

PROJECT BACKGROUND AND OVERVIEW

The project applicant, Scheepersvlakte Farms (Pty) Ltd, proposes to clear ~516ha on the Remainder of Portion 7 of the Farm Scheepers Vlake 98 (~852.12ha), Sundays River Valley Municipality (SRVM), for the cultivation of annual crops (e.g. maize) and the establishment of a variety of citrus, as well as associated infrastructure. The farm is currently zoned Agriculture I (see Chapter One of the Final EIA Report for a Locality Map).

The applicant has obtained a Water Use Licence from DWS for the taking of water from a water resource in terms of Section 21(a) of the National Water Act which entitles them to utilise 650ha (5 850 000m³ per annum) of water from the LSRWUA canal system. In order to irrigate the proposed agricultural development, the construction of a new irrigation water storage dam (140 000m³ storage capacity; 7ha footprint), as well as the installation of irrigation pipelines of varying diameters is required. In addition, to provide support services to the proposed development, a new logistical services area (~6ha footprint) is proposed to be constructed.

Scheepers Vlake Farm is located ~6km north of Sunland, in the SRVM. Access to the farm is proposed via an existing gravel road on the southern boundary of the site which links the farm with the gravel MN50077 road. The nearest boundary of the Addo Elephant National Park is located ~7km east of the farm.

A detailed project description is provided in Chapter Two of this report.

In terms of the NEMA EIA Regulations, 2014 (as amended), published in GN R326, 327, 325 and 324, promulgated under Chapter Five of the National Environmental Management Act (Act 107 of 1998) ("NEMAA"), and published in Government Gazette 40772 on the 7 April 2017, the project requires full Scoping and Environmental Impact Assessment (S&EIA), prior to the commencement of any activities on the site. The applicant appointed Public Process Consultants as the independent Environmental Assessment Practitioner (EAP) to undertake the S&EIA for the project.

OVERVIEW OF THE EIA PROCESS AND PUBLIC PARTICIPATION

This Final EIA Report has been preceded by a comprehensive Scoping Process with the Final Scoping Report (FSR), including the Plan of Study for EIA, being submitted to the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) on the 14 November 2018. On the 19 December 2018 acceptance of the FSR and approval of the Plan of Study for EIA was received from the DEDEAT. This marked the end of the Scoping Phase of the EIA Process. The project then moved into the EIA Phase of the assessment.

The key issues identified during the Scoping Process, which have been the subject of separate specialist assessments during the EIA, are outlined below:

- Biophysical (Biological and Physical) site assessment including:
 - Potential project related impacts on natural vegetation and faunal habitat on the farm.
 - The consideration of any potential impacts on the Addo Elephant National Park and other areas in proximity to the proposed development area set aside for conservation purposes.
 - An aquatic survey to identify and map wetlands and watercourses on the farm.
 - Assign suitable buffers for aquatic resources identified on the farm.
 - Provide comment on the potential impact of the proposed development on Aquatic and Terrestrial CBAs, as identified in the ECBCP.
 - The determination of suitable buffers associated with meeting biodiversity conservation targets specific to the vegetation types on the farm, and in line with those targets indicated by the relevant planning frameworks for the area.
- The undertaking of a Phase 1 Palaeontological and Phase 1 Archaeological Impact Assessment to identify heritage resources, materials and artefacts that occur within the area under assessment and recommendations regarding the conservation thereof.
- The undertaking of a Traffic Impact Assessment to determine the impact of the additional trip generation and the suitability of the proposed access point to ensure safe access and egress from the site.
- The undertaking of a Soil Suitability Assessment in the form of a Reconnaissance Soil Survey, to determine the suitability of the soil for the establishment of citrus orchards and maize, to inform the proposed layout.
- A Visual Impact Assessment to determine the visual impact of the proposed agricultural development on the surrounding area, including the Addo Elephant National Park.
- The undertaking of a Roads and Wet Services Report to determine the footprint of the logistical services area including the pre-sort packhouse and staff housing as well as recommendations for the provision of bulk services (domestic water, stormwater, effluent management) for these facilities.

The primary objective of EIA Phase of the assessment is to present to I&APs and affected/ Juristic Organs of State and State Departments an overview of the predicted impacts, proposed mitigation measures (both positive and negative), closure outcomes, residual impacts of the activity and management actions required to avoid or mitigate the negative impacts; or enhance the positive impacts of the project. As required by the legislation, the Draft EIA Report and Environmental Management Programme

(EMPr) were released for a 30-day I&AP and Authority review period, which extended from the 5 March 2019 to the 5 April 2019. Organs of State / State Departments were provided with a hard copy or electronic (CD or email) copy of the report, whichever they preferred, and the report was made available on the website www.publicprocess.co.za. Comments received from I&APs or Organs of State / State Departments during the 30-day review period are included in the Comments and Responses Trail in Chapter Four of this report and copies thereof are included in Appendix F. The assessment process is currently at the stage where the Final EIA is being submitted to DEDEAT for their decision-making. All I&APs on the project database will be notified in writing of the submission of the Final EIA Report to DEDEAT, as well as the outcome of the decision-making process.

ECOLOGICAL IMPACTS AND RECOMMENDED MITIGATION

- Loss of vegetation and associated habitat due to clearing (biodiversity loss).
- Loss of Critical Biodiversity Area and Ecological Support Area due to clearing of vegetation (biodiversity loss).
- Loss of floral and faunal species of conservation/ special concern due to vegetation clearing and poaching (biodiversity loss).
- Fragmentation and destruction of habitat on Scheepersvlakte Farm due to clearing (biodiversity loss).
- Potential loss of artificial wetland habitat and drainage systems (vegetation along the 1:50 000 drainage areas) (hydrological processes and biodiversity loss).
- Loss and fragmentation of drainage systems (vegetation along the 1:50 000 drainage areas) due to crossings and associated increase in run-off (hydrological processes and biodiversity loss).
- Potential hydrological process impacts on artificial wetland habitat and drainage systems due to increased surface run-off from orchards and associated access roads (erosion, sedimentation, saturation and consequent impacts on biota).
- Potential hydrological process impacts on drainage systems (vegetation along the 1:50 000 drainage areas) due to crossings and associated increase in run-off (hydrological processes and biodiversity loss).
- Potential increased water levels/ saturation in the artificial wetland habitats and drainage systems due to irrigation (hydrological processes).
- Water quality degradation of the artificial wetland habitat and drainage systems due to agricultural run-off high in pollutants (hydrological processes and biodiversity loss).
- Loss of vegetation along drainage areas due to maintenance repairs on the underground water supply pipelines and access roads at crossings (hydrological processes and biodiversity loss).

Potential Cumulative Impacts on the N40D catchment as a result of the proposed development include:

- Cumulative loss of vegetation due to clearing in the N40D catchments (biodiversity loss).
- Potential cumulative loss species of special concern due to clearing in the N40D catchment (biodiversity loss).
- Cumulative loss of riparian CBA and ESA buffers due to clearing of vegetation in the N40D catchments (biodiversity and hydrological process loss)
- Cumulative loss and modification of wetland habitat in the N40D catchments.
- Cumulative impacts on hydrological process of rivers and riparian areas in the N40D catchments (flow, water quality, erosion, sedimentation etc.).

All these impacts can be reduced by implementing the mitigation and management recommendations found in Chapters Six and Seven.

Vegetation, Biodiversity Patterns and Processes

The following recommendations are made with regards to the mitigation and management of impacts on vegetation:

- The biodiversity target areas indicated in Chapter Six should be retained (as per the proposed layout). which allows for a reduced loss of vegetation.
- Retain all the mapped Sundays Doringveld within the No-Go areas.
- The biodiversity No-Go Areas should be set aside for conservation in perpetuity.
- Remove only the required amount of vegetation for citrus/ crop cultivation activities i.e. minimize the extent of bare and exposed soils i.e. indiscriminate clearing should be avoided.
- If windbreaks are required, plant indigenous windbreaks, if possible.
- Existing crossings (across drainage areas) should be utilized as far as possible. In instances where vegetation is cleared to 'formalize' existing and new crossings, rehabilitation should be undertaken using indigenous flora.
- For all roads proposed within biodiversity No-Go areas, limit the width of the road to 4m.
- For any new roads within biodiversity No-Go areas, rehabilitate the equivalent number and length of existing roads within biodiversity No-Go Areas (this equates to an area of approximately 0.3ha or 0.4ha for a 4m or 6m wide road respectively).
- Rehabilitation of disturbed areas post-establishment with indigenous species, if necessary. Plants, however, can be used in the 'rehabilitation' of other disturbed areas that will be retained in the No-Go areas on the Farm. Succulents, such as the Aloes, will be easier to transplant and should be used.
- Rescue and translocation programme to be implemented.

- As many of the species should be rescued and then translocated elsewhere on the farm, noting that other areas outside the proposed agricultural area do support most of these species. It should be acknowledged that some of the species are weedy, pioneer species, which establish easily where disturbance has occurred, especially *Mesembryanthemum aitonis*, *Drosanthemum hispidum*, and *Delosperma* species. Focus should thus be on the Aloes, bulbs and other vygies.
- Permit applications to the Department of Economic Development, Environmental Affairs and Tourism for the protected species.
- Permit application to the Department of Forestry (of Department of Agriculture, Forestry and Fisheries) for the removal of *Sideroxylon inerme* trees.
- Control and management of alien invasive plants, such as *Opuntia ficus-indica* and *O. aurantiaca*, particularly within the No-Go areas; to be viewed as an additional biodiversity offset measure.
- Audit reporting by the Environmental Control Officer during construction/ clearing of cultivation areas.
- Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), where applicable.
- Applicant/ Landowner/ Farm Manager to monitor strict compliance with the biodiversity no-go areas.

Fauna

It is anticipated that the vegetation on the site, as identified by the vegetation specialist, would provide habitat to several small to medium mammal, reptilian and amphibian species. The site is likely also frequented by a variety of avifaunal species. In addition, the wetland habitat associated with the aquatic habitats identified on the farm are also expected to provide significant faunal habitat. It is anticipated that most of the faunal species remaining on the farm will in all likelihood move off to undisturbed portions of the site as soon as site preparation commences.

Approximately 67.28ha (7.9%) of the natural vegetation on site has been modified historically. Thus, most of the vegetation on the farm can be described as near-natural or degraded. At the time of the site visit evidence of bush pig and porcupine presence was noted. Livestock grazing (cattle, sheep and goats) and intensive cultivation were historically undertaken on the farm, however, the livestock grazing apparently terminated ~14 years ago, whereas cultivation occurred in the 1950's.

The following provides recommendations for the management of impacts on fauna:

- The mobile fauna which may be occurring on the site are expected to vacate the area that is to be developed once vegetation clearing and other site preparation activities commence and will seek refuge in intact natural or near-natural areas that are not proposed for development.
- Measures must be implemented to ensure that fauna on site are not harmed during site preparation or operational phase activities associated with the development, e.g. environmental induction process for construction personnel and/ or farm workers.
- Before site preparation and vegetation clearing commences, affected areas must be thoroughly searched for fauna that can be relocated. This is to be undertaken by a professional faunal specialist (with the necessary permits) and released into no-go areas or other suitable refuge areas.
- A professional reptile remover needs to be contacted to remove dangerous reptiles when in conflict with the workers.
- Search and rescue operations before and during the site preparation phase will decrease the impacts considerably.
- Provide fencing that is more permeable to smaller fauna, thus increasing movement through the Farm.
- No fauna encountered on site to be intentionally harmed.
- Implement regular inspections for signs of poaching / illegal harvesting activities on the Farm, e.g. wire snares. All poaching materials to be removed from the property.
- Access to No-Go areas to be restricted to authorised personnel only. Signage to this effect to be erected and a fine system implemented for personnel found to be trespassing.

Aquatic Features (artificial and natural)

No natural wetlands were recorded on the Farm.

The field survey concluded the presence of 14 artificial wetland habitats¹, including the Scheepersvlakte Dam, and a number of dry 1:50 000 drainage areas (Figure 7.4; Table 7.3). The drainage areas are not typical streams/ rivers, but rather 'undefined', meaning that they presented without channel morphology (bed or banks), for the most part. Furthermore, riparian obligates and a marginal or non-marginal zone is not supported in these drainage areas.

A small dam (no. 5) was also recorded. This dam (no. 5) did not present with soil mottling or gleying during the 2017 field survey, despite supporting wetland obligates during the 2014 field survey. Consequently, it was classed as a dam and *not* 'artificial wetland' (artificial wetland, in this instance, would mean 'a dam that supports artificial wetland') due to the lack of wetland soils.

¹ *The National Wetland Classification System (NWCS) classifies wetlands into natural and artificial wetlands. Artificial wetlands are produced anthropogenically; and are not naturally occurring. The NWCS defines a wetland as: an area of marsh, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed ten metres (Ollis et al, 2013; SANBI, 2009).*

The Scheepersvlakte Dam (constructed in 1990) has a side channel (ogee) overflow (40m long), with a concrete spillway. The relevance being, that it will channel excess stormwater run-off during rainfall periods onto the property thus potentially increasing soil moisture levels.

The artificial wetlands, located on the Farm, are considered to be of *Low* ecological importance and sensitivity, whereas the hydro-functional importance is *Low to Very Low*.

The following mitigation and management is recommended to protect the aquatic resources on site:

- Adopt the recommended biodiversity No-Go areas including the 20m buffer around dams with artificial wetland habitat and the drainage areas.
 - The 20m buffer will not apply to Dam no. 5 (not classified as an artificial wetland), as no rare, unique or threatened species or large populations are supported and it is not a natural wetland. The proposed orchard layout avoids this dam.
- Dam no. 5 (not classified as an artificial wetland) could act as a monitoring site, to monitor potential impacts e.g. increased water/saturation and pollution impacts.
- The remaining artificial wetlands (created due to the formation of small livestock dams), to act as monitoring sites, to monitor potential impacts e.g. increased water/saturation and pollution impacts.
- Where existing crossings are utilized and some vegetation is cleared to 'formalize' the access roads, rehabilitate these areas with indigenous flora on site. In addition, limit the width of these crossings to a maximum of 4m.
- Rehabilitate the equivalent number of existing crossings as new crossings within the biodiversity No-Go areas i.e. 3 existing crossings in the biodiversity No-Go areas should be rehabilitated.
- **A water use application to be processed** with the DWS in terms of Section 21(c) and 21(i) of the National Water Act, where **crossings** are proposed.
- **A water use application should not be required** in terms of Section 21(c) and 21(i) of the National Water Act, as it relates to the **orchards** as the orchards are beyond the mapped 1:50 000 drainage areas.
- Audit reporting by the Environmental Control Officer during establishment of citrus orchards and associated infrastructure.
- Compliance with regulations pertaining to the Conservation of Agricultural Resources Act (43 of 1983), which *does not permit cultivation within the flood area of a watercourse or within 10m horizontally outside the flood area of a watercourse*.
- Monitor the buffers and crossings during operations to ensure ongoing compliance.
- An agricultural stormwater and erosion control plan should be developed. This could include:
 - Infiltration swales or narrow linear and shallow trenches (within indigenous grasses or plants) along orchards to minimize impacts on the dams with artificial wetland habitat.
 - Where existing crossings of the drainage areas occur, adequate measures should be implemented, where necessary.
 - Mulching, to increase retention of soil moisture in-situ/ at tree; and if feasible, narrow, indigenous vegetation strips between orchards.
 - Any other mitigation measures for the Scheepersvlakte Dam, as required by the Department of Water and Sanitation, should be adopted.

It is recommended that the following are included as conditions in the Environmental Authorisation:

- No-go areas for development (including aquatic and ecological buffer areas) must be demarcated on site before vegetation clearing commences.
- Any lay-down areas must be contained within the proposed disturbance area and may not encroach on any no-go areas on the site.
- Before site clearing commences, the development area must be surveyed for plant and faunal SSC by a suitably qualified specialist. Plant and faunal species of special concern must be translocated to the remaining patches of intact vegetation or buffer areas on the property. Permits must be obtained from the relevant authorities for the removal or transfer of protected flora and faunal species.
- No fauna encountered on site to be intentionally harmed.
- Exotic plants present on the site, which are listed in CARA (Conservation of Agricultural Resources Act 43 of 1983) or the NEMBA Alien Invasive Species List should be progressively removed from the site. In addition, regular follow-up clearing should be conducted for the duration of the project lifetime to ensure that the No-go areas are kept free of these plants.

All of the ecological impacts (vegetation, faunal and aquatic) that have been rated as having a potential *Medium to High Negative* impact can be mitigated to *Medium* or *Low Negative* or *Neutral*. For further information on the Ecological Impact Assessment and the Aquatic Impact Assessment see Chapters Six and Seven, respectively of the EIA Report.

HERITAGE IMPACTS AND MITIGATION

The study area on the Farm Scheepers Vlake 7/ 98, is largely underlain by Early Cretaceous marine sediments of the Sundays River Formation (Uitenhage Group). This mudrock-dominated succession with subordinate sandstones has yielded rich fossil

assemblages of marine invertebrates (notably molluscs, such as ammonites and bivalves), plant remains (e.g. driftwood), as well as very rare vertebrate remains (e.g. dinosaurs) from the Algoa Basin of the Eastern Cape. Several fossil localities have been recorded along the flanks of the Sundays River Valley to the west of Addo by McLachlan and Anderson (1976) and earlier authors. However, on Farm Scheepers Vlakke 7/ 98, the Sundays River Formation is largely mantled by Neogene (Late Tertiary) river gravels of the Kudus Kloof Formation, as well as by calcrete hardpans and thick alluvial soils that may be up to several meters thick and are, at most, very sparsely fossiliferous. Continental sediments of the Early Cretaceous Kirkwood Formation are mapped along the northern margin of the study area but were not encountered during fieldwork, perhaps due to lack of exposure.

It proved difficult to locate archaeological sites/ materials since most of the area is covered by dense/ impenetrable Thicket vegetation, low bushes and grass. Stone tools were the only archaeological material located and were mainly observed in areas where the river gravel is exposed and top soil has been disturbed by existing tracks, dams or other small-scale farming activities. Regardless of the large areas investigated on foot, no other remains such as bone, ostrich eggshell or pottery were observed. However, it is possible that sites/ materials are covered by vegetation and soil. *All the stone tools were in secondary context and not associated with any other archaeological material and of **low cultural significance**. No further action is required. There are no known graves or buildings older than 60 years on the property. In general, it would appear that the area is of **low cultural sensitivity** and that it is unlikely that any sensitive archaeological remains will be exposed during the development.*

Impacts and Management of Heritage Resources

Significant impacts on fossil heritage resources are, therefore, not anticipated here. No fossil remains were recorded during the site visit within the Cretaceous bedrocks, which are minimally exposed in this region, or from the Late Caenozoic superficial sediments.

The main impact on archaeological sites/ remains (if any) will be the physical disturbance of the material and its context. The clearing of vegetation for the proposed agricultural development (~516ha) will expose, disturb and displace archaeological sites/ material. However, from the investigation it would appear that the proposed area earmarked for development is of *low archaeological sensitivity*. The Middle Stone Age stone tools observed in the proposed area to be developed are considered to be of *low cultural significance*, because they are in secondary context and not associated with any other archaeological remains. Notwithstanding, important materials may be covered by soil and vegetation.

The following actions are recommended:

- No further Palaeontological Specialist Studies or specialist mitigation are required for the proposed agricultural project, pending the discovery or exposure of any substantial fossil remains (e.g. vertebrate bones and teeth, large blocks of petrified wood, fossil plant-rich horizons, buried laminated shales) during the construction phase.
- The ECO responsible for these developments should be alerted to the possibility of important fossil remains and concentrations of archaeological materials and/ or human remains being found either on the surface or exposed by fresh excavations during construction and should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. It is suggested that a person be trained (ECO) to be on site to report to the site manager if sites are found.
- An archaeologist should conduct a walkthrough of the area after the vegetation has been cleared, to check if any significant sites/ materials have been exposed. Further recommendations will follow after the investigation.
- Should such heritage resources be discovered during construction, these should be safeguarded (preferably *in situ*) and the ECO should alert the Eastern Cape Provincial Heritage Resources Authority (ECPHRA. Contact details: Mr Sello Mokhanya, 74 Alexander Road, King Williams Town 5600; Email: smokhanya@ecphra.org.za). This is so that appropriate mitigation (e.g. recording, sampling or collection) can be taken by a professional palaeontologist (See tabulated Chance Fossil Finds Procedure appended to the EMP). The specialist involved would require a collection permit from ECPHRA. Fossil material must be curated in an approved repository (e.g. museum or university collection) and all fieldwork and reports should meet the minimum standards for palaeontological impact studies developed by SAHRA (2013).
- Sufficient time should be allowed to investigate and to remove/ collect such material.

For further information on the Heritage Impact Assessments see Chapters Ten (Palaeontological) and Eleven (Archaeological), respectively of the EIA Report.

TRAFFIC IMPACTS AND RECOMMENDATIONS

The following conclusions can be drawn from the traffic specialist study:

- Access to the proposed development can be provided directly from MN50077 at the location indicated (see Chapter Nine) as sight distances are in excess of the prescribed minimum requirements;
- A total of 944 trips over the 95-week day picking season (472 in and 472 out), generated at full operational capacity (20 trips per day), will have minimal impact on the operational capacity of the adjacent road network, should regular maintenance be conducted.

The table below provides a summary of the key direct and indirect impacts associated with the development that have been identified by the traffic specialist. Only impacts that are rated as having a potential *Medium to High or Very High* negative impact are listed below:

ENVIRONMENTAL IMPACT	DEVELOPMENT PHASE	PRE-MITIGATION	POST-MITIGATION
Additional traffic volumes	Establishment	MEDIUM	LOW
Traffic Safety Impact due to slow moving traffic	Establishment	HIGH	MEDIUM
Additional traffic	Operational	HIGH	MEDIUM
Deterioration of Public Road Network	Operational	HIGH	LOW
Generation of Dust	Operational	MEDIUM	MEDIUM POSITIVE

In view of the findings of this study, it is recommended that:

- This TIA be approved by the Eastern Cape Department of Transport;
- Access to the proposed development be provided from MN50077, as indicated on Figure 9.2;
- Suitable warning signage be erected on the approaches to the proposed access point;
- Advanced warning signage be erected on either side of the narrow culvert on DR01983;
- Regular maintenance of DR01983/ MN50077 be conducted by the provincial Department of Transport.

For further information on the Traffic Impact Assessment see Chapter Nine of the EIA Report.

VISUAL IMPACTS AND RECOMMENDATIONS

The proposed development covers a large area of land but is **not visible** from any main roads, towns or from within the Addo Elephant National Park, even though it is located within 15km of all these receptors. The only visual points that will have visibility of the proposed development are Viewpoints V2 (located on the farm; full visibility) and V10 (partial visibility from the Park main gate), all located within 3km of the farm. None of the other identified viewpoints will have visibility (partial or complete) of the proposed development, as they all will be screened by existing vegetation and topography. Depending on the view point, the overall visibility and sensitivity may vary from LOW to MODERATE. None of the points were regarded as having a HIGH significance.

Overall, the impact for all viewpoints are regarded as:

- **LOW**, where the impact should not have an influence on the decision.

Only 2 of the identified receptors will have visibility of the proposed new site namely:

- Scheepersvlakte Farm (full visibility).
- R342 Road users (section past the Addo Elephant National Park entrance; partial visibility).

In assessing the direct impacts to visual resources, it has been recognized that, although the lifespan of the project is likely to extend into perpetuity, most of the structures can be removed on decommissioning. This means that although the proposed facility will undoubtedly have an impact on the visual resources of the area, it does not represent a completely irreversible loss of scenic resources.

The following impacts were identified:

- A change in character and loss of cultural scenic resources of the local area is not anticipated, as the proposed development will not significantly alter the scenic value of the local area. Agricultural developments, especially to the west of the site are extensive, therefore, the visual impact is local in nature.
- Road users, especially those using the R342 to access the Addo Elephant National Park, will not be impacted by the proposed development.
- The impact of existing agricultural developments in the local area on visitors within the Addo Elephant National Park, is already significant and adding the proposed development will not have a significant impact on the existing scenic value from viewpoints within the Park as it is likely to blend in with the already largely agricultural nature of the area. In addition, due to topography it has been established that the development will not be visible at the two viewpoints visited within the Park and should therefore not detract from the "wilderness experience" of visitors to the Park.
- The construction phase (when natural vegetation is cleared for agriculture) is recognized as significant and will result in visual scarring. The impact is temporary and of medium term, if mitigated (planted with citrus orchards).

The following mitigation measures are recommended:

- Lighting:
 - LSA and other permanent structures should, where practical, be situated off ridgelines so as to minimise the view catchment of the lighting, especially during nighttime;

- All lighting should be fitted with deflectors to avoid light spillage and minimise visual impact of lights at night. The developer should specifically plan the type, placement and direction of lighting to ensure that light pollution is minimized, especially toward the east.
- Timer switches or motion detectors should be used to control lighting in areas that are not occupied continuously.
- Visual Intrusion in the Landscape:
 - Possible vegetation screening along sections of the DR01983 road, as well as the DR02006 (Enon road), which is frequented by impacted individuals.

The proposed development will undoubtedly be imposing on the visual landscape for those in close proximity, especially during the site clearing/ construction phase, however, it is concluded that potential losses of scenic resources are not sufficiently significant to present a fatal flaw to the proposed project.

LOGISTICAL SERVICES AREA DESIGN AND RENOVATIONS RECOMMENDATIONS

A new logistical services area is proposed to be constructed near the southern boundary of the farm in order to provide administrative and logistical support for the development. The proposed logistical services area will measure ~6ha in extent and is proposed to consist of the following support infrastructure/ structures:

- Pre-sort packhouse (~6500 m²).
- Tractor/ trailer off-loading and receiving slab.
- Dispatch truck loading slab.
- Access road (~8m wide) including turning circles (~36m diameter).
- Workshop and storage area (300m²).
- Office/ administration area (150m²).
- Other staff facilities including ablution blocks (150m²).
- Staff housing (5 x 60m²).
- Onsite domestic effluent treatment system (e.g. Clearedge system) (641m²).
- Domestic water storage and treatment facilities (1 575m²).
- Stormwater detention facilities (2 260m²).

A Roads and Wet Services Report has been prepared in order to ensure that the proposed logistical services area and proposed staff housing are adequately serviced. The report is included as Chapter Twelve of this report and provides detailed information on the above services infrastructure, including domestic water supply, domestic effluent, road alignment and structure, as well as stormwater management.

The proposed workshop and storage area will include a fully enclosed bunded, roofed facility with a capacity to store ~30m³ of chemicals required for the proposed agricultural development. Storage and handling of chemicals on site must comply with standard Material Safety Data Sheet control measures. It is recommended that any waste packaging must be disposed of at a suitably permitted landfill site and not buried or burnt on site. In addition, it is proposed that an outdoor aboveground diesel tank, with the capacity to store ~14000L/ 14m³ of fuel, be constructed adjacent to the workshop area. In order to mitigate any potential risks associated with the fuel tank, due consideration must be given to appropriate design and construction. The tanks are required to be built to industry standard in order to be Global G.A.P. compliant.

Recommendations regarding the specifications for the fuel tank as well as the design and management of the chemical storeroom have been included in Chapter Two and Appendix G, respectively, of this report.

ASSESSMENT OF ALTERNATIVES

The following alternatives were identified for consideration in this assessment:

- No-Go alternative
- Property/ Location alternatives
- Land-Use alternatives
 - Grazing/ game
 - Crop cultivation and citrus orchard establishment
- Layout alternatives (development footprints)
- Alternatives as Raised by I&APs and Authorities
 - Tourism
 - Access Alternative
 - Buffers

The no-go option would result in the loss of potentially productive agricultural land in an area known for citrus production and at a site that is largely surrounded by agricultural development. The no-go option would result in the loss of a capital investment

estimated to be approximately R185 million. The operational phase of the project will result in the creation of 200 permanent employment opportunities with an annual income of approximately R13.5 million and 1000 seasonal employment opportunities with an additional annual income of R31.4 million. In addition, given that this proposed agricultural development is an empowerment project the benefits to the potential beneficiaries will not be realized. The no-go option would result in a loss of these economic opportunities, as well as the increased production of food for local and international markets, which is considered to be a negative impact. While the no-go option will have no significant negative biophysical environmental impacts, it will result in the loss of positive social and economic benefits which are associated with the go option. Finally, the no-go option will result in the Farm not being optimally utilized for agriculture, for which it is zoned and well-positioned.

The preferred land-use, layout and alternatives as raised by I&APs and Authorities are described in full in Chapter Five of the EIA Report. Positive impacts associated with the **go option** are maximizing the use of available agricultural land whilst generating income from foreign currency (through export of citrus), thereby contributing to local economic growth, as well as assist in stimulating local markets. In addition, given that this agricultural development is an empowerment project there will be additional benefits to be realized for beneficiaries associated with the project. The proposed development footprint has been informed by the relevant specialist assessments and mitigation measures have been recommended in order to reduce the impact of the proposed development on the biophysical environment.

OVERALL EVALUATION OF IMPACTS

Scheepersvlakte Farms (Pty) Ltd is a citrus farming business initiated by Sun Citrus (represented by Cecil Brummer), B Muller Family Trust (represented by Boetie Muller) and Hansie Klein Kinders Trust (represented by Hansie van der Westhuizen). The philosophy at Sun Citrus has always been that the Human Resources are the most important asset for the business. Since 2000 Sun Citrus has invested in their staff through training and education. However, Sun Citrus is now close to reaching its maximum size as an organization. As such, it is beginning to impose a "ceiling" both on the further development of individuals who have already risen through the ranks, and on those who are still to rise through the ranks of the company. Sun Citrus have, therefore, identified the need to create empowerment opportunities beyond the fruit packing, and farming business.

The Ukukhanya Business Trust was founded as a means/ business opportunity to further empower the employees of Sun Citrus, not only for the benefit of financial growth but also for personal growth and exposure to bigger business opportunities. For this reason, the proposed agricultural development of the Remainder of Portion 7 of the Farm Scheepers Vlake 98 has been identified as an opportunity for staff from these entities to continue their growth and economic empowerment, while building on their already extensive knowledge of the citrus industry.

Seven Beneficiaries of the Ukukhanya Business Trust have already been identified. These seven beneficiaries will be the key players in the development of the project. Should the proposed development receive Environmental Authorisation, a further 600 employees will benefit from the development. It is also envisaged that in future the Trust will have the option to increase its shareholding in Scheepersvlakte Farms (Pty) Ltd. This will be made possible by utilizing a portion of their dividends to purchase such shareholding at a price to be determined by the auditors from time to time. Such dividends will be forthcoming from the 10th year of operation of the project. Should the proposed agricultural development receive Environmental Authorisation it will allow greater opportunities for existing staff to move to better positions.

Based on the outcome of the detailed specialist assessments, technical input and consultation process, it is proposed that ~516ha (~61% of the extent of the property) be cleared in order to facilitate the establishment of ~468ha of citrus, as well as associated infrastructure. This will include the construction of a new irrigation dam (~7ha), and a new logistical services area (~6ha) including a pre-sort packhouse. The additional clearance of ~516ha will result in ~29% of the near-natural and degraded vegetation on the farm being retained. By adopting the proposed no-go areas and all mitigation measures recommended by the Ecological Specialists, the biodiversity pattern target area for the various vegetation types, and the hydrological/ ecological process areas associated with aquatic features, will be safeguarded. In addition, these final no-go areas exceed the targets delimited on the SRV CBA Map (of 17%). In addition, the Sundays Doringveld on the Farm has been excluded from the development footprint.

By applying the mitigatory measures proposed *Construction Phase* direct and indirect impacts of medium to high significance can mostly be reduced to impacts of *medium to low negative or neutral impacts*. The key direct and indirect impacts associated with the *Operational Phase* of the development can, by applying the mitigatory measures proposed is reduced from negative impacts of high to medium significance to *impacts of medium to low significance*.

The Environmental Assessment process has not identified any negative impacts that should be considered "fatal flaws" from an environmental perspective, and thereby necessitate substantial re-design or termination of the project. Taking into consideration the findings of the EIA process, it is the opinion of the Environmental Assessment Practitioner that the project benefits outweigh the negative residual environmental impacts, provided that the specified mitigation measures are applied effectively, it is proposed that the project receive environmental authorization in terms of the EIA process.