most landowners plant gardens with plants that are not native and indigenous to the area where they live. Pseudo-natural gardening also results in the creation of Frankenflora. This means that genetic pollution could result in cryptic hybridisation and eventual species loss. By allowing the planting of gardens in sensitive natural habitat (even with species advertised as being locally sourced), a loss of SCC will take place from increased edge effects habitat that is already somewhat fragmented. Some gardening / landscaping (a form of soft landscaping) may be required within the development footprint, and here "hard landscaping" must be avoided where possible.			

Project Phase	**Operation**	
Impact	**Loss of habitat for fauna during maintenance activities for roads and housing infrastructure.**	
Description of impact	❖ A general loss of habitat for plants and fauna by excessive vegetation clearing around houses and roads. ❖ The mismanagement of materials during routine maintenance of infrastructure can cause habitat loss (i.e. stockpiling/long term storage of materials on site rather than removing from site). ❖ Uncontrolled alien plants can completely invade and transform natural habitats leading to a loss in associated biodiversity.	
Mitigable	High	Mitigation exists and will considerably reduce the significance of impacts
Potential mitigation	❖ Vegetation clearing along road verges should be kept to a minimum, and avoided in areas where it poses no risk to vehicles. ❖ During routine maintenance of infrastructure on the property, adequate management of materials should be implemented to reduce any unnecessary habitat loss. For footprint of the developments as far as possible to reduce additional damage to the natural (undisturbed) surroundings. Any old/removed building materials or rubble should be removed from site as soon as possible during maintenance activities and disposed of appropriately off-site. This will reduce the amount of additional space (natural surrounding habitat) lost or damaged for unnecessary storage of materials ❖ It is a requirement by law than an alien and invasive plant management plan be developed and implemented on the property.	

	❖ No insect zappers should be allowed on site, nor the general application of insecticides around infrastructure. Ecofriendly repellents are readily available (i.e. citronella oil/lotions) and should be used instead. ❖ Emergency & cleaning supplies for waste spillage or fires should be accessible at each development proposed development on the property (e.g., keep lime, spades, first aid, fire extinguishers, etc. handy). Rainwater tanks can also be a useful source of water to aid in extinguishing fires, provided the water is readily accessible. ❖ All staff and guests to the property must be properly trained and made aware of activities that are not allowed on the property. ❖ Limited additional vegetation clearing should take place on the property for activities, even if these are low impact, as the cumulative effects can be substantial (i.e. camping grounds, mountain biking/hiking trails, picnic areas). ❖ The establishment of indigenous gardens or the complete absence of gardens (i.e. fully rehabilitating any disturbed areas) within the footprints of the development will promote natural biodiversity.			
Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Negative	
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	Very Limited	Extending only as far as the development site area
Intensity	Medium	Natural and/or social functions and/or processes are notably altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Possible	Has occurred here or elsewhere and could therefore occur	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	Partly reversible	the impact is reversible but more intense mitigation measures are required	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Low	Marginal loss, the resource is not damaged irreparably or is not scarce	Low	Marginal loss, the resource is not damaged irreparably or is not scarce
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	The development on the site could alter the natural area on the property through changes in vegetation clearing associated with the maintenance and operation of housing and road infrastructure or possibly the introduction of alien plants. For the most part habitat alterations will be restricted to the immediate surroundings of the roads (i.e. road verge clearing) and houses (i.e. clearing/trimming vegetation around houses) but any impacts associated with alien plant invasions can have landscape level impacts.			

Project Phase	**Operation**
Impact	**Disturbance of fauna due to noise and lighting associated with residential units.**
Description of impact	❖ The creation of a landscape of fear for fauna where areas of the property are avoided due to excessive anthropogenic activity, predominantly noise. ❖ Light pollution acts as an attractant to many insects and associated predators, putting all at risk.

Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts		
Potential mitigation	❖ Light pollution must be reduced and avoided wherever possible during the operational phase of the project. White LED lights have the worst negative effects for the environment, therefore dimmer lights with more natural warm light colours must be used, and no bright torches used outside the house at night unnecessarily. ❖ Permanent lighting along roads must be avoided. Given the low traffic volumes expected for this development, road-side lighting along the access roads is unnecessary and will cause avoidable impacts on biodiversity, particularly increasing the risk of roadkill. ❖ Noise should be minimised on the site and loud sirens/alarms should not be permitted unless there is an emergency. If security is a concern, then a silent alarm system should be implemented i.e. motion detection cameras.			
Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Negative	
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	Very Limited	Extending only as far as the development site area
Intensity	Medium	Natural and/or social functions and/or processes are notably altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Possible	Has occurred here or elsewhere and could therefore occur	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	Partly reversible	the impact is reversible but more intense mitigation measures are required	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Low	Marginal loss, the resource is not damaged irreparably or is not scarce	Low	Marginal loss, the resource is not damaged irreparably or is not scarce
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	The development on the site will alter the disturbance regime of the largely natural area on the property through changes in noise and artificial lighting levels. For the most part, these disturbances will be restricted to the immediate surroundings of the roads (i.e. traffic noise) and houses (i.e. people talking/shouting, music). However, this can have a significant impact on biodiversity and alter the way fauna use the landscape (i.e. the creation of a landscape of fear resulting in animals avoiding certain habitats/areas around human disturbances; insects attracted to lights decreases their survival, negatively impacts on the ecosystem services they provide and has negative knock-on consequences for their associate predators).			

Project Phase	**Operation**
Impact	**Human-wildlife conflict**
Description of impact	❖ Intentional harm or death of problem or pest animals due to their negative effects on people (or pets) living on the property. ❖ Unintentional harm or death of animals due to them consuming waste/food products which are bad for their health.

	❖ Pets causing death/harm to indigenous wildlife. ❖ Changes in natural foraging and movement patterns of fauna across habitats within the landscape due to the presence of a favourable resource (usually food) near the development. This can have knock-on effects for the ecosystem services they provide and their associated predators.	
Mitigable	High	Mitigation exists and will considerably reduce the significance of impacts
Potential mitigation	❖ No feeding of wildlife is permitted, and no disposal/discarding of any food waste (bones, scraps, fruit pips/cores) within the surrounding environment is allowed. ❖ All food waste or general waste should be kept in a secure location (i.e. a lockup cage or sealed outside room) which is not accessible to any wildlife. ❖ All waste should be stored in a double-container fashion, in such a way that it does not serve as an attractant to wildlife attempting to access the secure location (i.e. all waste products put into closed/sealed rubbish bags/containers and then placed within larger sealed containers/bins). ❖ Given that the waste area is secured against wildlife accessing it, allowances should still be made for the unlikely event that an animal does access the waste storage area, so that the waste is not easily accessed (i.e. use wildlife-proof dustbins/containers or lock the lids of larger containers). The double-container storage of waste (mentioned above) also prevents easy access of waste products to fauna, with all rubbish bags to be stored inside more solid containers. ❖ All waste, particularly food waste, should be regularly removed from the property and disposed of appropriately to prevent the scent of old products increasing the attractiveness to the disposal area and surrounding development for wildlife. ❖ Residents on the property should be limited in their ability to keep pets (i.e. how many pets and what types of pets). It is highly recommended that no cats be allowed on the property as they are known to actively hunt small animals and can have detrimental effects on the wildlife of an area. If dogs are kept on the property, they should be contained within the vicinity of the residence areas and not be allowed to wander the entire property unsupervised as they may hunt and kill fauna species or be exposed to risks from wildlife fauna	

Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Negative	
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	Very Limited	Extending only as far as the development site area
Intensity	High	Natural and/ or social functions and/ or processes are significantly altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Definite	There are sound scientific reasons to expect that the impact will occur	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	Partly reversible	the impact is reversible but more intense mitigation measures are required	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Low	Marginal loss, the resource is not damaged	Low	Marginal loss, the resource is not damaged irreparably or is not scarce

		irreparably or is not scarce		
Significance	**Medium negative (-)**		**Negligible**	
Comment on significance	Some wild animals are attracted to human developments, usually due to the presence of a resource that has become available within the footprint of the development (i.e. food attracting baboons, leftover scraps attracting wild animals if disposed in the surrounding environment). If any animal becomes habituated or loses their fear of humans, they risk becoming pests and problem animals (sometimes even posing a risk to humans) and often require control, in severe cases resulting in their harm or death. Keeping pets on the premises can also increase the potential for human-wildlife conflict as pets can fight or kill animals (i.e. cats are known to be devastating for indigenous wildlife, especially birds, small mammals and reptiles), or be attractive to some animals as prey (i.e. leopard are known to take domestic cats and dogs occasionally). Pets also run the risk of being harmed by wildlife (i.e. snake bites) which can lead to owners wanting to control or harm the natural fauna of the area.			

Project Phase	**Operation**			
Impact	**Visual / Sense of place**			
Description of impact	Visual impacts of structures / aesthetic consequences due to incorrect or excessive lighting, especially outdoor lighting			
Mitigable	Medium	Mitigation exists and will notably reduce 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 removal and follow-up operations of invasive alien plants. ❖ Outside lighting should be designed and limited to minimise impacts on fauna. All outside lighting should be directed away from any sensitive areas. Fluorescent and mercury vapor lighting should be avoided, and sodium vapor (green/red) lights should be used wherever possible			
Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Negative	
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Medium Term	Impact will last between 2 and 15 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 slightly altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Probable	It is most likely that the impact will occur	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	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Not relevant		Not relevant	
Significance	**Low negative (-)**		**Negligible**	

Comment on significance	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.

Project Phase	**Operation**			
Impact	**Stormwater Management**			
Description of impact	Accelerated erosion / pollution into sub-surface water.			
Mitigable	High | Mitigation exists and will considerably reduce the significance of impacts			
Potential mitigation	❖ A sustainable stormwater design must be implemented to prevent excessive run-off that will lead to erosion of the surrounding landscape. ❖ Stormwater generated on site should be managed according to Sustainable Drainage System (SuDS) principles. This requires that as much stormwater as possible should be attenuated within the development footprint. The following measures, *inter alia*, should be considered: o Rainwater harvesting tanks must be installed; o Use of swales and detention ponds to attenuate stormwater runoff, encourage infiltration and reduce the speed, energy and volumes at which stormwater is discharged from the site; o Use of permeable paving to encourage infiltration into the soil; and o Use of retention ponds and artificial wetlands to capture stormwater runoff and prevent its discharge from the site.			
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	Extending only as far as the development site area
Intensity	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	Probable	It is most likely that the impact will occur	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	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	**Low negative (-)**		**Negligible**	
Comment on significance	A key impact related to residential developments is the generation of large volumes of stormwater associated with an increased area of impermeable surfaces (i.e. roads, roofs and other infrastructure). Stormwater is typically conveyed into watercourses, where high volumes (and associated high energy) cause degradation of watercourses, mainly due to the erosion of the bed and banks. In this respect given the steep slopes within the property, even though the drainage line is located outside of the development footprint, it is potentially vulnerable to stormwater 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	❖ 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. ❖ 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	Medium	Natural and/or social functions and/or processes are notably altered	Medium	Natural and/or social functions and/or processes are notably altered
Probability	Definite	There are sound scientific reasons to expect that the impact will occur	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	Barely reversible	the impact is unlikely to be reversed even with intense mitigation measures	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Not relevant		Not relevant	
Significance	**Medium negative (-)**		**Low positive (+)**	
Comment on significance	Erf 301 also didn't have a marked invasive presence. Only one large black wattle (*Acacia mearnsii*) tree was seen on the site. Some black wattles were also seen outside of the development footprint in the valleys flanking the east and west, but it was not a big invasion and still very manageable. Ongoing monitoring and clearing of invasive plants should occur. A detailed plan is not required for Erf 301, as the invasive plants on the site are minimal, and can easily be cleared. The control of AIP on the property has a positive impact on biodiversity.			

Impacts foreseen during the Construction Phase for Alternative B:

Project Phase	Construction
Impact	**A direct loss of patches of habitat due to earthworks and other construction related activities.**
Description of impact	❖ The further loss and fragmentation of an already fragmented habitat, and a loss of ecotonal vegetation. ❖ A shift towards a negative change in the conservation status of the forest / thicket habitat on the site.
Mitigable	Medium | Mitigation exists and will notably reduce significance of impacts
Potential mitigation	❖ Prior to construction, the disturbance footprint of proposed developments should be clearly defined and demarcated to prevent unnecessary damage to the surrounding environment. This mitigation measure is described in the animal species report and must be followed according to the specifications in that report. o For once off deliveries, clear indications on the nearby roads should be put up to guide truck drivers to the construction site, thus avoiding divers getting lost and causing unnecessary disturbance. ❖ Prior & during construction: Weather reports must be checked daily to avoid heavy machinery and activities on the site during rainy weather. Following a rainfall event (excluding short periods of gentle, light rain), all construction on the site must cease temporarily. ❖ During construction: Erosion control measures. o Make use of silt fences and sediment barriers on the site. ▪ Silt fences should only be implemented where necessary on the site if during the construction phase erosion becomes a noteworthy problem. ▪ Straw bales and sandbags are temporary barriers that can be used on the site from the start of the construction phase to avoid and control sediment movement in areas with higher potential for runoff. o Temporary vegetation cover in areas of permanent disturbance ▪ A hydroseed mixture of native grasses and groundcovers can be used on exposed soil surfaces to provide immediate soil stabilization. Species such as *Eragrostis capensis* and *Stenotaphrun secondatum* can be used for rapid coverage. *Vicia sativa* (common vetch) is a leguminous plant that can be used in areas where construction activities have temporarily ceased in order to protect the soil. o Erosion control blankets and mats that are biodegradable (e.g., coir made from coconut fibres) can be used with native seed mixes to enhance the stabilisation of soil. These are an option in the disturbance envelope of 2m around permanent disturbance footprints on the site. ❖ During construction: Protection and re-use of topsoil. o The topsoil will be vital for the success of rehabilitation of vegetation following construction process and must therefore be treated with care. o Topsoil from vegetation on the site (excluding topsoil under invasive plants) in new excavation areas must be stripped to a depth of ca. 30cm and kept in designated piles. Topsoil piles must be suitably covered with to prevent any additional invasive species seeds from falling in and establishing in the soil. o If the SDP of a proposed development does not have enough space for the storage and protection of topsoil within the disturbance envelope, then the Contractor must identify an alternative temporary stockpile area that is already transformed and where it can easily be retrieved for post-construction rehabilitation. o The topsoil piles must be clearly labelled so that it does not mix with subsoils excavated or any other construction material for the site. ❖ Prior planning & during construction: Minimise the disturbance area.

	○ Dust suppression mechanisms e.g., materials and regular site maintenance (e.g., cleaning surfaces and "rounding off" a workday) is essential to reduce dust, and general pollution. ○ Implement phased construction to limit the extent of exposed soil at any given time. This approach reduces the area vulnerable to erosion and allows for stabilization measures to be applied progressively.			
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	Extending only as far as the development site area
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	Definite	There are sound scientific reasons to expect that the impact will occur	Definite	There are sound scientific reasons to expect that the impact will occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	Barely reversible	the impact is unlikely to be reversed even with intense mitigation measures	Barely reversible	the impact is unlikely to be reversed even with intense mitigation measures
Resource irreplaceability	Medium	the resource is damaged irreparably but is represented elsewhere	Medium	the resource is damaged irreparably but is represented elsewhere
Significance	**Medium negative (-)**		**Medium negative (-)**	
Comment on significance	The proposed development will result in the permanent loss of thicket ecotonal vegetation, and small patches of forest south of Whites Road. The impact on the loss of vegetation and habitat is most severe and noticeable during the construction phase of the project due to the fact that structures placed on the site are permanent features.			

Project Phase	**Construction**	
Impact	**A direct loss of patches of species of conservation concern (SCC) and protected trees due to earthworks and other construction related activities.**	
Description of impact	❖ Fragmentation of SCC sub-populations. ❖ A shift towards a negative change in the conservation status of the SCC and a reduction in the extent of occurrence (EOO) of SCC and protected trees. ❖ A general loss of suitable habitat for SCC. ❖ A loss of genetic variation within remaining SCC stands. ❖ An increased risk of re-invasion of the site, mainly by wattles, hakeas, and pines.	
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts
Potential mitigation	❖ Prior planning & during construction: The proposed development must have a maximum disturbance envelope of 2m around the proposed development. ○ Prior to the commencement of construction and earth movement on the site, a plant search and rescue must be conducted of all fynbos taxa on the site (preferably with a botanist or suitably informed ECO on the site to supervise the search and rescue and provide guidance on best practice). ○ The rescued plants must be kept in a nursery that should preferably be set up on Erf 301. Alternatively, arrangements for a suitable nursery site should be made to keep and care for removed plants during the construction phase of the project. ○ The rescued plants must be planted back with the aid of the ECO or horticultural specialists within the 2m disturbance footprint around the permanent disturbance footprints. This will promote the regeneration of	

<table>
<tr><td></td><td colspan="4">natural vegetation around the developments and reduce the possibility of negative edge effects on the site.
o Additional plants that are observed during construction within a development footprint must be rescued and added to the rescued plants in the indigenous nursery.
❖ The development may not have any additional gardening, especially lawn areas, in order to prevent negative edge effects and long-term habitat degradation. The only additional landscaping / gardening on the site should be limited to potted plants and potted beds.
o Only natural fynbos and forest plant species rescued from the site must regrow around the dwelling and pods, with regular invasive plant management (checks and removal).
o No kikuyu grass is allowed anywhere on Erf 301.
o The owner must be wary of so-called "indigenous" gardening, as this kind of advertising is not always accurate.
o Plaques celebrating some of the naturally occurring flora on the property could potentially be made on Erf 301, however this is not a requirement.
❖ Materials used during construction must be sourced and transported responsibly to minimise the risk of further introductions of new invasive plants and contamination of the site.
o Install vehicle wash stations at site exits to remove soil and prevent it from being transported off-site and contributing to erosion elsewhere.
o Staff must check their clothes when they enter and leave to ensure no invasive plants have been introduced or poached from the natural surrounding environment. Geophytes are at a large risk of poaching, and this is an important reason why SANBI has a list of sensitive species for plants (i.e., their identities are unknown) in South Africa. However, some LC and Near Threatened species, especially geophytes (several on Erf 301), can also be targeted by plant poachers despite not being listed as sensitive species.
❖ Driveways and parking spaces for non-heavy machinery could make use of open pavers that are planted with non-invasive grasses, like *Cynodon dactylon* (the Cape Royal variety), or as an alternative *Stenotaphrum secundatum* (Buffalo grass).
❖ If any trees need to be removed or pruned then a permit is required, according to the National Forests Act.</td></tr>
<tr><td>Assessment</td><td colspan="2">Without mitigation</td><td colspan="2">With mitigation</td></tr>
<tr><td>Nature</td><td colspan="2">Negative</td><td colspan="2">Negative</td></tr>
<tr><td>Duration</td><td>Permanent</td><td>Impact may be permanent, or in excess of 20 years</td><td>Medium Term</td><td>Impact will last between 2 and 15 years</td></tr>
<tr><td>Extent</td><td>Limited</td><td>Limited to the site and its immediate surroundings</td><td>Very limited</td><td>Extending only as far as the development site area</td></tr>
<tr><td>Intensity</td><td>Medium</td><td>Natural and/or social functions and/or processes are notably altered</td><td>Low</td><td>Natural and/or social functions and/or processes are somewhat altered</td></tr>
<tr><td>Probability</td><td>Probable</td><td>It is most likely that the impact will occur</td><td>Possible</td><td>Has occurred here or elsewhere and could therefore occur</td></tr>
<tr><td>Confidence</td><td>High</td><td>Substantive supportive data exists to verify the assessment</td><td>High</td><td>Substantive supportive data exists to verify the assessment</td></tr>
<tr><td>Reversibility</td><td>Barely reversible</td><td>the impact is unlikely to be reversed even with intense mitigation measures</td><td>Barely reversible</td><td>the impact is unlikely to be reversed even with intense mitigation measures</td></tr>
<tr><td>Resource irreplaceability</td><td>Medium</td><td>the resource is damaged irreparably but is represented elsewhere</td><td>Medium</td><td>the resource is damaged irreparably but is represented elsewhere</td></tr>
<tr><td>Significance</td><td colspan="2">Low negative (-)</td><td colspan="2">Low negative (-)</td></tr>
</table>

Comment on significance	Erf 301 is home to SCC and protected trees (namely milkwood and cheesewood trees). The local loss of threatened and protected plant species can have potentially far-reaching impacts on the environment.

Project Phase	**Construction**			
Impact	**An indirect impact resulting in habitat degradation, and SCC loss due to construction site management.**			
Description of impact	❖ Unanticipated losses of vegetation outside of designated areas. ❖ Increased duration of negative construction impacts. ❖ Increased vulnerability to impacts within remaining habitat portions. ❖ Potential health and safety hazards on the site and in the surrounding environment. ❖ The creation of novel habitat that indigenous species cannot survive in, but where exotics and invasive plants thrive in.			
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts		
Potential mitigation	❖ During construction: All new staff must be briefed about the layout of the construction site and must be made aware of the no-go areas and fact that the surrounding environment is sensitive and must not be disturbed. ❖ During construction: Construction vehicles should be checked on a daily basis at the start of the day for leaks and other faults. o Sandbags or sawdust should be available on the site to ensure that any accidental oil or toxic material spills can be contained and stopped quickly. o Any contaminated soil on the site must be removed by a registered hazardous waste service provider (Spill Tech, Interwaste, EnviroServ etc.). o Vehicles with leaks and other problems must not be allowed to operate on the site until they have been repaired. ❖ During construction: Ongoing monitoring and clearing of invasive plants should occur. A detailed plan is not required for Erf 301, as the invasive plants on the site are minimal, and can easily be cleared. This is a requirement by law. Pine trees can be cut down as close to the ground as possible without application of herbicide. ❖ During construction: Adequate ablution must be provided and no waste dumping or burning is to be allowed. See the animal specialist report for more detail. ❖ During construction: Concrete, cement, plastering, and painting must be conducted with care. See the animal specialist report for more detail. ❖ During construction: Stockpiles of materials must be managed responsibly. See the animal specialist report for more detail.			
Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Negative	
Duration	Long Term	Impact will last more than 15 years	Brief	Impact will not last longer than 1 year
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Extending only as far as the development site area
Intensity	High	Natural and/ or social functions and/ or processes are significantly altered	Low	Natural and/or social functions and/or processes are slightly altered
Probability	Probable	It is most likely that the impact will occur	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	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	Medium	the resource is damaged irreparably but is represented elsewhere	Medium	the resource is damaged irreparably but is represented elsewhere
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	In addition to the large and obvious construction impacts, the management of materials and staff on the site is also an important impact on the site. If managed properly, many accidents and unanticipated negative losses to the expense of the environment, as well as staff can be avoided.			

Project Phase	**Construction**			
Impact	**Loss of habitat for fauna within the footprint of the proposed houses, pods and roads due to construction related activities.**			
Description of impact	Loss of suitable habitat for fauna SCC to live, forage and breed.			
Mitigable	Medium	Mitigation exists and will reduce significance of impacts		
Potential mitigation	❖ Prior to construction, the disturbance footprint of proposed roads and houses should be clearly defined and demarcated to prevent unnecessary additional damage to the surrounding environment: o Construction netting or fencing must be used to clearly indicate construction areas. Access roads must be clearly marked so there is no confusion as to where the tracks are or how wide the road is. o Clear signs for "no-go" areas for vehicles and personnel should be placed strategically on the site and along access roads. No-go areas are anywhere outside of the direct area of influence of the construction phase. o All vehicles, construction or inspection, must only access the sites via a planned, single track access road with no additional roads, tracks to be made in the environment. Roads are to be clearly marked to prevent additional tracks or unnecessarily widening the access road. A turning area for construction vehicles should be demarcated within the existing footprint of the house. ❖ Where vegetation will be cleared to make way for construction, filled sandbags, silt socks or a silt fence must be used to reduce the intensity of water runoff and flow over the site and thereby reduce erosion potential. This should be placed around adaptive management to ensure the integrity of the system for reducing erosion. This is pertinent given the slope of the property. ❖ Protection and reuse of topsoil can be critical for the successful rehabilitation of vegetation following construction processes as it contains valuable seedbank of indigenous plants that regenerate after the soil is replaced.			
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	Extending only as far as the development site area
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	It is most likely that the impact will occur	Probable	It is most likely that the impact will occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment

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	Medium	the resource is damaged irreparably but is represented elsewhere	Medium	the resource is damaged irreparably but is represented elsewhere
Significance	**Medium negative (-)**		**Low negative (-)**	
Comment on significance	The proposed development of a residential dwelling, pods and associated access roads will result in the permanent loss of habitat space on the property. The primary development footprint where permanent infrastructure is placed and permanent loss of habitat occurs, translates to approx. 2% of the property size. Efforts to reduce this impact have already been made by means of using stilts/pylons to raise sections of the development off the ground, thereby increasing habitat availability for many SCC.			

Project Phase	**Construction**
Impact	**Fauna and habitat negatively affected by the management of the construction site (i.e., staff, stockpiles, and equipment).**
Description of impact	❖ Loss of habitat or harm to fauna outside of designated construction areas. ❖ Litter and pollution of natural environment. ❖ Potential health and safety hazards (for staff and fauna) on the site and in the surrounding environment.
Mitigable	Medium — Mitigation exists and will reduce significance of impacts
Potential mitigation	❖ All new staff must be briefed about the layout of the construction site, made aware of the no-go areas and informed of the sensitive surrounding environment that is not to be disturbed. Regular site meetings should be held, during which the ECO should remind all staff of these requirements and any questions/concerns can be raised and addressed. ❖ Construction vehicles should be checked daily, prior to construction at the start of each day for leaks and other faults. o Sandbags or sawdust should be available and accessible on the site to ensure that any accidental oil spills are contained and stopped quickly. o Any contaminated soil on the site must be removed by a registered hazardous waste service provider (e.g. Spill Tech, Interwaste, EnviroServ., etc.). o Vehicles with leaks and other problems are not allowed to operate on the site until they have been repaired. ❖ No littering, waste dumping or burning is allowed on the site or in the surrounding environment. All waste is to be collected in designated bins with lids that can be secured or stored in a secure area when construction is not taking place (evenings, weekends, holidays, etc.) to prevent interference by animals (i.e. baboons). All waste is to be transported to a registered waste disposal facility off site. ❖ Adequate ablution facilities must be provided for every construction project. o Portable toilets will need to be used in remote areas like this site, and these must be placed on a level platform before construction starts within the footprint of the access roads or housing sites. o Ablution facilities must be regularly maintained and cleaned. o Refer to SHEQ guidelines for minimum toilet facilities to be provided for number of staff on site. ❖ Concrete, cement, plastering, and painting: o Mixing areas be clearly defined on the site and must be surrounded by an impermeable material (i.e. create a temporary coffer dam with sandbags and thick plastic sheeting) to prevent any runoff and absorption into the surrounding soils. o The designated mixing areas should be limited to areas that will become future hard surfaces on the site, or that are already transformed and likely to remain transformed.

	○ No concrete and cement mixing is allowed in areas outside the site development plans (SDPs). ○ Cleaning of cement, plastering & paint equipment must be done into a designated, bunded & lined slurry sump or container to avoid contaminating the environment. ❖ All stockpiles of fine textured building materials and soils must be covered by a geotextile or plastic covering, which must also be bunded (e.g. with sandbags) when not in use. This will prevent material being lost to the environment and fauna from accessing stockpiles and possibly subjecting them to harm during construction. ❖ Any small items or building materials which can be carried away by medium-large animals (i.e. baboons) should be safely stored in containers or locked away in a designated area to prevent interference from animals, causing possible harm to them and preventing them from removing such items from site. ❖ All food waste (leftovers, bones, pips, apple cores) to be disposed of in designated bins and NOT to be disposed of in the surrounding environment within or outside the designated construction areas. Food sources serve as a major attractant for fauna and will expose them to unnecessary harm in the vicinity of the construction site. All food waste should be removed from site on a daily basis and disposed of appropriately. ❖ Construction should take place during daylight hours so that the site can be adequately monitored for fauna during work hours, and also to prevent the use of artificial lighting at night which attracts many animal species (predominantly insects and associated predators) and subjects them to the risks of construction.			
Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Negative	
Duration	Medium Term	Impact will last between 2 and 15 years	Brief	Impact will not last longer than 1 year
Extent	Limited	Limited to the site and its immediate surroundings	Very limited	Extending only as far as the development site area
Intensity	High	Natural and/ or social functions and/ or processes are significantly altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Possible	Has occurred here or elsewhere and could therefore occur	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	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	Medium	the resource is damaged irreparably but is represented elsewhere	Low	Marginal loss, the resource is not damaged irreparably or is not scarce
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	The management of materials and staff on the site is also an important impact of development. If managed properly, many accidents and unanticipated negative impacts on fauna and the surrounding environment can be avoided.			

<table>
<tr><td>Project Phase</td><td colspan="4">Construction</td></tr>
<tr><td>Impact</td><td colspan="4">Harm/Death of fauna, particularly invertebrates and soil dwelling mammal SCC, due to earthworks and construction related activities.</td></tr>
<tr><td>Description of impact</td><td colspan="4">❖ Loss of threatened species and a shift towards a negative change in the conservation status of the SCC and other indigenous species affected by the development.
❖ Loss of genetic diversity from remaining fauna populations.
❖ General loss of biodiversity.</td></tr>
<tr><td>Mitigable</td><td colspan="4">Medium | Mitigation exists and will notably reduce significance of impacts</td></tr>
<tr><td>Potential mitigation</td><td colspan="4">❖ Construction should happen in phases, such that construction related activities are confined to one area at a time on the property and can be monitored for faunal impacts appropriately
❖ During construction:
o Before construction commences for any new earthworks at the start of new phase, an ECO should do a walk-through of the demarcated area and access roads to look fauna with limited mobility. These animals should be removed from the demarcated area to an adjacent location, and where appropriate a Fauna Specialist contacted for assistance or guidance. Construction/Earthworks for this new phase can commence thereafter.
o At any point during the day (during construction), if an animal with limited mobility is observed on site, this should be reported to the ECO and construction temporarily halted. Construction can commence once the ECO is satisfied that all such fauna are removed from the construction area.
❖ Speed limits should be imposed and monitored during construction phase, as collisions with vehicles (roadkill) pose a significant threat to many fauna species. The development site falls within a largely natural area, increasing connectivity and ultimately the diversity of fauna that may be encountered and threatened by moving vehicles. Given the narrow access roads recommended for this development, speed limits should be restricted at the discretion of the ECO to appropriate speeds to allow for driver alertness and ability to avoid collisions with fauna. Recommended speeds include 40 km/hour on main access roads with good visibility into the road verges, and 20 km/hour on smaller access roads with narrow or overgrown verges where visibility is reduced. Signs should be put up along the roads to remind people of speed limits, as well as warnings to look out for small animals on the roads.
❖ Noise must be kept to an absolute minimum during the evenings and at night to minimise all possible disturbances to nocturnal species which are more dependent on auditory signals for life processes.
❖ No trapping, killing, or poisoning of any wildlife is to be allowed and Signs must be put up to enforce this. Monitoring must take place in this regard.
❖ Any holes/deep excavations must be dug in a progressive manner and shouldn't be left open overnight. Should any holes remain open overnight they must be properly covered temporarily to ensure that no small fauna species fall in. Holes must be subsequently inspected for fauna prior to backfilling.</td></tr>
<tr><td>Assessment</td><td colspan="2">Without mitigation</td><td colspan="2">With mitigation</td></tr>
<tr><td>Nature</td><td colspan="2">Negative</td><td colspan="2">Negative</td></tr>
<tr><td>Duration</td><td>Short term</td><td>Impact will last between 1 and 2 years</td><td>Brief</td><td>Impact will not last longer than 1 year</td></tr>
<tr><td>Extent</td><td>Limited</td><td>Limited to the site and its immediate surroundings</td><td>Very Limited</td><td>Extending only as far as the development site area</td></tr>
<tr><td>Intensity</td><td>Medium</td><td>Natural and/or social functions and/or processes are notably altered</td><td>Negligible</td><td>Natural and/ or social functions and/ or processes are negligibly altered</td></tr>
<tr><td>Probability</td><td>Probable</td><td>It is most likely that the impact will occur</td><td>Improbable</td><td>Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere</td></tr>
</table>

Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	Partly reversible	The impact is reversible but more intense mitigation measures are required	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	**Low negative (-)**		**Negligible**	
Comment on significance	Fauna may occur on site and be killed or seriously harmed during construction related activities. Cryptic and ground-dwelling species, like the golden mole SCC, are difficult to detect and are limited in their mobility rendering them vulnerable to earthmoving and construction activities.			

Project Phase	**Construction**			
Impact	**Fragmentation of habitats**			
Description of impact	Cut-off of natural dispersal and foraging movement by animals, fragmentation of ecological infrastructure, secondary impacts to wildlife such as noise and lighting.			
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts		
Potential mitigation	❖ The security fence around the building footprint should be constructed in Clear View fencing in colour charcoal of not more than 1,8m high, following a random alignment to clear established trees and vegetation. ❖ Where fencing is required, wildlife gaps in the perimeter fence must be installed at appropriate intervals and be of a suitable dimension to allow for the movement of small animals.			
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	Limited	Limited to the site and its immediate surroundings
Intensity	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	Probable	It is most likely that the impact will occur	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	**Low negative (-)**		**Negligible**	
Comment on significance	The potential impact affects a small proportion of the vegetation but could have wider ecological implications.			

Cumulative impacts	The potential impact affects a negligible proportion of the overall habitat available for wildlife.

Project Phase	**Construction**			
Impact	**Waste Pollution**			
Description of impact	Pollution of buffer zone and natural areas caused by waste generated by the construction process.			
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts		
Potential mitigation	❖ Waste management must be a priority and all waste must be collected and stored effectively and responsibly. Refuse bins will be responsibly emptied and secured. Temporary storage of domestic waste shall be in covered and secured waste skips. Dangerous waste such as metal wires and glass must be safely stored before being moved off site as soon as possible. Under no circumstances may domestic waste be burned on site or buried on open pits. ❖ Separation and recycling of different waste materials should be supported. ❖ Litter, spills, fuels, chemical and human waste in and around the Project Area must be minimised and controlled. ❖ Cement mixing may not be performed on the ground. It is recommended that only closed side drum or pan type concrete mixers be utilised. Any spills must be immediately contained and isolated from the natural environment, before being removed from site. ❖ Toilets at the recommended Health and Safety standards must be provided. Portable toilets must be emptied regularly to prevent overflow. Once no longer required, they must be pumped dry to prevent leakage into the surrounding environment and removed from site. ❖ Where a registered disposal facility is not available close to the Project Area, the Contractor shall provide a method statement with regards to waste management.			
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	Very Limited	Extending only as far as the development site area	Very Limited	Extending only as far as the development site area
Intensity	Low	Natural and/or social functions and/or processes are slightly altered	Low	Natural and/or social functions and/or processes are slightly altered
Probability	Possible	Has occurred here or elsewhere and could therefore occur	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	Negligible	No loss of resources	Negligible	No loss of resources
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	Construction activities are likely to generate significant quantities of solid waste that could pollute the buffer zone and natural areas.			

Project Phase	**Construction**
Impact	**Construction Vehicles**

Description of impact	Pollution caused by the operation of vehicles and heavy machinery.			
Mitigable	Medium	Mitigation exists and will notably 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. ❖ 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.			
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	Very Limited	Extending only as far as the development site area	Very Limited	Extending only as far as the development site area
Intensity	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	Possible	Has occurred here or elsewhere and could therefore occur	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	Negligible	No loss of resources	Negligible	No loss of resources
Significance	**Low negative (-)**		**Negligible**	
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.			

Project Phase	**Construction**	
Impact	**Erosion and Stormwater Management**	
Description of impact	Potential erosion during clearance of the site and increased stormwater runoff	
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts
Potential mitigation	❖ Ensure that construction activities do not cause any preferential flow paths and concentrated surface runoff during rainfall events. ❖ Clearly demarcate the construction area and ensure that heavy machinery does not compact soil or disturb vegetation outside of these demarcated areas. ❖ Reduce transport of sediment through use of structures such as silt fences and biodegradable coir logs placed along a contour below the development footprint.	

	❖ Ensure that vegetation clearing is conducted in parallel with the construction progress to minimise erosion and runoff. ❖ Revegetate exposed areas once construction has been completed. ❖ Ensure that vegetation clearing is conducted in parallel with the construction progress to minimise erosion and runoff. ❖ Ensure that stormwater and runoff generated by hardened surfaces is discharged in retention areas (i.e. swales or retention ponds), to avoid concentrated runoff and associated erosion.			
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	Extending only as far as the development site area
Intensity	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	Probable	It is most likely that the impact will occur	Possible	Has occurred here or elsewhere and could therefore occur
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	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Low	Marginal loss, the resource is not damaged irreparably or is not scarce	Negligible	No loss of resources
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	Steep slopes on the property will be vulnerable to erosion during clearance of the site and the construction phase. It is therefore important that appropriate erosion control measures are implemented.			

Project Phase	**Construction**	
Impact	**Disturbance / removal of topsoil**	
Description of impact	Disturbance of topsoil, potential soil erosion and the loss of topsoil	
Mitigable	Medium	Mitigation exists and will notably reduce 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 utilised for this purpose if it is without seed.	

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	Extending only as far as the development site area
Intensity	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	Probable	It is most likely that the impact will occur	Possible	Has occurred here or elsewhere and could therefore occur
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	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Low	Marginal loss, the resource is not damaged irreparably or is not scarce	Negligible	No loss of resources
Significance	**Low negative (-)**		**Negligible**	
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.			

Project Phase	Construction			
Impact	**Noise pollution**			
Description of impact	Noise caused by machinery and staff			
Mitigable	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**	
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	Negligible	The impact will have negligible effects and would require little or no mitigation	Negligible	The impact will have negligible effects and would require little or no mitigation
Probability	Probable	It is most likely that the impact will occur	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	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	Not relevant		Not relevant	
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	Some extent of noise pollution during construction is expected; however, with mitigation the impact will be reduced.			

Project Phase	**Construction**			
Impact	**Employment**			
Description of impact	Empowerment of the local community members living in the area relating to temporary employment opportunities			
Mitigable	Medium	Mitigation only exists to ensure that the positive impact is followed through.		
Potential mitigation	❖ Use existing social structures and communication channels to ensure social representation. ❖ Use local labour and source local materials as far as possible.			
Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Positive	
Duration	Short term	Impact will last between 1 and 2 years	Short term	Impact will last between 1 and 2 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 slightly altered	Low	Natural and/or social functions and/or processes are slightly altered
Probability	Improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere	Definite	There are sound scientific reasons to expect 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	**Negligible**		**Low 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.			

Impacts foreseen during the Operational Phase for the Alternative B:

<table>
<tr><td>Project Phase</td><td colspan="4">Operation</td></tr>
<tr><td>Impact</td><td colspan="4">Habitat and SCC negatively affected by the management activities, like vegetation trimming, path and road maintenance, fire regime changes, ongoing management of invasive plants, etc.</td></tr>
<tr><td>Description of impact</td><td colspan="4">❖ A general long-term loss of habitat for plants, pollinators, and other important taxa.
❖ Altered soil characteristics which causes unnecessary harm to forest vegetation dynamics.
❖ Pollution of the environment.
❖ The creation of a landscape of fear where some animals and insects that are able to access the site do not do so because of excessive and potentially destructive anthropogenic activity.
❖ Loss of habitat to invasive plants species and increasingly species poor senescent fynbos in ecotonal areas on the site.</td></tr>
<tr><td>Mitigable</td><td colspan="2">Medium</td><td colspan="2">Mitigation exists and will notably reduce significance of impacts</td></tr>
<tr><td>Potential mitigation</td><td colspan="4">❖ It is a requirement of the law that alien clearing and monitoring be followed on Erf 301.
❖ Emergency & cleaning supplies for incidents of waste spillage, or fires accidentally spreading should be kept nearby for each development proposed (e.g., keep lime, spades, first aid etc. handy). Fire extinguishers etc. must be kept as per fire safety regulations.
❖ Owners and guests must be aware of activities that are not allowed on the site.
o No disposal of grey water in the environment.
o No walking where a path is not clearly indicated / present.
o Instructions for the proper use of chemical toilets must be provided and must be clearly visible in all restrooms.
❖ No plants may be brought to the site from elsewhere, unless planted in pots or artificial beds. All species must be from the plant search and rescue operation, or must be species that occur there naturally.
o No planting of trees or other plants outside of the development disturbance footprint.
o Locally indigenous species may be sourced from elsewhere for the rehabilitation of the 2m disturbance strip.
❖ Light pollution must be considered during the operational phase of the project. Full-spectrum bulbs mimic natural sunlight, providing a balanced spectrum of light suitable for plant growth. They are suitable for areas with low natural light. See the animal specialist report for more detail on this mitigation measure.
❖ Due to the forest environment over the majority of the site, and Whites Road along the northern boundary, no fire breaks may be made on Erf 301.
❖ Fencing around the perimeter of Erf 301 should be avoided if possible to ensure the site remains connected to the habitat to the east and west.</td></tr>
<tr><td>Assessment</td><td colspan="2">Without mitigation</td><td colspan="2">With mitigation</td></tr>
<tr><td>Nature</td><td colspan="2">Negative</td><td colspan="2">Negative</td></tr>
<tr><td>Duration</td><td>Permanent</td><td>Impact may be permanent, or in excess of 20 years</td><td>Permanent</td><td>Impact may be permanent, or in excess of 20 years</td></tr>
<tr><td>Extent</td><td>Limited</td><td>Limited to the site and its immediate surroundings</td><td>Very Limited</td><td>Extending only as far as the development site area</td></tr>
<tr><td>Intensity</td><td>High</td><td>Natural and/ or social functions and/ or processes are significantly altered</td><td>Medium</td><td>Natural and/or social functions and/or processes are notably altered</td></tr>
<tr><td>Probability</td><td>Probable</td><td>It is most likely that the impact will occur</td><td>Probable</td><td>It is most likely that the impact will occur</td></tr>
<tr><td>Confidence</td><td>High</td><td>Substantive supportive data exists to verify the assessment</td><td>High</td><td>Substantive supportive data exists to verify the assessment</td></tr>
</table>

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	Medium	the resource is damaged irreparably but is represented elsewhere	Medium	the resource is damaged irreparably but is represented elsewhere
Significance	**Medium negative (-)**		**Low negative (-)**	
Comment on significance	The proposed developments will be in very close proximity to Red Listed and protected plant species that are vulnerable to habitat loss and fragmentation. The primary dwelling and pods will alter the disturbance regime in the northern section of Erf 301. If the management of Erf 301 is done in an ecologically friendly way in the long-term, impacts of management in the area can prevent and reduce cumulative negative impacts. Without the appropriate consideration for the environment, management activities will impact the flora and habitat they grow in negatively.			

Project Phase	**Operation**			
Impact	**Habitat and SCC are negatively affected in the long-term by landscaping resulting in water attenuation problems, genetic pollution, and potential long-term biodiversity loss from the cultivation of species that are not indigenous to the area.**			
Description of impact	❖ A gradual increase in the number of negative edge effects that result from exotic garden plants outcompeting natural species in the environment. ❖ Biodiversity loss from introduction & establishment of invasive plants in natural fynbos vegetation ❖ A general loss of habitat, not only for plants, but important pollinator species too. ❖ Eventual loss of any remaining native vegetation remaining due to the gradual naturalisation of exotic garden plant varieties. ❖ A loss of natural genetic variation (e.g., due to introgression; Mitchell & Holsinger, 2018) between populations and species of plants. ❖ Loss of specific adaptations that make plant species resilient. ❖ Altered population and plant community structure and fragmentation of sub-populations of SCC. ❖ Altered soil characteristics, including soil microbes, & seed bank changes. ❖ Altered fire regimes.			
Mitigable	High	Mitigation exists and will considerably reduce the significance of impacts		
Potential mitigation	❖ Additional gardening should be avoided and may only take place in pots and potted beds on the site. ❖ Ongoing effort to remove all invasive plants species is a requirement by law. ❖ As mentioned before, no planting of kikuyu grass will be allowed. Lawns may not be planted. ❖ Landowners are responsible to maintain their gardens, so that plants do not overgrow. No garden waste may be dumped in any remaining natural area and must be disposed of in a responsible manner. ❖ Fertilisers and pesticides must be avoided in gardens, and when used it must be done with caution and may not become routine practice. ❖ If gardens need to be considered within the 2m disturbance areas around permanent disturbance footprints, they can be designed to be water wise (avoid erosion) and friendly to wildlife and the greater natural habitat. Fynbos Life in Cape Town is an inspirational indigenous landscaping project - all tips from Fynbos Life form part of the mitigation on the impact of landscaping.			
Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Negative	
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	Very Limited	Extending only as far as the development site area
Intensity	High	Natural and/ or social functions and/ or processes are significantly altered	Low	Natural and/or social functions and/or processes are slightly altered
Probability	Definite	There are sound scientific reasons to expect that the impact will occur	Possible	Has occurred here or elsewhere and could therefore occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
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	Medium	the resource is damaged irreparably but is represented elsewhere	Medium	the resource is damaged irreparably but is represented elsewhere
Significance	**Medium negative (-)**		**Negligible**	
Comment on significance	Most landowners plant gardens with plants that are not native and indigenous to the area where they live. Pseudo-natural gardening also results in the creation of Frankenflora. This means that genetic pollution could result in cryptic hybridisation and eventual species loss. By allowing the planting of gardens in sensitive natural habitat (even with species advertised as being locally sourced), a loss of SCC will take place from increased edge effects habitat that is already somewhat fragmented. Some gardening / landscaping (a form of soft landscaping) may be required within the development footprint, and here "hard landscaping" must be avoided where possible.			

Project Phase	**Operation**	
Impact	**Loss of habitat for fauna during maintenance activities for roads and housing infrastructure.**	
Description of impact	❖ A general loss of habitat for plants and fauna by excessive vegetation clearing around houses and roads. ❖ The mismanagement of materials during routine maintenance of infrastructure can cause habitat loss (i.e. stockpiling/long term storage of materials on site rather than removing from site). ❖ Uncontrolled alien plants can completely invade and transform natural habitats leading to a loss in associated biodiversity.	
Mitigable	High	Mitigation exists and will considerably reduce the significance of impacts
Potential mitigation	❖ Vegetation clearing along road verges should be kept to a minimum, and avoided in areas where it poses no risk to vehicles. ❖ During routine maintenance of infrastructure on the property, adequate management of materials should be implemented to reduce any unnecessary habitat loss. For footprint of the developments as far as possible to reduce additional damage to the natural (undisturbed) surroundings. Any old/removed building materials or rubble should be removed from site as soon as possible during maintenance activities and disposed of appropriately off-site. This will reduce the amount of additional space (natural surrounding habitat) lost or damaged for unnecessary storage of materials ❖ It is a requirement by law than an alien and invasive plant management plan be developed and implemented on the property. ❖ No insect zappers should be allowed on site, nor the general application of insecticides around infrastructure. Ecofriendly repellents are readily available (i.e. citronella oil/lotions) and should be used instead.	

	❖ Emergency & cleaning supplies for waste spillage or fires should be accessible at each development proposed development on the property (e.g., keep lime, spades, first aid, fire extinguishers, etc. handy). Rainwater tanks can also be a useful source of water to aid in extinguishing fires, provided the water is readily accessible. ❖ All staff and guests to the property must be properly trained and made aware of activities that are not allowed on the property. ❖ Limited additional vegetation clearing should take place on the property for activities, even if these are low impact, as the cumulative effects can be substantial (i.e. camping grounds, mountain biking/hiking trails, picnic areas). ❖ The establishment of indigenous gardens or the complete absence of gardens (i.e. fully rehabilitating any disturbed areas) within the footprints of the development will promote natural biodiversity.			
Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Negative	
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	Very Limited	Extending only as far as the development site area
Intensity	Medium	Natural and/or social functions and/or processes are notably altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Possible	Has occurred here or elsewhere and could therefore occur	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	Partly reversible	the impact is reversible but more intense mitigation measures are required	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Low	Marginal loss, the resource is not damaged irreparably or is not scarce	Low	Marginal loss, the resource is not damaged irreparably or is not scarce
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	The development on the site could alter the natural area on the property through changes in vegetation clearing associated with the maintenance and operation of housing and road infrastructure or possibly the introduction of alien plants. For the most part habitat alterations will be restricted to the immediate surroundings of the roads (i.e. road verge clearing) and houses (i.e. clearing/trimming vegetation around houses) but any impacts associated with alien plant invasions can have landscape level impacts.			

Project Phase	**Operation**	
Impact	**Disturbance of fauna due to noise and lighting associated with residential units.**	
Description of impact	❖ The creation of a landscape of fear for fauna where areas of the property are avoided due to excessive anthropogenic activity, predominantly noise. ❖ Light pollution acts as an attractant to many insects and associated predators, putting all at risk.	
Mitigable	Medium	Mitigation exists and will notably reduce significance of impacts

Potential mitigation	❖ Light pollution must be reduced and avoided wherever possible during the operational phase of the project. White LED lights have the worst negative effects for the environment, therefore dimmer lights with more natural warm light colours must be used, and no bright torches used outside the house at night unnecessarily. ❖ Permanent lighting along roads must be avoided. Given the low traffic volumes expected for this development, road-side lighting along the access roads is unnecessary and will cause avoidable impacts on biodiversity, particularly increasing the risk of roadkill. ❖ Noise should be minimised on the site and loud sirens/alarms should not be permitted unless there is an emergency. If security is a concern, then a silent alarm system should be implemented i.e. motion detection cameras.			
Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Negative	
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	Very Limited	Extending only as far as the development site area
Intensity	Medium	Natural and/or social functions and/or processes are notably altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Possible	Has occurred here or elsewhere and could therefore occur	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	Partly reversible	the impact is reversible but more intense mitigation measures are required	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Low	Marginal loss, the resource is not damaged irreparably or is not scarce	Low	Marginal loss, the resource is not damaged irreparably or is not scarce
Significance	**Low negative (-)**		**Negligible**	
Comment on significance	The development on the site will alter the disturbance regime of the largely natural area on the property through changes in noise and artificial lighting levels. For the most part, these disturbances will be restricted to the immediate surroundings of the roads (i.e. traffic noise) and houses (i.e. people talking/shouting, music). However, this can have a significant impact on biodiversity and alter the way fauna use the landscape (i.e. the creation of a landscape of fear resulting in animals avoiding certain habitats/areas around human disturbances; insects attracted to lights decreases their survival, negatively impacts on the ecosystem services they provide and has negative knock-on consequences for their associate predators).			

Project Phase	**Operation**
Impact	**Human-wildlife conflict**
Description of impact	❖ Intentional harm or death of problem or pest animals due to their negative effects on people (or pets) living on the property. ❖ Unintentional harm or death of animals due to them consuming waste/food products which are bad for their health. ❖ Pets causing death/harm to indigenous wildlife.

	❖ Changes in natural foraging and movement patterns of fauna across habitats within the landscape due to the presence of a favourable resource (usually food) near the development. This can have knock-on effects for the ecosystem services they provide and their associated predators.	
Mitigable	High	Mitigation exists and will considerably reduce the significance of impacts
Potential mitigation	❖ No feeding of wildlife is permitted, and no disposal/discarding of any food waste (bones, scraps, fruit pips/cores) within the surrounding environment is allowed. ❖ All food waste or general waste should be kept in a secure location (i.e. a lockup cage or sealed outside room) which is not accessible to any wildlife. ❖ All waste should be stored in a double-container fashion, in such a way that it does not serve as an attractant to wildlife attempting to access the secure location (i.e. all waste products put into closed/sealed rubbish bags/containers and then placed within larger sealed containers/bins). ❖ Given that the waste area is secured against wildlife accessing it, allowances should still be made for the unlikely event that an animal does access the waste storage area, so that the waste is not easily accessed (i.e. use wildlife-proof dustbins/containers or lock the lids of larger containers). The double-container storage of waste (mentioned above) also prevents easy access of waste products to fauna, with all rubbish bags to be stored inside more solid containers. ❖ All waste, particularly food waste, should be regularly removed from the property and disposed of appropriately to prevent the scent of old products increasing the attractiveness to the disposal area and surrounding development for wildlife. ❖ Residents on the property should be limited in their ability to keep pets (i.e. how many pets and what types of pets). It is highly recommended that no cats be allowed on the property as they are known to actively hunt small animals and can have detrimental effects on the wildlife of an area. If dogs are kept on the property, they should be contained within the vicinity of the residence areas and not be allowed to wander the entire property unsupervised as they may hunt and kill fauna species or be exposed to risks from wildlife fauna	

Assessment	**Without mitigation**		**With mitigation**	
Nature	Negative		Negative	
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	Very Limited	Extending only as far as the development site area
Intensity	High	Natural and/ or social functions and/ or processes are significantly altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Definite	There are sound scientific reasons to expect that the impact will occur	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	Partly reversible	the impact is reversible but more intense mitigation measures are required	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Low	Marginal loss, the resource is not damaged irreparably or is not scarce	Low	Marginal loss, the resource is not damaged irreparably or is not scarce

Significance	Medium negative (-)	Negligible
Comment on significance	Some wild animals are attracted to human developments, usually due to the presence of a resource that has become available within the footprint of the development (i.e. food attracting baboons, leftover scraps attracting wild animals if disposed in the surrounding environment). If any animal becomes habituated or loses their fear of humans, they risk becoming pests and problem animals (sometimes even posing a risk to humans) and often require control, in severe cases resulting in their harm or death. Keeping pets on the premises can also increase the potential for human-wildlife conflict as pets can fight or kill animals (i.e. cats are known to be devastating for indigenous wildlife, especially birds, small mammals and reptiles), or be attractive to some animals as prey (i.e. leopard are known to take domestic cats and dogs occasionally). Pets also run the risk of being harmed by wildlife (i.e. snake bites) which can lead to owners wanting to control or harm the natural fauna of the area.	

Project Phase	Operation			
Impact	Visual / Sense of place			
Description of impact	Visual impacts of structures / aesthetic consequences due to incorrect or excessive lighting, especially outdoor lighting			
Mitigable	Medium	Mitigation exists and will notably reduce 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 removal and follow-up operations of invasive alien plants. ❖ Outside lighting should be designed and limited to minimise impacts on fauna. All outside lighting should be directed away from any sensitive areas. Fluorescent and mercury vapor lighting should be avoided, and sodium vapor (green/red) lights should be used wherever possible			
Assessment	Without mitigation		With mitigation	
Nature	Negative		Negative	
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Medium Term	Impact will last between 2 and 15 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 slightly altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Probable	It is most likely that the impact will occur	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	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Not relevant		Not relevant	
Significance	Low negative (-)		Negligible	
Comment on significance	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.			

Project Phase	Operation			
Impact	**Stormwater Management**			
Description of impact	Accelerated erosion / pollution into sub-surface water.			
Mitigable	High | Mitigation exists and will considerably reduce the significance of impacts			
Potential mitigation	❖ A sustainable stormwater design must be implemented to prevent excessive run-off that will lead to erosion of the surrounding landscape. ❖ Stormwater generated on site should be managed according to Sustainable Drainage System (SuDS) principles. This requires that as much stormwater as possible should be attenuated within the development footprint. The following measures, *inter alia*, should be considered: o Rainwater harvesting tanks must be installed; o Use of swales and detention ponds to attenuate stormwater runoff, encourage infiltration and reduce the speed, energy and volumes at which stormwater is discharged from the site; o Use of permeable paving to encourage infiltration into the soil; and o Use of retention ponds and artificial wetlands to capture stormwater runoff and prevent its discharge from the site.			
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	Extending only as far as the development site area
Intensity	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	Probable	It is most likely that the impact will occur	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	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	**Low negative (-)**		**Negligible**	
Comment on significance	A key impact related to residential developments is the generation of large volumes of stormwater associated with an increased area of impermeable surfaces (i.e. roads, roofs and other infrastructure). Stormwater is typically conveyed into watercourses, where high volumes (and associated high energy) cause degradation of watercourses, mainly due to the erosion of the bed and banks. In this respect given the steep slopes within the property, even though the drainage line is located outside of the development footprint, it is potentially vulnerable to stormwater 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	❖ 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. ❖ 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	Medium	Natural and/or social functions and/or processes are notably altered	Medium	Natural and/or social functions and/or processes are notably altered
Probability	Definite	There are sound scientific reasons to expect that the impact will occur	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	Barely reversible	the impact is unlikely to be reversed even with intense mitigation measures	Completely reversible	the impact can be reversed with the implementation of minor mitigation measures.
Resource irreplaceability	Not relevant		Not relevant	
Significance	**Medium negative (-)**		**Low positive (+)**	
Comment on significance	Erf 301 also didn't have a marked invasive presence. Only one large black wattle (*Acacia mearnsii*) tree was seen on the site. Some black wattles were also seen outside of the development footprint in the valleys flanking the east and west, but it was not a big invasion and still very manageable. Ongoing monitoring and clearing of invasive plants should occur. A detailed plan is not required for Erf 301, as the invasive plants on the site are minimal, and can easily be cleared. The control of AIP on the property has a positive impact on biodiversity.			