

# BASIC ASSESSMENT REPORT

DEPARTMENT OF ECONOMIC DEVELOPMENT, ENVIRONMENTAL AFFAIRS AND TOURISM, PROVINCE OF THE EASTERN CAPE

## **Direct impacts:**

*Issue 1:* Destruction of vegetation at construction sites

*Cause and comment:* During construction it is often necessary to clear more land than will eventually form the development footprint due to construction activities. Construction also requires lay down areas and areas designated for particular construction activities such as cement mixing and storage of construction materials.

*Significance statement:* Cleared areas will not be large and this is therefore considered to be of moderate significance and can be easily mitigated to low significance.

## **Indirect impacts:**

*Issue 2:* The spreading of alien vegetation from areas where it occurs to areas not yet invaded.

*Cause and comment:* the construction of the units and roads could result in increased levels of alien infestation particularly in areas not yet invaded. This is partly due to construction vehicles which could transfer aliens (in the form of seeds) from one footprint to another and partly due to the disturbance of soils which could allow alien species to establish. In addition landscaping could introduce aliens through soil and seeds transported from other areas.

*Significance statement:* This is of moderate significance but can be mitigated to low significance and potentially to a moderate positive impact if mitigation results in fewer aliens than is currently found in the area.

*Issue 3:* Disturbance of naturally occurring wildlife.

*Cause and comment:* The construction phase may disturb wildlife e.g. nesting and territorial birds, territorial mammals and other animals, including subterranean animals.

*Significance statement:* This is of moderate significance as the construction period will be relatively short, and most animals will be able to move to different areas while construction is in progress.

*Issue 4:* Removal of topsoil and soil erosion.

*Cause and comment:* The construction of the housing units will increase the chances of soil erosion.

*Significance statement:* This impact is considered to be moderate but can be mitigated to low significance.

## **Cumulative impacts:**

### **3.2.3. OPERATIONAL PHASE**

## **Direct impacts:**

## **Indirect impacts:**

*Issue 1:* Increased transfer of alien vegetation from invaded to non-invaded areas

*Cause and comment:* Alien species that use animals as vectors can be spread and establish in non-invaded areas, particularly areas that have been disturbed during construction and are therefore vulnerable.

*Significance statement:* With mitigation measures, this is likely to be of low significance.

## **Cumulative impacts:**

*Issue 2:* General disturbance of natural vegetation

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*Cause and comment:* when game viewing or for other purposes, residents may leave the road and drive/walk over the natural vegetation in order to see game better etc. this can result in destruction of vegetation and compaction of soil and root systems, especially during or after rainfall events. These temporary roads can be visible for a long time afterwards, and may eventually become new roads.

*Significance statement:* This is considered to be of low significance and can be mitigated through correct practice.

## 3.3. MITIGATION MEASURES THAT MAY ELIMINATE OR REDUCE THE POTENTIAL IMPACTS LISTED ABOVE

### 3.3.1. PLANNING AND DESIGN PHASE

*Issue 1:*

The units have been placed in such a way as to maintain the sense of isolation and privacy within a natural environment that is the motivation for the development. Natural vegetation and topography will be used as a screen.

All homeowners will have to follow certain building design guidelines that reduce visibility, and allow residential units to blend into the natural landscape. No high standing lights will be allowed, and all outside lights will need to be down lighting to reduce light visibility.

*Issue 2:*

To avoid pollution in the streams, residential units and septic tanks will be planned to avoid both the stream and its potential catchment area. To ensure that this is so, the geological specialist will be consulted during the design phase and will assist homeowners in planning their sewage sites for each erf.

*Issue 3:*

Confine survey lines to smallest possible area and alignment should avoid sensitive vegetation. The vegetation specialist should be consulted before the road is planned to indicate which vegetation is sensitive. This vegetation will be marked as no-go and avoided by surveyors and any construction activities.

### 3.3.2. POTENTIAL ACTIVITY/ TECHNOLOGY ALTERNATIVE

#### 3.3.2.1. Planning Phase

*Issue 1:*

The development footprint of each erf should be positioned in such a way as to reduce the area of vegetation that will be affected. As far as possible, sensitive vegetation will be avoided. Where units are placed inside the natural vegetation, the existing vegetation will be maintained as far as possible and used as part of the landscaping aesthetics and as natural screening. Footprints to be designed around large trees wherever possible. Open space areas and natural corridors will be maintained to protect indigenous vegetation and animals.

A Plant Rescue and Translocation Programme should be implemented where disturbance levels are considered high. A botanist should be employed to identify and/or mark any protected species or species of special concern. In addition, these plants can be used to further screen units from one another in areas where the natural vegetation has been disturbed or no longer exists.

E.g. to rehabilitate the old farmlands which are currently open grasslands.

*Issue 2:*

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Erosion as a result of runoff can be mitigated through the adequate provision of gutters and the collection of runoff into rainwater tanks for household water use. In terms of pathways, log and wire barriers/steps can be constructed where the gradient is steep and erosion is likely. Indigenous vegetation can also be planted to curb erosion. Trails should follow the contour of the landscape as far as possible. Residents/employees must keep to pathways/trails.

### **3.3.2.2. Construction Phase**

#### *Issue 1:*

Lay-down areas must be carefully planned and properly designated with adequate space and fencing. Any roads created to units must be those that will eventually form part of the development. The construction footprint must, wherever possible, not extend beyond the boundaries of the final footprint.

#### *Issue 2:*

Mitigation measures to avoid transfer or establishment of aliens will be included in the Construction EMP. Landscaping will be limited to plants which require relocation during the construction period. Any planting must be done with plants propagated from local seed stock or cuttings. If purchased, the plant material must be specific/indigenous to the area. In addition, the Conservancy Trust will be required to remove all aliens established within the footprints. All existing and new alien vegetation must be removed immediately. Residents/the Conservancy Trust must be educated regarding alien vegetation identification and management. Should the problem of alien eradication prove ineffective, 'Working for Water' should be approached for assistance with alien clearing.

#### *Issue 3:*

As far as possible animals should not be disturbed. Nesting birds should be allowed to fledge their young. Whenever possible, animals should be relocated to a similar, undisturbed area. Catching, trapping, killing etc of wild animals by construction or any other staff members will be strictly forbidden.

#### *Issue 4:*

Only minimal vegetation clearing will be permitted within the construction area. Only the development footprints must be cleared and disturbed areas must be rehabilitated as soon as possible. Large trees should be removed only if absolutely necessary. No disturbed soil should be left exposed. It should be mulched and revegetated.

### **3.3.2.3. Operational Phase**

#### *Issue 1:*

An alien removal programme will be implemented, which will decrease the alien vegetation in the area. This will be coupled with a re-vegetation programme will also ensure that there are less open areas for aliens to establish themselves.

#### *Issue 2:*

The use of vehicles should be restricted to the designated roads. The design of the development should consider the construction of designated footpaths through appropriate bush clearing, using existing paths or creating boardwalks where necessary. The vegetation specialist will be consulted to design these footpaths through the nature reserve. Footpaths will be placed to avoid sensitive vegetation. They will be regularly maintained, and any further footpaths that are requested will be designed under the supervision of the vegetation specialist. The Belton Conservancy Trust will be responsible for ensuring that footpaths are not created, and should any

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occur, they are to be repaired and the natural vegetation reinstated.

## **Direct impacts:**

*Issue 1:* Stress on local vegetation types due to increased grazing by introduced game.

*Cause and comment:* The vegetation surrounding the proposed development is made up of Succulent and Xeric Thicket as well as grasslands. Increased numbers of game would have an impact on this vegetation, especially if large game such as elephants are introduced to attract tourists.

*Significance statement:* This would be of high significance, but can be reduced to moderate with the appropriate mitigation measures.

## **Indirect impacts:**

*Issue 2:* Game competing with cattle for grazing

*Cause and comment:* Introduced game may end up competing with cattle over grazing, especially during dry periods.

*Significance statement:* This would be a moderate impact that can be reduced to low significance with the correct mitigation measures.

*Issue 3:* General disturbance of natural vegetation

*Cause and comment:* when game viewing or for other purposes, residents may leave the road and drive/walk over the natural vegetation in order to see game better etc. this can result in destruction of vegetation and compaction of soil and root systems, especially during or after rainfall events. These temporary roads can be visible for a long time afterwards, and may eventually become new roads.

*Significance statement:* This is considered to be of low significance and can be mitigated through correct practice.

## **Cumulative impacts:**

### **3.3.3. CONSTRUCTION PHASE**

A project specific Construction Environmental Management Plan (EMP) containing mitigation measures must be compiled. This should guide the construction process from inception to completion.

*Issue 1:*

Vegetation clearing during construction should be kept in designated areas i.e. where camps are to be built and housing sites. Construction should avoid sensitive vegetation.

*Issue 2:*

Construction should be done during working hours only to avoid making noise at night when other residents are resting. All construction equipment and vehicles should be installed with proper noise reduction equipment to ensure that noise created during construction is kept to a minimum.

*Issue 3:*

Vehicles should be allowed to drive on designated roads only. Compaction of soil as a result will only happen on the roads.

*Issue 4:*

Rubble/ solid waste that will be produced during construction will be re-used in most cases and where it is not possible it will be taken to a municipal dump site.

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## *Issue 5:*

The positive impact of job opportunities can be enhanced by ensuring that most of the opportunities are given to local people except where there are no skills. BEE companies should also get preference when it comes to awarding construction tenders. Appropriate management of job expectations, including discussions with construction companies regarding local labour requirements, and discussions with local people regarding actual job opportunities.

## *Issue 6:*

Construction activities, including camps, are to be located at least 50 metres from dams and streams and not on gradients exceeding 1:6; No structures are to be located within the 1:100 year flood line; All water bodies, wetlands and river systems are to be considered No-go areas for construction workers; All major repairs and servicing of plant and construction machinery should be undertaken offsite; Utilisation of drip trays to prevent oil or fuel spills in case of an on-site emergency maintenance; All concrete batching to be conducted on impermeable sheet material; Temporary ablution facilities must be provided on site for construction workers; and Appropriate waste and sewage collection and disposal procedures and facilities are to be implemented at the construction camps.

## *Issue 7:*

As far as possible local labour must be employed in the proposed development. The Belton Conservancy Trust should also have a capacity building programme to ensure that local people gain the necessary skills to work on the development.

### **3.3.4. OPERATIONAL PHASE**

## *Issue 1:*

This impact can be made into a positive impact by ensuring that, as far as possible, employment opportunities are given to previously disadvantaged persons.

## *Issue 2:*

The Belton Conservancy Trust should develop a programme of alien vegetation removal to ensure removal of alien invasive plants. Partnerships can be established with programmes such as the Working for Water programme.

## *Issue 3:*

The developers must ensure that the numbers of stock whether game or cattle if the proposed development is not authorised, should be kept to a minimum to avoid any further pressure on natural vegetation.

## *Issue 4:*

The Conservancy Trust should ensure that it manages the collection of fuel wood in the area and where possible other sources of energy be made available for people living in the farm.

## *Issue 5:*

The proposed development can create employment opportunities to counter job losses that occur as a result of loss of agricultural land in the province. The development has an ability to employ more people that are currently employed in the farm.

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## *Issue 6:*

The change from cattle farming to game farming can help mitigate against soil erosion as a result of cattle paths. Game can be introduced in phases to limit impacts on soil. Game farming has also the advantage of needing less care as compared to cattle farming.

## *Issue 7:*

The proposed development will engage in farming practices that will promote water conservation. For example, cement made drinking canals to reduce loss of water.

### **3.4. PROPOSED MANAGEMENT OF IMPACTS AND MITIGATION**

During the planning and construction phases, the developer together with an independent, suitably qualified person (s) will be responsible for the monitoring of the impacts and mitigation. A construction Environmental Management Plan (EMP) must be compiled and strictly adhered to.

During the operational phase, the home owners' Conservancy Trust will be responsible for financing management functions, environmental auditing and conservation.

An operational Environmental Management Plan (EMP) must be compiled and strictly adhered to.

An Environmental Control Officer (ECO) will monitor identified impacts and mitigation measures.

During the planning and construction phases, the developer together with an independent, suitably qualified person (s) will be responsible for the monitoring of the impacts and mitigation. A construction Environmental Management Plan (EMP) must be obtained and strictly adhered to.

During the operational phase, the developer will be responsible for financing management functions, environmental auditing and conservation.

An operational Environmental Management Plan (EMP) must be obtained and strictly adhered to.

An Environmental Control Officer (ECO) will monitor identified impacts and mitigation measures.

### **3.5. CONCLUSION**

Considering mitigation measures, 1 low – no impact, 16 low impacts, 1 low positive impact, 2 moderate to low impacts, 2 moderate impacts and 3 moderate positive impacts were identified.

Given that the remainder of the area will be protected, that the units will be placed in disturbed or invaded areas as far as possible, the creation of jobs for local people during operation, the rehabilitation of old lands and the removal and control of alien vegetation, it is possible that the development will have a moderate positive impact locally, but a low positive impact on a larger scale due to the small area of land involved.

The impacts are on a small part of the total Belton Farm. Most of the impacts would be as a result of the construction of the development, with the impacts of the

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operational phase being minimal / low in significance. With management and mitigation of the identified impacts, the significance of the overall impact of the development should be low / minimal. The duration of impacts resulting from construction is short term and should only last for approximately 6 months. Owing to the fact that no other alternative sites were investigated in this assessment, site 1 is found to be suitable

## Alternative A (preferred alternative)

### 3.6. IMPACTS THAT ARE LIKELY TO OCCUR AS A RESULT OF THE

#### 3.6.1. PLANNING AND DESIGN PHASE

##### 3.6.1.1 Impacts of two Road Alternatives

With respect to Alternative 1 there will be less impact at the site as construction of roads. Although the road is longer, it will not traverse the sensitive valley between the two clusters of units. There will thus be less impact on the natural vegetation and the stream with this alternative. There may be a slightly higher impact with respect to the creation of tracks and paths between the two clusters of units but this impact will probably be low.

Alternative 2 has less road length but the higher impact of construction of a road along the contour and across the stream to link the two clusters of units. This impact will, although low to moderate, have a higher impact than alternative 1.

Thus, alternative 1 is regarded as the more favourable option.

#### 3.6.2. THE CONSTRUCTION PHASE

#### 3.6.3. OPERATIONAL PHASE

### 3.7. POTENTIAL ACTIVITY/TECHNOLOGY ALTERNATIVE RELATED IMPACTS

#### 3.7.1. PLANNING AND DESIGN PHASE

##### **Direct impacts:**

*Issue 1:* Destruction of natural vegetation for surveying

*Cause and comment:* it is inevitable that in certain areas, natural vegetation will have to be removed to make way for survey lines

*Significance statement:* This is of moderate significance, but can be mitigated to be of low significance..

##### **Indirect impacts:**

*Issue 2:* Erosion

*Cause and comment:* Increased runoff due to increase in hard surfaces such as roofs and roads as well as cut structures such as pathways have the potential to increase soil erosion in the areas immediately down slope of the units.

*Significance statement:* this is of moderate significance and can be mitigated to low significance.

##### **Cumulative impacts:**

#### 3.7.2. THE CONSTRUCTION PHASE

##### **Direct impacts:**

*Issue 1:* Destruction of vegetation for construction of lodges, roads, pipelines and

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game viewing platforms

*Cause and comment:* During construction it is often necessary to clear more land than will eventually form the development footprint due to construction activities. Construction also requires lay down areas and areas designated for particular construction activities such as cement mixing and storage of construction materials.

*Significance statement:* Cleared areas will not be large and this is therefore considered to be of moderate significance and can be easily mitigated to low significance.

### **Indirect impacts:**

*Issue 2:* The spreading of alien vegetation from areas where it occurs to areas not yet invaded.

*Cause and comment:* the construction of the units and roads could result in increased levels of alien infestation particularly in areas not yet invaded. This is partly due to construction vehicles which could transfer aliens (in the form of seeds) from one footprint to another and partly due to the disturbance of soils which could allow alien species to establish. In addition landscaping could introduce aliens through soil and seeds transported from other areas.

*Significance statement:* This is of moderate significance but can be mitigated to low significance and potentially to a low positive impact if mitigation results in fewer aliens than is currently found in the area.

*Issue 3:* Disturbance of naturally occurring wildlife.

*Cause and comment:* The construction phase may disturb wildlife e.g. nesting and territorial birds, territorial mammals and other animals, including subterranean animals.

*Significance statement:* This is of moderate significance as the construction period will be relatively short, and most animals will be able to move to different areas while construction is in progress.

*Issue 4:* Removal of topsoil and soil erosion.

*Cause and comment:* The construction of the housing units will increase the chances of soil erosion.

*Significance statement:* This impact is considered to be moderate but can be mitigated to low significance.

### **Cumulative impacts:**

#### **3.7.3. OPERATIONAL PHASE**

## **3.8. MITIGATION MEASURES THAT MAY ELIMINATE OR REDUCE THE POTENTIAL IMPACTS LISTED ABOVE**

### **3.8.1. PLANNING AND DESIGN PHASE**

#### **3.8.2. POTENTIAL ACTIVITY/ TECHNOLOGY ALTERNATIVE**

##### **3.8.2.1. Planning Phase**

*Issue 1:*

A Plant Rescue and Translocation Programme should be implemented where disturbance levels are considered high. A botanist should be employed to identify and/or mark any protected species or species of special concern. In addition, these plants can be used to further screen units from one another in areas where the natural vegetation has been disturbed or no longer exists.



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E.g. to rehabilitate the old farmlands which are currently open grasslands.

## *Issue 2:*

Erosion as a result of runoff can be mitigated through the adequate provision of gutters and the collection of runoff into rainwater tanks for household water use. In terms of pathways, log and wire barriers/steps can be constructed where the gradient is steep and erosion is likely. Indigenous vegetation can also be planted to curb erosion. Trails should follow the contour of the landscape as far as possible. Residents/employees must keep to pathways/trails.

### **3.8.2.2. Construction Phase**

## *Issue 1:*

Lay-down areas must be carefully planned and properly designated with adequate space and fencing. Any roads created to units must be those that will eventually form part of the development. The construction footprint must, wherever possible, not extend beyond the boundaries of the final footprint.

## *Issue 2:*

Mitigation measures to avoid transfer or establishment of aliens will be included in the Construction EMP. Landscaping will be limited to plants which require relocation during the construction period. Any planting must be done with plants propagated from local seed stock or cuttings. If purchased, the plant material must be specific/indigenous to the area. In addition, the Conservancy Trust will be required to remove all aliens established within the footprints. All existing and new alien vegetation must be removed immediately. Residents/the Conservancy Trust must be educated regarding alien vegetation identification and management. Should the problem of alien eradication prove ineffective, 'Working for Water' should be approached for assistance with alien clearing.

## *Issue 3:*

As far as possible animals should not be disturbed. Nesting birds should be allowed to fledge their young. Whenever possible, animals should be relocated to a similar, undisturbed area. Catching, trapping, killing etc of wild animals by construction or any other staff members will be strictly forbidden.

## *Issue 4:*

Only minimal vegetation clearing will be permitted within the construction area. Only the development footprints must be cleared and disturbed areas must be rehabilitated as soon as possible. Large trees should be removed only if absolutely necessary. No disturbed soil should be left exposed. It should be mulched and revegetated.

### **3.8.2.3. Construction Phase**

## *Issue 1:*

Although a certain amount of game will need to be introduced to attract tourists, a game specialist will be consulted on the matter to ascertain the carrying capacity of the land, and which game would be most suitable for the area. Their analysis will take into account the game already present, as well as the sensitivity of the local vegetation.

## *Issue 2:*

The farmer should be aware of the carrying capacity of his land and should not increase the number of cattle past this. The cattle that are currently present have plenty of grazing space elsewhere, and thus do not need to use the grazing around

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the proposed development. During periods of drought both cattle and game should be supplied with additional feed to ensure that over grazing of the indigenous vegetation does not occur.

### *Issue 3:*

The use of vehicles should be restricted to the designated roads. The design of the development should consider the construction of designated footpaths through appropriate bush clearing, using existing paths or creating boardwalks where necessary. The vegetation specialist will be consulted to design these footpaths through the nature reserve. Footpaths will be placed to avoid sensitive vegetation. They will be regularly maintained, and any further footpaths that are requested will be designed under the supervision of the vegetation specialist. The Belton Conservancy Trust will be responsible for ensuring that footpaths are not created, and should any occur, they are to be repaired and the natural vegetation reinstated.

### **3.8.3. CONSTRUCTION PHASE**

### **3.8.4. OPERATIONAL PHASE**

## **3.9. PROPOSED MANAGEMENT OF IMPACTS AND MITIGATION**

### **3.10. CONCLUSION**

Considering mitigation measures, 8 low impacts, 2 low – moderate impacts, 7 moderate impacts, 2 moderate – high impacts and 2 high impacts were identified.

The impact of a game farm will have minimal impact on the environment, although it will not be economically viable, as the area to be developed neighbours the Kariega Park Reserve. There are many small and large game reserves in the surrounding area, and the creation of another, small reserve would not necessarily be successful. A new game farm would have to market itself fiercely to compete in such an environment, especially to retain a year round custom. The client does not have the resources to compete on such a scale.

## **NO-GO ALTERNATIVE (COMPULSORY)**

### **3.11. IMPACTS**

#### **3.11.1. PLANNING AND DESIGN PHASE**

#### ***Direct impacts:***

The no-go alternative requires no planning or design, therefore there will be no impacts from this phase.

#### ***Indirect impacts:***

#### ***Cumulative impacts:***

#### **3.11.2. CONSTRUCTION PHASE**

#### ***Direct impacts:***

The no-go alternative requires no construction, therefore there will be no impacts from this phase.

**Indirect impacts:**

**Cumulative impacts:**

**3.11.3. OPERATIONAL PHASE**

**Direct impacts:**

*Issue 1: Continued decline in income due to failing pineapple industry*

*Cause and comment:* At present, the farming of pineapples in the area is losing viability due to the industry failing as other countries assume the monopoly of the overseas market. Should the proposed development not be given a positive Record of Decision, the land owners may be forced to increase farming activities, find an alternative use for the land or sell the land. Should the farmer increase farming production, this will result in permanent destruction of the natural environment, as new fields will have to be cleared in less disturbed and more pristine habitats. The new fields would also increase erosion and more run-off from fertilisers. The farmer could increase the amount of cattle on the farm, but this would then place stress on the grazing currently available on the farm, and would affect the indigenous vegetation. Should agriculture prove unviable, the farmer may decide to sell, and the present workforce would lose their employment. In this case, the farm would be at the risk of more intensive development, possibly with the greater division of agricultural land into residential plots.

*Significance statement:* This would be of moderate to high significance, with the impact increasing over time, especially if the pineapple market does not improve for Eastern Cape farmers.

**Indirect impacts:**

*Issue 2: Continued invasion by alien invasive plants.*

*Cause and comment:* The natural vegetation currently has a presence of alien invasive species such as pine trees (*Pinus pinaster*), kikuyu grass (*Pennisetum cladestinium*) and goat apple (*Solanum spp*).

Should the development go ahead, part of the annual residential fees will go towards an alien eradication programme. If the development does not go ahead there will be no funds for this programme, and aliens will continue to invade the indigenous bushveld.

*Significance statement:* This will be of moderate significance, with the impact increasing through time.

*Issue 3: Increased pressure on natural areas for grazing*

*Cause and comment:* Should the development not go ahead, there is a possibility that in the future there would be an increased pressure on natural areas on the farm, including the land where the development is proposed. An increased number of cattle being run on the land would have an impact on indigenous vegetation in natural areas that have previously had little disturbance.

*Significance statement:* Although there is little possibility of this impact occurring in the present, it could become a possibility in the future should the pineapple industry continue to fail, and increasing the number of cattle becomes necessary to retain the financial viability of the farm. It is therefore of low – moderate significance.

*Issue 4: Increased stress on indigenous vegetation such as thicket for non-sustainable wood for fuels*

*Cause and comment:* Should the development not go ahead, there is a possibility that in the future there would be an increased pressure on natural areas on the farm,

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including the land where the development is proposed. This could be due to the collection of non-sustainable wood from the area for fuel. This would impact on indigenous vegetation and fauna in natural areas that have previously had little disturbance.

*Significance statement:* Although there is little possibility of this impact occurring in the present, it could become a possibility in the future should the pineapple industry continue to fail, and as the human population of the area increases over time. It is therefore of low – moderate significance.

### **Cumulative impacts:**

*Issue 5: Cumulative impact of loss of agricultural land in the region*

*Cause and comment:* There is already a decline in agriculture in the Eastern Cape, as more farmers sell their land either to developers, or private game reserves. Less agriculture in the region means a loss of employment, as well as a rise in food prices, as more food will have to be imported to the region.

*Significance statement:* This would be of moderate to high significance, with the impact increasing over time, especially if the pineapple market does not improve for Eastern Cape farmers.

*Issue 6: Erosion*

*Cause and comment:* Erosion due to cattle paths and fallow land is a common effect of farming practices and would be expected here. This would make the land less attractive for future development, if the proposal is revisited at a later stage.

*Significance statement:* This is of low significance, and can only be mitigated through conscientious farming practices.

*Issue 7: Water requirements*

*Cause and comment:* Farming practices in general require higher volumes of water than other practices e.g. the proposed development. Increased agricultural practices will result in an even greater water requirement. This may be exacerbated by the current threat of global warming and associated long-term droughts.

*Significance statement:* This is of moderate significance and cannot easily be mitigated.

## **3.12. ACTIVITY/TECHNOLOGY ALTERNATIVE RELATED IMPACTS**

### **3.12.1. PLANNING AND DESIGN PHASE**

#### ***Direct impacts:***

The no-go alternative requires no activity/technology, therefore there will be no impacts from this phase.

#### ***Indirect impacts:***

#### ***Cumulative impacts:***

### **3.12.2. CONSTRUCTION PHASE**

#### ***Direct impacts:***

The no-go alternative requires no construction, therefore there will be no impacts from this phase.

#### ***Indirect impacts:***

***Cumulative impacts:***

**3.12.3. OPERATIONAL PHASE**

***Direct impacts:***

No potential activity, therefore no impacts.

***Indirect impacts:***

***Cumulative impacts:***

**3.13. MITIGATION MEASURES THAT MAY ELIMINATE OR REDUCE THE POTENTIAL IMPACTS LISTED ABOVE**

**3.13.1. PLANNING AND DESIGN PHASE**

**3.13.2. CONSTRUCTION PHASE**

**3.13.3. OPERATIONAL PHASE**

**3.14. PROPOSED MANAGEMENT OF IMPACTS AND MITIGATION**

**3.15. CONCLUSION**

Considering mitigation measures, 1 low impact, 2 low – moderate impacts, 5 moderate impacts, 2 moderate to high impacts and 2 high impacts were identified. The most important impact of this option is that its long-term viability is doubtful which will put the current employees at risk of unemployment. A gradual degradation of the natural environment can be expected.

Should the development not take place, a continual decline in the pineapple industry would mean that the owners may be forced to increase their agricultural activity, which would negatively affect the environment. The indigenous vegetation could also be affected by an increase in grazing, or non-sustainable fuel wood harvesting. Should agriculture prove unviable, the farmer may be forced to sell the land, which would mean a loss of jobs for the current 24 farmworkers and their dependants (about 120 people). There would also be the risk of more intensive developments by any future buyers and/or the division of agricultural land. The no-go option would also mean that there would be a gradual increase in alien vegetation and erosion. There would also be socio-economic impacts, as local people would lose the opportunity to get a job during the construction and operational phase.

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Activity Phase	Impact	Duration of impacts	Likelihood of impacts	Significance of Impacts after Mitigation
<b>Activity 1: Preferred Option</b>				
Planning & Design Phase (Site related impacts)	Disturbance of natural vegetation	Permanent	Will definitely occur	Low
	Visual impact	Permanent	May occur	Low – No
	Pollution of water resources	Permanent	May occur	Low
	Loss of vegetation in surveying for new road access	Permanent	May occur	Moderate – low
	Footpaths created on an ad hoc basis to the dam	Permanent	May occur	Low
Planning and Design Phase (activity/technology related impacts)	Destruction of natural vegetation for housing units and roads	Permanent	Will definitely occur	Moderate – Low
	Erosion	Permanent	May occur	Low
Construction Phase (Site related impacts)	Destruction of vegetation at construction sites	Permanent	Will definitely occur	Low
	Noise pollution from vehicles and construction activities	Temporary	Will definitely occur	Low
	Soil compaction and soil erosion	Permanent	May occur	Low
	Rubble from construction works	Temporary	Will definitely occur	None
	Employment during the construction period	Temporary	Will definitely occur	Moderate-Positive
	Pollution of nearby water bodies	Short term	May occur	Low
	Expectations of jobs by many unskilled workers	Short term	May occur	Low
Construction Phase (activity/technology alternative related impacts)	Destruction of vegetation at construction sites	Permanent	Will definitely occur	Low
	Spreading of alien vegetation	Permanent	May occur	Moderate positive
	Disturbance of wildlife	Temporary	May occur	Moderate
	Removal of topsoil and soil erosion	Permanent	May Occur	low
Operational Phase (Site Relate)	Job Creation	Permanent	Will definitely Occur	Moderate Positive
	Footpaths created on an ad hoc basis	Permanent	May occur	Low
	Stress on municipal services and electricity supply	Permanent	May Occur	Low
	Impact on water sources	Permanent	Will definitely occur	Moderate
	Water pollution of nearby streams and catchment areas	Permanent	May Occur	Low
Operational Phase (Activity/technology related)	Increased transfer of alien vegetation	Permanent	May occur	Low
	General disturbance of natural vegetation	Permanent	May occur	Low
<b>Activity 2: Game reserve with self-catering lodges</b>				
Planning & Design Phase	Destruction of natural vegetation for surveying	Permanent	May occur	Low
	Erosion	Permanent	May occur	Low
Construction Phase	Destruction of vegetation for construction of lodges and roads etc	Permanent	Will definitely occur	low
	Spreading of alien vegetation	Permanent	May occur	low
	Disturbance of wildlife	Temporary	May Occur	Moderate
	Removal of topsoil and soil erosion	Permanent	May occur	Low
Operational Phase	Stress on local vegetation types	Permanent	Will definitely occur	Moderate
	Game competing with cattle for grazing	Temporary	May Occur	Low
	General disturbance of natural vegetation	Permanent	May Occur	Low
<b>Activity 3: 'No Go'</b>				
Planning & Design Phase	Continued decline in income due to falling pineapple industry	Permanent	May occur	High
	Continue invasion by alien invasive plants	Permanent	May occur	Moderate

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Activity Phase	Impact	Duration of impacts	Likelihood of impacts	Significance of Impacts after Mitigation
	Cumulative impact of loss of agricultural land in the region	Permanent	May occur	Moderate - High
	Erosion	Permanent	May occur	Moderate
	Water requirements	Permanent	May occur	Moderate
Construction Phase	No impacts			
Operational Phase	Continued decline in income due to falling pineapple industry	Permanent	May occur	High
	Continue invasion by alien invasive plants	Permanent	May occur	Moderate
	Increased pressure on natural areas for grazing	Permanent	May Occur	Low-Moderate
	Increased stress on indigenous vegetation such as thicket for non-sustainable wool for fuels	Permanent	May Occur	Low-Moderate
	Cumulative impact of loss of agricultural land in the region	Permanent	May occur	Moderate - High
	Erosion	Permanent	May occur	Low
	Water requirements	Permanent	May occur	Moderate

## ROAD IMPACTS

Activity Phase	Impact	Duration of impacts	Likelihood of impacts	Significance of Impacts after Mitigation
<b>Roads Alternative 1: Two access Roads (access to east and west of the development by two separate roads)</b>				
Planning & Design Phase (Site related impacts)	Loss of vegetation in surveying for new road access	Permanent	May occur	Moderate – low
Planning and Design Phase (activity/technology related impacts)	Destruction of natural vegetation for roads	Permanent	Will definitely occur	Moderate – Low
	Erosion in construction of roads	Permanent	May occur	Low
Construction Phase (Site related impacts)	Destruction of vegetation in construction of roads	Permanent	Will definitely occur	Low
	Noise pollution from vehicles and construction activities	Temporary	Will definitely occur	Low
	Soil compaction and soil erosion	Permanent	May occur	Low
	Dust pollution of surrounding vegetation	Temporary	Will definitely occur	Low
	Pollution of nearby water bodies	Short term	May occur	Low
Construction Phase (activity/technology alternative related impacts)	Destruction of vegetation in construction of roads	Permanent	Will definitely occur	Low
	Spreading of alien vegetation	Permanent	May occur	Moderate positive
	Disturbance of wildlife	Temporary	May occur	Moderate
	Removal of topsoil and soil erosion	Permanent	May Occur	Low
	Footpaths and tracks created on an ad hoc basis	Permanent	May occur	Moderate - Low
	Water pollution of nearby streams and catchment areas	Permanent	May Occur	Low
Operational Phase (Activity/technology related)	Increased transfer of alien vegetation	Permanent	May occur	Low
	General disturbance of natural vegetation	Permanent	May occur	Low
<b>Roads Alternative 2: Single access Road (access to site from the east and a connecting road on the contour to the western sites of the development)</b>				
Planning & Design Phase (Site related impacts)	Loss of vegetation in surveying for new road access	Permanent	May occur	Low

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Activity Phase	Impact	Duration of impacts	Likelihood of impacts	Significance of Impacts after Mitigation
Planning and Design Phase (activity/technology related impacts)	Destruction of natural vegetation for roads	Permanent	Will definitely occur	Moderate – Low
	Erosion in construction of roads	Permanent	May occur	Moderate - Low
Construction Phase (Site related impacts)	Destruction of vegetation in construction of roads	Permanent	Will definitely occur	Low
	Noise pollution from vehicles and construction activities	Temporary	Will definitely occur	Low
	Soil compaction and soil erosion	Permanent	May occur	Low
	Dust pollution of surrounding vegetation	Temporary	Will definitely occur	Low
	Pollution of nearby water bodies	Short term	May occur	Moderate - Low
Construction Phase (activity/technology alternative related impacts)	Destruction of vegetation for construction of roads	Permanent	Will definitely occur	low
	Spreading of alien vegetation	Permanent	May occur	low
	Disturbance of wildlife	Temporary	May Occur	Moderate
	Removal of topsoil and soil erosion	Permanent	May occur	Low
	Footpaths and tracks created on an ad hoc basis	Permanent	May occur	Low
Operational Phase	Water pollution of nearby streams and catchment areas	Permanent	May Occur	Moderate
	Dust on local plants along roads	Permanent	Will definitely occur	Low
	Animals affected by road kills	Temporary	Will definitely occur	Low
	Erosion due to run off from roads	Permanent	May occur	Low



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## SECTION E. RECOMMENDATIONS OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES	NO
YES	NO

Is an EMPr attached?

The EMPr must be attached as Appendix F.

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

### **Construction phase:**

#### **1. Construction Environmental Management Plan (EMP)**

Due to the location of the site and its proximity to the areas of natural vegetation and some streams, it is recommended that an EMP is prepared for the construction phase of the project. A suitably qualified Environmental Control Officer should be appointed to ensure the provisions of the EMP are implemented and/or adhered to.

#### **2. Employment**

As far as possible without compromising construction activities, local labour from the surrounding communities should be employed.

#### **3. Visual**

Natural vegetation should be planted as a screen in areas where the units will be visible, e.g. the old lands should be revegetated with indigenous plants.

#### **4. Disturbance of indigenous vegetation**

Before construction commences, the vegetation specialist should indicate which areas of sensitive vegetation should be avoided. These should be demarcated to as 'no -go' areas to avoid confusion during construction. Where possible, indigenous vegetation should be removed before construction, and kept in a nursery. These plants can then be used to screen units, or to revegetate the former cultivated areas after the alien plants have been removed. During construction, as little vegetation as possible should be disturbed. Construction workers and vehicles should stick to marked out paths and areas. On each erf, sensitive vegetation should be avoided, and as much of the natural vegetation as possible should be left, with each housing site clearly marked out. The access site to the house should also be marked out, and should be the only access route used during construction and occupation.

#### **5. Siting of the proposed development**

The site of the proposed development has been carefully chosen to be the most suitable in terms of minimal impact on the environment, while enhancing the sense of place of the region for the developers and consequently the future owners of the proposed houses. Each house will be carefully sited to avoid sensitive vegetation and unstable soil types. The developers have already taken into account the recommendations of the vegetation specialist and the geologist, and have revised the layout plan accordingly.

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## Operational Phase

### **1. Operational Environmental Management Plan (EMP)**

An Operation EMP must be prepared by a suitably qualified person to determine the environmental management roles and responsibilities during the operational phase and how the site will be managed. This should include the rehabilitation and revegetation of disturbed areas and the removal of alien vegetation. In addition, the roles and responsibilities with regards to the waste disposal and sewage facility maintenance etc should be very clearly defined. Home owners, as members of the Belton Conservancy Trust, will need to abide by the regulations set out in the EMP.

### **2. Employment**

Preference should be given to local people for employment in the refuse removal/recycling business, for domestic help at residences, for the alien eradication programme and for revegetation/maintenance work around the units/conservation area

### **3. Disturbance of indigenous vegetation.**

Indigenous vegetation should be disturbed as little as possible. The design should consider the construction of designated footpaths through appropriate bush clearing, using existing paths or creating boardwalks where necessary. The vegetation specialist will be consulted to design these footpaths through the nature reserve. Footpaths will be placed to avoid sensitive vegetation. They will be regularly maintained, and any further footpaths that are requested will be designed under the supervision of the vegetation specialist. The Belton Conservancy Trust will be responsible for ensuring that footpaths are not created, and where they occur, are repaired and the natural vegetation reinstated.

### **4. Removal of alien vegetation.**

Alien removal should take place where aliens have invaded the fallow lands, and a revegetation programme should be implemented to revegetate these areas. The removal of alien vegetation and the revegetation of disturbed areas is seen as an employment opportunity for at least 2 part time positions.

### **5. Gardens.**

There should be no formal gardens, but enhancement of the indigenous vegetation in the vicinity of each house would be in keeping with the nature of the development. Homeowners who wish to water surrounding vegetation should use recycled grey water. Non-indigenous plant should be planted into a container, and invasive plants should not be allowed to be planted.

### **6. Visibility**

Buildings should be designed to blend in with the surrounding vegetation. Building material should include wood and/or stone and cement walls, with green tin/slate roofs. Buildings are limited to a single story, and should be designed to remain visually unobtrusive.

### **7. Energy efficiency**

Energy efficiency should be considered in the design, with such aspects as insulation, energy efficient appliances and lighting. External lighting should be energy efficient, visually non-intrusive, down-cast lighting of low intensity.

Solar power is recommended to supplement electricity requirements, and also to allow homeowners access to at least some power during power shortages.

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### 8. Water harvesting

All buildings are required to harvest rainwater, and should be equipped with at least a 10 000 – 50 000 litre conservancy tank for this purpose. Permanent residents will require more rainwater storage.