ecosphere

Environmental Management Services

Final Scoping Report

Fresca Farms

May 2022

Report Details:

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List of Abbreviations

CA	Competent Authority
CBA	Critical Biodiversity Area
CBD	Conservation of Biological Diversity
CR	Critically Endangered
DEFF	Department of Environment, Forestry and Fisheries Affairs
DEDECT	Department of Economic Development, Environment, Conservation and Tourism
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMS	Environmental Management Services
ESA	Ecological Support Area
GMR	Government Notice Report
IDP	Integrated Development Plan
I&AP	Interested and Affected Parties
ISSV	Initial Site Sensitivity Verification Report
NEMA	National Environmental Management Act
NT	Near Threatened
NWBSP	North-West Biodiversity Sector Plan

PPP	Public Participation Process
SANBI	South African National Biodiversity Institute
SACNSP	South African Council for Natural Scientific Professions
SCC	Species of Conservation Concern
S&EIA	Scoping and Environmental Impact Assessment
UNFCCC	United Nations Framework Convention on Climate Change
V	Vulnerable
WULA	Water Use License Application

Executive Summary

Ecosphere Environmental Management Services has been appointed by Fresca Farms to assist in obtaining Environmental Authorisation for a proposed development that entails the removal of indigenous vegetation and transformation of land for crop production.

The proposed development is set to take place across five farm portions. Fresca Farms is currently renting the five farm portions and in the process of buying them and has obtained landowner consent from the existing landowners. The proposed development footprint will result in the transformation of 146,56 ha of indigenous vegetation to agricultural land for crop production.

It is important to note that Fresca Farms has recently undertaken two section 24G Applications for partial and complete removal of indigenous vegetation that took place on three on the five farm portions. Fresca farms was initially not aware that they required environmental authorisation (EA) but did however obtain two tree removal licenses. Ecosphere was appointed by Fresca farms to complete the S24G Applications and undertake the appropriate EA process (Scoping and Environmental Impact Assessment Process) to obtain authorisation for the proposed development.

The Scoping report aims to provide a detailed overview of the proposed project whereby the proposed activity is described, alternatives are considered the natural and social environment within and around the proposed project are assessed, environmental impacts are identified and details regarding the Public Participation Process (PPP) is provided. The Scoping report also includes a framework and methodology to be followed during the EIA phase called the Plan of Study.

The proposed development footprint falls within an area that used to form part of a game farm years ago and largely consist of bushveld. It is anticipated the proposed development will result in job creation and contribute to local and national food security.

The draft Scoping report provides three proposed project alternatives. The first alternative would be the most advantageous for the client as it proposes that the total area of the previously mentioned five farm portions are transformed to agricultural land for the cultivation of crops. The second alternative proposes that the development footprint of the proposed project exclude areas with a certain level of sensitivity as required based on the desktop study (Initial Site Sensitivity Verification (ISSV) Report) and specialist studies. The third alternative provided is the no-go alternative which poses its own positive and negative implications. A conclusion regarding the preferred alternative is provided after the consideration of the biophysical environment and specialist studies in Section E of the report.

As part of the initial Public Participation Process (PPP) the adjacent landowners, as well as stakeholders and Interested and Affected Parties (I&Aps) were notified of the proposed project and method and timeframe permitted to register as such. The stakeholders and registered I&APs will be notified of the availability as well as comment and review period of the draft Scoping report as soon it is finalised, and the final Scoping report will be submitted to the competent authority (CA) for consideration.

The assessment of the area within which the project area falls started during the initial desktop study (that form part of the screening phase of the Scoping and EIA process) using the information provided by the National Web based Environmental Screening Tool. The findings from the Screening Tool were verified or dismissed by doing further research during the compilation of the ISSV Report. Based on the findings of the Screening Tool and ISSV it was

established that a Terrestrial Biodiversity Assessment as well as a Heritage Impact Assessment was required.

The Terrestrial Biodiversity Assessment found that certain areas of the proposed project falls within a Critical Biodiversity Area as well as an Ecological Support. The study found that there were areas with a high sensitivity and areas with medium sensitivity (degraded bushveld). The recommended mitigation measure was that the proposed development should be restricted to the low and medium sensitivity areas and that the loss of high sensitivity areas should not be permitted. It was also established that there were surfaces water resources within and near farm portion where the proposed development will be located. The assessment found the sensitivity of the water resources to be high and recommended that a no-go buffer of 20m be applied around them as a mitigation measure

The Heritage Impact Assessment found sites with heritage significance at various sites that fall within the farm portions were the proposed development will take place. Most of the identified sites were found to have medium, medium-high or high heritage significance. It was noted that the proposed development would have a very high negative impact significance if the appropriate mitigation measures were not applied. In order to reduce the impact rating to an acceptable moderate negative impact a no-go buffer of 30m would have to be implemented or a permit for its destruction would have to be obtained.

After careful consideration of the information provided in Section E of the report it was decided that Alternative 2 would be the preferred alternative for the proposed development. To minimise the impact of the proposed development footprint, the proposed footprint of Alternative 2 was developed based on the information provided in the ISSV report as well as the two specialist studies. Hence, the current proposed footprint maintains the appropriate buffers from the required areas and have excluded the no-go areas from the proposed footprint. Permits for destruction will be applied for, for the sites of heritage importance that cannot be excluded from the proposed development footprint. Subsequently, only incremental alternatives or changes posed by new available information, permit outcomes, the competent authority, specialists, stakeholders and Interested and Affected Parties (I&APs) will be considered and assessed

The proposed development is bound to have an impact, but the impact can be reduced to the area of the development footprint by implementing the appropriate mitigation measures. The preliminary identified impacts were all found to have a low impact significance after the preliminary mitigation measures were considered. It is therefore anticipated that the proposed development will have a positive socio-economic impact and a low environmental impact as long as the appropriate mitigation measures are implemented.

Report Structure

Table 1: Environmental Impact Assessment Regulations (GN No 326 of 2017) requirements for a Scoping Report.

Sections of the EIA Regulations	Requirements for a Scoping Report in terms of Appendix 2 of the 2017 NEMA EIA Regulations (GN R326)	Section	Page
Appendix 2-(1)(a)	Details of - i. the EAP who prepared the report; and ii. the expertise of the EAP, including a curriculum vitae;	Section A and Appendix A	1
Appendix 2 -(1)(b)	The location of the activity, including - i. the 21 digit Surveyor General code of each cadastral land parcel; ii. where available, the physical address and farm name; iii. where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section B 3.1	3-4
Appendix 2 -(1)(c)	A plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is - i. a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or ii. on land where the property has not been defined, the coordinates within which the activity is to be undertaken	Section B.3 and a map can be found at 3.1.1 and 3.2.	3-6
Appendix 2 -(1)(d)	A description of the scope of the proposed activity, including – i. all listed and specified activities triggered ii. a description of the activities to be undertaken, including associated structures and infrastructure;	Section B.3	3-12
Appendix 2 -(1)(e)	A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;	Section B 3.3	6-12
Appendix 2 -(1)(f)	A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section B4	6-12
Appendix 2 -(1)(g)	full description of the process followed to reach the proposed preferred activity, site and location of the development footprint within the site, including – i. details of all the alternatives considered; ii. details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Section C Section D	7-8 9-12

	iii. a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; iv. the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; v. the impacts and risks which have informed the identification of each alternative, including the nature, significance, consequence, extent, duration and probability of such identified impacts, including the degree to which these impacts – (aa) can be reversed; (ab) may cause irreplaceable loss of resources; and (ac) can be avoided, managed or mitigated; vi. the methodology used in identifying and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives; vii. positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; viii. the possible mitigation measures that could be applied and level of residual risk; ix. the outcome of the site selection matrix; x. if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and xi. a concluding statement indicating the preferred alternatives, xii. including preferred location of the activity;	Section E Section C, E and F Section F.1 Section E Section F Section E.4	20-38 20-55 39 20-30 55-58 38
Appendix 2 - (1)(h)	A plan of study for undertaking the environmental impact assessment process to be undertaken, including – i. a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity; ii. a description of the aspects to be assessed as part of the iii. environmental impact assessment process; iv. aspects to be assessed by specialists; v. a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists; vi. a description of the proposed method of assessing duration and significance; vii. an indication of the stages at which the competent authority will be consulted; particulars of the public participation process that will be conducted during the environmental impact assessment process; and viii. a description of the tasks that will be undertaken as part ofthe environmental impact assessment process;	Section G	59-64

	ix. identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.		
Appendix 2 - (1)(i)	An undertaking under oath or affirmation by the EAP in relation to - i. the correctness of the information provided in the report; ii. the inclusion of comments and inputs from stakeholders and interested and affected parties; and iii. any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;	Section G.9	64
Appendix 2 - (1)(j)	An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;	Section G.9	64
Appendix 2 - (1)(k)	Where applicable, any specific information required by the competent authority;	Not applicable at this stage	N/A
Appendix 2 - (1)(l)	Any other matter required in terms of section 24(4)(a) and (b) of the Act.	Not applicable at this stage	N/A

Section A: Details of the Environmental Assessment Practitioner

1. Name and Contact Details of Environmental Assessment Practitioner (EAP)

Table 2: Details of the Environmental Assessment Practitioner (EAP).

Business name of EAP:	Ecosphere Environmental Management Services		
Physical Address:	9 Sousa Street Vanderbijlpark 1911		
Postal Code:	1900		
Telephone:	N/A	Cell:	084 284 3333
Email:	Christelle@ecosphere.co.za	Fax:	N/A

2. Names and Expertise of Representatives of the EAP

Table 3: Details of the representatives of the EAP.

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Christelle Greyling	MSc Environmental Management	SACNASP	5
Richelle Brink	Honours in B.Sc. Biodiversity and Ecology		0

Section B: Description and Scope of the Proposed Project

1. Introduction

Ecosphere Environmental Management Services has been appointed by Fresca Farms to assist in obtaining Environmental Authorisation for a proposed development that entails the removal of indigenous vegetation and transformation of land for crop production.

The proposed development is set to take place across five farm portions. Fresca Farms is currently renting the five farm portions which they are also in the process of buying and has obtained landowner consent from the existing landowners. The proposed development footprint will result in the transformation of 146.56 ha of indigenous vegetation to agricultural land for crop production.

It is important to note that Fresca Farms has recently undertaken two section 24G Applications for partial and complete removal of indigenous vegetation that took place on three on the five farm portions. Fresca farms was initially not aware that they required environmental authorisation (EA) but did however obtain two tree removal licenses. Ecosphere was appointed by Fresca farms to complete the S24G Applications for the areas that had already been cleared and undertake the appropriate EA process (Scoping and Environmental Impact Assessment Process) to obtain authorisation for the proposed development.

The proposed development falls within the Madibeng Local Municipality and extends across five farm portions located near Lethlabile Township and a few kilometres from Brits. The proposed development footprint falls within an area that largely consist of bushveld and used to form part of a game farm years ago. However, it has not been used as a game farm for a few years now and has remained unutilised since. It is anticipated the proposed development will result in job creation and contribute to local and national food security.

The Scoping report aims to provide a detailed overview of the proposed project whereby the proposed activity is described, alternatives are considered the natural and social environment within and around the proposed project are assessed, environmental impacts are identified and details regarding the Public Participation Process (PPP) are provided. The Scoping report also includes a framework and methodology to be followed during the EIA phase called the Plan of Study.

2. Purpose of the Scoping Report

The Scoping Phase of the EIA refers to the process of determining the spatial and temporal boundaries for the EIA. The objective of the Scoping Report as per Appendix 2 of the National Environmental Management Act (NEMA)(Act No, 107 of 1998) Environmental Impact Assessment Regulations, 2014 (as amended) are:

a) identify the relevant policies and legislation relevant to the activity;
b) motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
c) identify and confirm the preferred activity and technology alternative through an identification of impacts and risks and ranking process of such impacts and risks;
d) identify and confirm the preferred site, through a detailed site selection process, which includes an identification of impacts and risks inclusive of identification of cumulative impacts and a ranking process of all the identified alternatives focusing on

the geographical, physical, biological social, economic, and cultural aspects of the environment;

e) identify the key issues to be addressed in the assessment phase;
f) agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and
g) identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

This is achieved through parallel initiatives of consulting with:

- The lead authorities involved in the decision-making for this EIA application;
- The public to ensure that local issues are well understood; and
- The EIA specialist team to ensure that technical issues are identified.

The Scoping Process is supported by a review of relevant background literature on the local area. Through this comprehensive process, the environmental assessment can identify and focus on key issues requiring assessment.

The primary objective of the Scoping Report is to present key stakeholders (including affected organs of state) with an overview of the project and key issues that require assessment in the EIA Phase and allow the opportunity for the identification of additional issues that may require assessment.

The Draft Scoping Report will be made available to the Interested and Affected Parties (I&APs) as well as organs of State for thirty (30) days for review and comment. All comments received will be included in the Comments and Response Report. A Plan of Study is also included in this report

3. Project Description

3.1 Description of the Location

3.1.1 Property Details

The project area is situated 9.7 km North of Brits and approximately 0.4 km southwest of Lethlabile in the North West Province (Figure 1). The project area falls under the Madibeng

Local Municipality. Table 4 indicates the project GPS location/s and Surveyor General 21 digit codes.

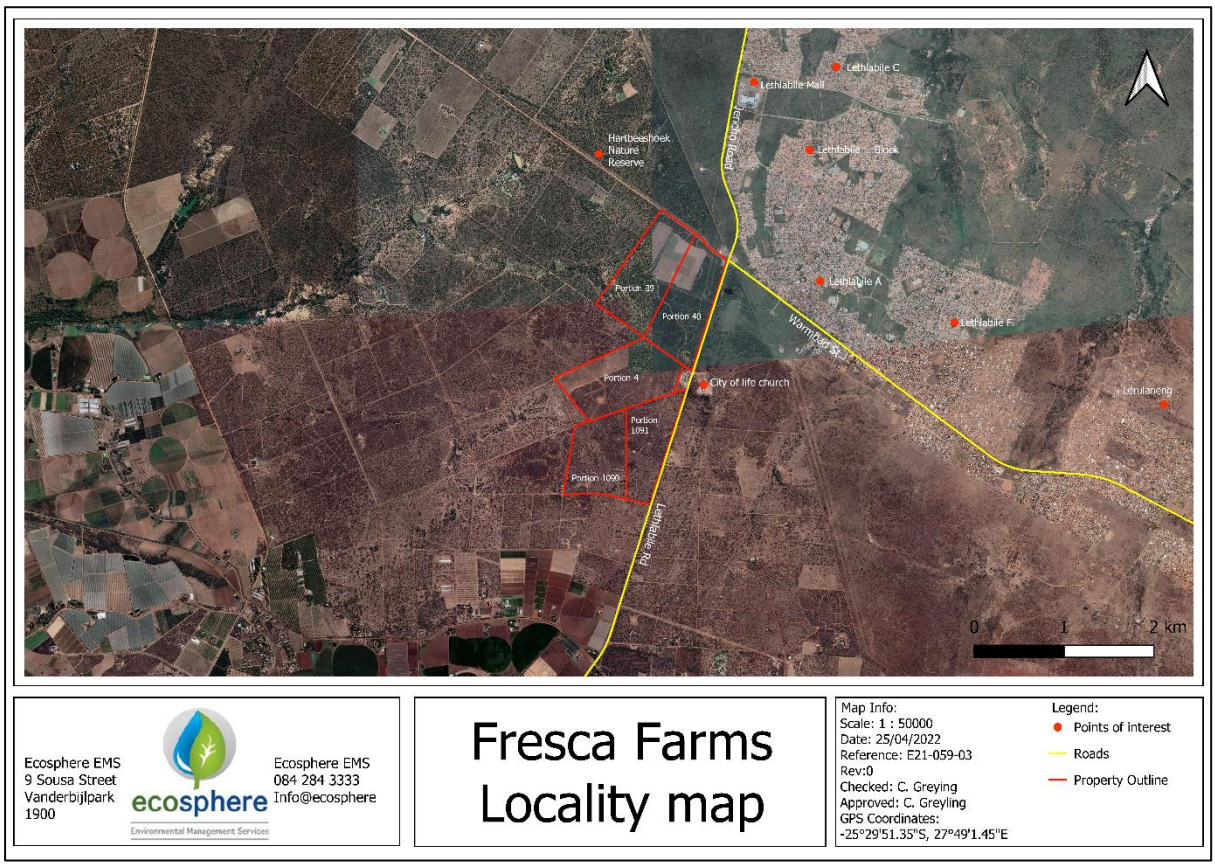


Figure 1: Location of the proposed development

Table 4: Provides the property details of the farm portions relevant to the proposed project.

Farm Name	Farm No	Portion	Latitude (S)	Longitude (E)	SG codes
Hartebeestpoort C	419	1090	25°30'14.4S	27°49'8.19E	T0JQ00000000041901090
Hartebeestpoort C	419	1091	25°30'19.64S	27°48'48.23E	T0JQ00000000041901091
Blaauwbank	241	4	25°29'51.51S	27°48'57.47E	T0JQ00000000024100004
Blaauwbank	241	39	25°29'13.69S	27°49'7.44E	T0JQ00000000024100039
Blaauwbank	241	40	25°29'13.69S	27°49'7.44E	T0JQ00000000024100040

3.1.2 Property Ownership

Fresca Farms is currently renting the five farm portions and in the process of buying them. The current owners of each property can be seen in Table 5.

Table 5: Property ownership

Farm Name	Farm No	Portion	Owner
Hartebeestpoort C	419	1090	Blaauwbank Landgoed Trust
Hartebeestpoort C	419	1091	Blaauwbank Landgoed Trust
Blaauwbank	241	4	Blaauwbank Landgoed Trust
Blaauwbank	241	39	DM Smit Family Trust
Blaauwbank	241	40	DM Smit Family Trust

3.1.3 Surrounding land uses

The proposed project area is situated 9.7 km North of Brits and 0.4 km southwest of Lethlabile in the North West Province. The proposed development is consistent with the activities within the larger surrounding environment. The immediate area surrounding the proposed development site consist of a natural bushveld and a game farm as well as Lethabile informal settlement.

3.2 Scope of the Project

The area within which the project falls formed part of a game farm years ago but has during subsequent years not been utilised as such. The area consists of small shrubs, scattered trees and a variety of grasses. The proposed project entails the transformation of indigenous vegetation for crop production. Fresca Farms intend to transform a few areas located across 5 different farms portions namely:

- Portion 1090, of Farm 419 Hartebeestpoort C
- Portion 1091, of Farm 419 Hartebeestpoort C
- Portion 4, of Farm 241 Blaauwbank
- Portion 39 of Farm 241 Blaauwbank
- Portion 40 of Farm 241 Blaauwbank

The approximate extent of the area of indigenous vegetation that will be transformed per farm portion are as follows:

Table 6: Proposed extent of project area per farm portion.

Farm Portion	Project extent (ha)
Portion 1090 of Farm 419 Hartebeestpoort C	58.2
Portion 1091, of Farm 419 Hartebeestpoort C	
Portion 4, of Farm 241 Blaauwbank	30.39
Portion 39 of Farm 241 Blaauwbank	57.97
Portion 40 of Farm 241 Blaauwbank	

It is important to note that a S24G process is currently underway for sites that were cleared from indigenous vegetation by Fresca Farms within the proposed project area before obtaining environmental authorisation. At the time Fresca Farms were not aware that they required

authorisation and appointed Ecosphere Environmental services as soon as they came to the realisation.

Table 7:Areas included in the S24G application

Farm Portion	S24G development area (ha)
Portion 1090 of Farm 419 Hartebeestpoort C	N/A
Portion 1091, of Farm 419 Hartebeestpoort C	
Portion 4, of Farm 241 Blaauwbank	19.81
Portion 39 of Farm 241 Blaauwbank	32.13
Portion 40 of Farm 241 Blaauwbank	

Thus, after the S24G application has been approved and Environmental Authorisation has been obtained the total transformed area will be 198.5 ha. The extent of the proposed development can be seen in Figure 2.

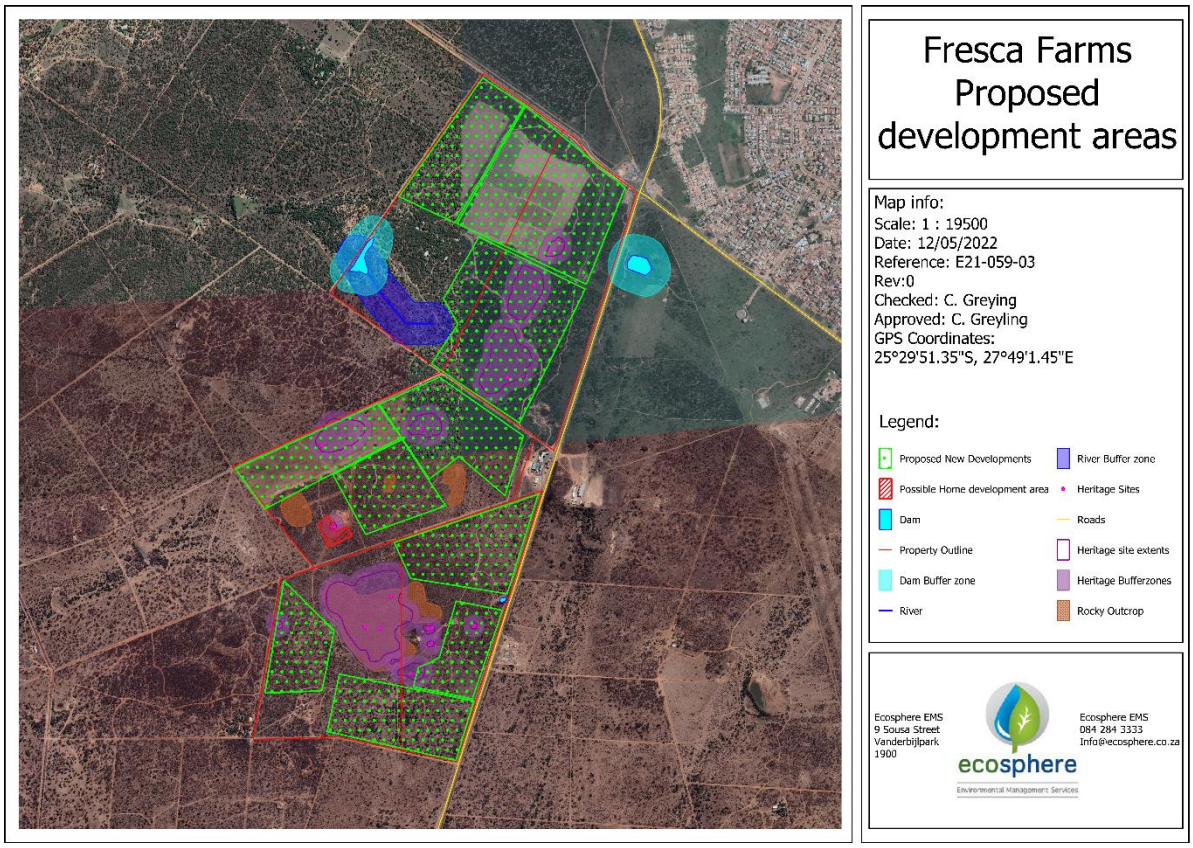


Figure 2: Proposed development areas (footprint) of Alternative 2.

3.3 Policy and Legislative Context

The following main pieces of legislation were considered to compile the scoping report and conduct the EIA process:

Table 8: Legislation that is applicable to the application as contemplated in the EIA regulations.

Title of legislation, policy, or guideline	Description of applicable document	Administering authority	Date	Relevance to the Proposed Project
Legislation				
The Constitution of the Republic of South Africa (Act No. 108 of 1996)	Everyone has the right to an environment that is not harmful to their health or well-being.	Constitutional court	1996	This EIA is conducted to align with the requirement of the Bill of Rights.
National Environmental Management Act (Act No. 107 of 1998)	Serves as the framework for all environmental legislation in South Africa.	Department of Environmental Affairs	1998	The proposed project will result in the removal of indigenous vegetation and therefore have an environmental impact.
Environmental Impact Assessment Regulations (GN R. 983 of 2014)	Regulates the procedure and criteria as defined in NEMA.	Department of Environmental Affairs	2014	The activity of removing indigenous vegetation will trigger an activity under listing notice 2 and listing notice 3.
The National Water Act (Act No. 36 of 1998)	Forms the basis for the management of South Africa's water resources.	Department of Water Affairs and Sanitation	1998	There are surface water resources in and around the property where the proposed development will take place.
National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Management and conservation of the indigenous biological diversity and the sustainable use of biological resources in South Africa.	Department of Environmental Affairs	2004	Certain species and ecosystems may be impacted on by the removal of indigenous vegetation for the proposed transformation of land for crop production.
Alien and Invasive Species Regulations	This Act aims to eradicate the spread and growth of Alien and Invasive Species	Department of Environmental Affairs	2014	The disturbance caused by the proposed development could favour the spread and establishment of alien and invasive species.

National Environmental Management: Protected Areas Act (Act No. 57 of 2003)	Manage and conserve South Africa's biodiversity (protected areas) within the framework of national legislation.	Department of Environmental Affairs	2003	To consider the proposed development footprint in relation to legislated protected areas.
The Conservation of Agricultural Resources Act (CARA)(Act No. 43 of 1983)	Promote the conservation of soil, water use as well as vegetation and provides requirements for the control of alien and invasive species.	Department of Environmental Affairs	1983	The proposed project is to align itself with CARA to ensure that the applicant's agricultural practices are sustainable when it comes to the use of water, soil and vegetation. Alien and invasive species that may occur within the proposed project area must be managed according to CARA.
National Heritage Resources Act (Act No. 25 of 1999)	Conservation and management of national heritage resources (archaeological and historically significant).	Department of Environmental Affairs	1999	A Heritage Impact Assessment is required for the proposed development, as the proposed development will according to section 38 subsection 1(a) the Heritage Resources Act change the character of the entire site if the development exceed 5000m^2(0.5ha) in extent. A Heritage Impact Assessment was conducted and found that there were areas with heritage importance within the farm portions where the proposed development will take place.
National Heritage Regulations (GN R 548 of 2000)	Provides regulations with regards the provisioning of permits	South African Heritage Resource Agency (SAHRA)	2000	A Heritage Impact Assessment was conducted and found that there were areas with heritage importance within the farm portions where the proposed development will take place. If the development cannot implement thee required buffers from these sites, the applicant will have to apply for the appropriate permits to allow the destruction of the sites.
National Environmental Management: Waste Act (Act No. 59 of 2008)	Regulates waste management activities in South Africa, with	Department of Environmental Affairs	2008	Waste will be generated as part of the proposed project. Waste such as general, organic, and hazardous waste

	primary aim of preventing pollution and ecological degradation.			will have to be handled, stored and disposed of in accordance with the legislative requirements.
National Environmental Management: Air Quality Act (Act No. 39 of 2004)	Regulates air quality in order to protect the environment by providing reasonable measures for the prevention and ecological degradation for securing ecologically sustainable development.	Department of Environmental Affairs	2004	The act was considered as the clearing of vegetation that form part of the proposed development may result in dust emissions and therefore impact air quality.
Noise Control Regulations, 1992 (GN R.154)	Governs the way by which noise should be regulated to prevent noise that can cause harm or act as a nuisance.	Madibeng Local Municipality	1992	The act was considered as the proposed development will result in some noise when the area is being cleared of vegetation.
National Forest Act (Act No. 84 of 1998)	Natural forests and woodlands form an important part of the environment and need to be conserved and developed according to the principles of sustainable management. The act protects forests and specific tree species.	Department of Agriculture, Forestry and Fisheries	1998	Two permits for tree removal have already been obtained: • Licence/Permit for the disposal of indigenous trees (Licence no. 03-06-21/23) • Licence/Permit for the disposal of protected trees (Licence no. 02-06-21/23)
National Veld and Forest Fire Act (Act No. 101 of 1998)	The purpose of this Act is to prevent and combat veld, forest and mountain fires throughout South Africa.	Department of Environmental Affairs	1998	The proposed project entails that an area of indigenous vegetation will be transformed to agricultural land for crop production. Firebreaks will be required to ensure that when a fire occurs it doesn't jump from the applicable properties to a neighbouring property. Necessary precautions should be included in the EMPr in case of a fire and the prevention thereof.

Plan				
North West Biodiversity Sector Plan	To provide appropriate overview of environmental resources to allow for appropriate mitigation and avoidance measures to conserve and maintain biodiversity and major ecological structures.. It identifies a network of Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) in the province	The North-West Department of Rural, Environment, and Agricultural Development (READ)	2015	The farm portions on which the proposed project area falls are located within the North West Province and according to the spatial data provided by the Sector Plan and areas within the applicable farm portions fall within the a CBA and ESA.

3.4 Constitution of the Republic of South Africa

The constitution of any country is the supreme law of South Africa. The Bill of Rights in Chapter 2 Section 24 of the Constitution of South Africa Act (Act 108 of 1996) makes provisions for environmental issues and declares that:

"Everyone has the right –

i. to an environment that is not harmful to their health or well-being; and
ii. to have the environment protected, for the benefit of present and future
iii. generations, through reasonable legislative and other measures that:
    a. prevent pollution and ecological degradation.
    b. promote conservation; and
    c. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development".

One of the objectives of the proposed development is to ensure that the development takes place in accordance with the Section 24 of the Bill of Right by taking reasonable steps to prevent pollution and ecological degradation as well as support ecological sustainable development and use of resources whilst promoting socio-economic development within the surrounding community.

3.5 National Environmental management Act and the EIA Regulations

The National Environmental Management Act (NEMA)(Act107 of 1998) governs the way in which decisions that impact the environment should be made. The NEMA Environmental Impact Assessment Regulations (2014, as amended) aim to prevent and mitigate detrimental environmental impacts through the provisioning of a criteria and procedure that must be followed with regards to activities that require Environmental Authorisation.

The type of Environmental Authorisation required will be dependent on the nature of the proposed development that can be assessed based on the listed activities prescribed in Listing Notice 1 (GN R 327), Listing Notice 2 (GN R 325) and Listing Notice 3 (GN R 324) as amended and published in terms of Section 24 of NEMA. Activities that fall under Listing Notice 1 and Listing Notice 3 requires a Basic Assessment whilst activities under Listing Notice 2 requires a Scoping and Environmental Impact Assessment Process. Activities that have been considered are listed in the table below

3.5.1 Activity description

The proposed project triggers the following listed activities which will require that an Environmental Impact Assessment (EIA) process is undertaken in accordance with the EIA regulations, 2014 (promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) as amended in April 2017.The triggered activities are listed in Table 9.

Table 9: Applicable listed activities.

Government Notice	Activity No	Description of listed activity	Comments
Listing Notice 2, GNR984 as amended	15	The clearance of an area of 20 hectares or more of indigenous vegetation.	The Applicant plans to clear over 20ha of vegetation. The applicant intends to transform this area into crop agriculture. An EIA application form must

			be completed to obtain authorisation for this activity.
Listing Notice 3	12 h (iv)	The clearance of an area of 300 square meters or more of indigenous vegetation except where such clearance of indigenous vegetation is required for Maintenance purposes undertaken in Accordance with a maintenance management plan. (h) North-West. (iv) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority.	The Applicant plans to clear over 20ha of vegetation. The applicant intends to transform this area into a crop agriculture. The property falls within a terrestrial CBA.

3.6 The National Heritage Resources Act

The National Heritage Resources Act (Act 25 of 1999) regulates the way in which South Africa's heritage resources are managed.

A Heritage Impact Assessment is required for the proposed development, as the proposed development will change the character of the entire site (73.2312 ha). As per the National Heritage Resources Act (No. 25 of 1999), section 38 subsection 1(a), which specifies that:

1. Subject to the provisions of subsection (7), (8) and (9) any person who intends to undertake a development categorised as –
    c. any development or other activity which will change the character of a site—
        i. exceeding 5 000 m2 (0.5 ha) in extent

4. Need and Desirability of the Project

There is a need for the proposed transformation of land for agricultural activities as it will contribute to food security and provide various opportunities in the local community. Employment and training opportunities will be created for local farm workers as well as contractors and this will ultimately boost the local economy.

The area within which the proposed development falls will be assessed and environmentally sensitive as well as cultural, paleontologically and heritage sensitive areas will be identified and the information will be used to set boundaries, buffers, and limitations to prevent, limit and mitigate any impacts the project may have. A preliminary assessment has already been conducted as part of the Screening and Scoping phase of the EIA process. A desktop study was conducted whereby a Screening Tool Report was generated by National Web Based Environmental Screening Tool of the Department of Forestry, Fisheries and the Environment and its findings were verified, strengthened, or dismissed in the Initial Site Sensitivity (ISSV) report.

Based on the findings of the ISSV report it has been established that a Terrestrial Assessment as well as a Heritage Impact Assessment will be required. The findings and recommendations of these specialist studies have helped to establish no- go areas and areas that requires buffers from the proposed development footprint which will be used to ensure that the proposed footprint of the development does not fall within sensitive areas and maintain the appropriate buffers from these areas.

As part of the desktop study and site visit a few dams and a drainage line have also been identified within and around the farm portions which the proposed development fall. The dams and drainage lines themselves will not be included within the footprint of the development and the appropriate buffers from these areas to the footprint of the proposed development will be used to ensure that possible impacts on the water resources.

The studies and legislative buffer requirements as together with the information obtained during the desktop study, specialist studies and ground truthing during the site visits will guide the development to minimise possible impacts on the environment and to ensure that the ecological integrity is maintained. Maps indicating the preliminary sensitive areas can be found in Section D of this report. The no go areas as well as the buffered areas have already been considered during the establishment of the proposed development footprint (Figure 2). If any other information becomes available or comments regarding the sensitive areas are received from the competent authority, Interested and Affected Parties (I&APs) and stakeholders the comments will be evaluated and incorporated in the Environmental Impact Assessment Report and the Environmental management Plan and inform the limitations of the finals proposed footprint.

Preliminary mitigation measures have been identified to ensure that the generated waste do not pollute the environment and is disposed of in a legal manner

Section C: Consideration of Alternatives

1. Assessment of Alternatives

There are three project alternatives namely alternative 1, alternative 2 and the no-go alternative. The aim of the proposed development is to transformation of land on specific predetermined properties with the sole purpose of using the transformed land for crop cultivation. Therefore, the provided alternatives are not based on technological, land-use or site alternatives but rather on alternative locations of the development footprint within the predetermined properties based on the consideration of sensitive features (based on the environment and heritage significance).

1.1 No-go Alternative

The no- go alternative refers to the option where the proposed project does not take place thus a situation whereby the indigenous area is not transformed for crop cultivation. The no-go alternative provides the base line against which all the other alternatives can be assessed as it will have no environmental impacts.

What is however important to consider here is that even though the no-go alternative may prevent new environmental impacts from occurring it can still have a variety of implications. Some implications of the no-go alternative are considered below:

- Positive socio-economic impacts relating to the creation of jobs and training opportunities will not be realised
- Food security would not be enhanced
- The opportunity to give left over produce/crops that are not sold to big markets by the farmer to the local community to be sold at affordable prices
- The local economic benefits would not be realised

Converse to the above the following benefits would occur if the no-go alternative was chosen:

- No indigenous vegetation will be removed.
- No changes will be made to the current landscape.
- No heritage sites or artifacts will be impacted on
- Additional water that would be required for crop production would not be used.

Even though the no-go alternative my not result in any environmental impacts it must also be noted that it will have no socio-economic benefits. Therefore, the no-go alternative is not the preferred alternative.

1.2 Alternative 1

The preferred alternative involves the transformation of indigenous bushveld to farmland for crop production. The areas that will be transformed are located across 5 different farms portions namely:

- Portion 1090, of Farm 419 Hartebeestpoort C
- Portion 1091, of Farm 419 Hartebeestpoort C
- Portion 4, of Farm 241 Blaauwbank
- Portion 39 of Farm 241 Blaauwbank
- Portion 40 of Farm 241 Blaauwbank

Fresca Farms is currently renting these properties with the intention to buy them. Some vegetation was already ready removed on portion 4, portion 39 and portion 40 of Blaauwbank Farm number 241 as the applicant was not aware that environmental authorisation (EA) was required at the time. A S24G is currently underway to redress the vegetation removal that took place on these properties. The applicant is also in possession of two tree removal licenses that was issued to them by the Department of Forestry, Fisheries and the Environment.

Considering the investment that the client has already made in the project it would be the preferred alternative to them if the development could take place on the properties, they intend to buy an in and around the areas of those properties were vegetation has already been removed.

1.3 Alternative 2

Alternative 2 involves the transformation of indigenous vegetation across the same 5 farm portions indicated by alternative 1. However, the areas that will be transformed are limited to predetermined areas that do not include environmentally sensitive or areas of heritage significance. The proposed development footprint of this alternative is thus informed by the legislative limitations as well as recommendations and mitigations made the specialist studies. Alternative 2 will therefore exclude the following from the proposed development footprint:

- Areas with high environmental sensitivity (as determined by the Terrestrial Biodiversity Assessment) such as rocky outcrops, dams, drainage lines, wetlands, and rivers.
    - If any wetlands are within or around the area it will be ensured that a buffer of 500m will be maintained between the wetland and proposed development footprint
    - If any dams or drainage lines are present a buffer of a 100m will be maintained between the proposed development footprint and the dam or river.
- Sites with a moderate or high significance rating (as determined by the Heritage Impact Assessments)
    - A 30m No-Go-Buffer-Zone will be kept between the sites with a medium or high significance and the proposed development footprint
    - Sites with a medium or high heritage significance for which destruction permits have been obtained under Section 35 of the National Heritage Resources Act (Act 25 of 1999) from South African Heritage Resource Agency (SAHRA) will not be excluded from the development footprint.

1.4 Concluding Remark Regarding the Assessment of the Alternatives.

The preferred alternative can only be decided after assessing the environmental attributes of the 5 farm portions and relevant specialist studies as done in Section E of the report.

Section D: Public Participation Process

1. Legal Compliance

The National Environmental Management Act, 1998 (Act no. 107 of 1998) together with the Environmental Impact Assessment Regulations (GN No. R. 982 of 2014 as amended) requires that a Public Participation Prosses (PPP) is undertaken as part of the scoping and environmental impact prosses. The PPP provides Interested and affected Parties (I&APs) the opportunity become involved, to be notified of the different stages of the project, to have their opinions be considered, for the process to be transparent and builds community trust. The details of the process to be followed area detailed below.

2. Approach to Public Participation

The PPP has been undertaken in accordance with regulation 41 in Chapter 6 of the Environmental Impact assessment Regulations (GN No. R. 982 of 2014) All potential Stakeholders and Interested & Affected Parties have been identified and notified using a newspaper advertisement and notice boards.

It is believed that the Public Participation Process undertaken as part of the initial Scoping phase was sufficient. The initial PPP adequately attempted to not only provide possible Stakeholders and Interested & Affected Parties (I&APs) with adequate information regarding the proposed activity but to also enable them to become involved in the process by providing them with details on regarding the registration required to become an I&AP.

The project area encompasses 3 areas that stretches across 5 different farm portions. A S24G process is being undertaken for 2 of the areas (3 of the 5 farm portions). Therefore, the initial public participation process (whereby possible I&APs and stakeholders are notified) for all three project areas were done separately (Table 10).

Table 10: The 3 separate initial PPPs undertaken as part of the project.

Project Area Nr	Farm Portion Details	Notified in Terms of:
Area 1	Portion 39 of Farm 241 Blaauwbank	Section 24G Application as well as Scoping and Environmental Impact Report
	Portion 40 of Farm 241 Blaauwbank	
Area 2	Portion 4, of Farm 241 Blaauwbank	Section 24G Application as well as Scoping and Environmental Impact Report
Area 3	Portion 1090 of Farm 419 Hartebeestpoort C	Scoping and Environmental Impact Report
	Portion 1091, of Farm 419 Hartebeestpoort C	

The three project areas form part of the total area for which the Scoping and Environmental Impact Assessment process is being undertaken and therefore the information obtained from the initial separate PPP for each of the project areas will be combined so that it can be addressed by a single PPP process in the future.

In total only two I&APs registered during the initial PPP and possible stakeholders were identified by Ecosphere. The Draft Scoping report will be sent to the identified I&APs and stakeholders for comment.

2.1 Identification of Interested and Affected Parties

Adjacent landowners were identified and notified by email and delivering hard copy notices where possible. Possible stakeholders were identified by Ecosphere to include in the PPP going forward.

2.1.1 List of Stakeholders Identified

- Madibeng Local Municipality
- Bojanala Platinum District Municipality
- North West Department of Economic Development, Environment, Conservation and Tourism
- Department of Forestry, Fisheries and the Environment
- South African Heritage Resource Agency

2.2 Initial Notification of I&APs

Adjacent landowners were identified using the LPI code of the farm portions adjacent to the project area to obtain Windeed reports that contain the owner information of the relevant farms. The information was used to contact the landowners by email. Adjacent landowners of which email addresses could not be obtained were informed by letters that were delivered by Ecosphere to their property. Notices were erected and news advertisements were published to inform potential I&APs.THe PPP started towards the end of July 2021 and consisted of a an initial notification and a call to register. Parties were given 40 days to register as I&APs. The call to register period ended at the end of September 2021.

2.2.1 Letters, Faxes and Emails

An email notification regarding the development were sent to the identified adjacent landowners. The email contained the following information:

- The farm name and portion specific to the landowner
- Informed the adjacent landowner that they had been identified as an important I&AP.
- The farm portion/s included in the project area
- The type of development

2.2.2 Site Notices

Site notices were placed on separate occasions for each of the three areas. More information regarding the site notice specific to the project area can be found in Table 11.

Table 11: Information regarding the notices placed for each of the project areas.

Project Area Nr	Farm Portion Details	Number of Notices	Date Placed	Size of the Notice
Area 1	Portion 39 of Farm 241 Blaauwbank Portion 40 of Farm 241 Blaauwbank	5	29 July 2021	A2 (400mm x 600mm) correx boards

Area 2	Portion 4, of Farm 241 Blaauwbank	5	29 July 2021	A2 (400mm x 600mm) correx boards
Area 3	Portion 1090 of Farm 419 Hartebeestpoort C Portion 1091, of Farm 419 Hartebeestpoort C	5	29 July 2021	A2 (400mm x 600mm) correx boards

The notice boards contained the following information:

- Notice that an application will be submitted to the North West Department of Economic Development, Environment, Conservation and Tourism (DEDECT).
- Notice of the type of application that will be submitted
- A brief project description and layout.
- The contact details of the consultants where more information can be obtained.
- Information on how to register as an I&APs.
- Information on how the EIA process works.
- Details of triggered listed activities.

2.2.3 Newspaper Advertisements

Separate newspaper advertisements were placed in the Rustenburg Herold for each of the 3 project areas (Table 12) . The newspaper distributes to Rustenburg, Boons, Bleskop, Brits, Buffelspoort, Derby, Elandskraal, Groot-Marico, Hartbeespoort, Karlienpark, Koster, Kroondal, Lichtenburg, Marikana, Moedwil, Mooinooi, Northam, Rex, RPM, Sun City, Swartklip, Swartruggens, Thabazimbi, Tlhabane, Waterfall Mall, Zinniaville, Zeerust.

Table 12: Details of the newspaper advertisements placed for each of the project areas.

Project Area Nr	Farm Portion Details	Newspaper	Date Placed
Area 1	Portion 39 of Farm 241 Blaauwbank Portion 40 of Farm 241 Blaauwbank	Rustenburg Herald	30 July 2021
Area 2	Portion 4, of Farm 241 Blaauwbank	Rustenburg Herald	23 July 2021
Area 3	Portion 1090 of Farm 419 Hartebeestpoort C Portion 1091, of Farm 419 Hartebeestpoort C	Rustenburg Herald	30 July 2021

The advertisement contained the following information:

- Notice that an application will be submitted to the North West Department of Economic Development, Environment, Conservation and Tourism (DEDECT).
- -Notice of the type of application that will be submitted
- A brief project description and layout.
- The contact details of the consultants where more information can be obtained.

- Information on how to register as an I&APs.
- Information on how the EIA process works.
- Details of triggered listed activities.

2.3 Notification of Availability of Scoping Report

No public participation meeting has been held yet but the draft scoping reports as well as future draft reports and relevant notifications will be sent to the registered I&APs as well as stakeholders. Notification will take place by letters or email.

The notification will contain the following information:

- Details describing from where the draft Scoping Report can be obtained
- Information regarding the duration of the

2.4 Issues and Responses

During the commenting period, comment was only received form one registered I&Ap. Major concerns raised were regarding impacts on water resources quality and socio-economic impacts on surrounding landowners, siting that workers on the farm would poach exotic game.

An aquatic assessment already forms a part of plan of study and it was noted that poaching in the area is already a major concern due to poverty in the surrounding rural areas. Although Fresca Farms can't guarantee the actions of their employees, the farm is properly fenced and Fresca farms hopes to contribute towards food security in the area, meaning the local community will become less reliant on poaching as livelihood.

A full record of the comments and responses can be found attached in the Comments and responses report.

Section E: Environmental Attributes

1. Biophysical Environment

1.1 Climate

The climate of the Madibeng LM region is classified as a dry, grassy plain, temperate climate. At an average temperature of 23.5 °C, January is the hottest month of the year according to Table 13. The lowest average temperatures in the year occur in July, when it is around 12.6 °C. Precipitation is the lowest in July, with an average of 3 mm. The greatest amount of precipitation occurs in December, with an average of 118 mm. Between the driest and wettest months, the difference in precipitation is 115 mm. The variation in temperatures throughout the year is 10.9 °C (Climate-data, 2021).

Table 13: Annual climate data.

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Avg Temperature ^{0}C	23.5^0 C	23.4^0 C	21.9^0 C	18.9^0 C	15.8^0 C	12.8^0 C	12.6^0 C	16^{0}C	20^{0}C	22.1^0 C	22.5^0 C	23.2^0 C
Precipitation (mm)	102	95	82	38	17	6	3	7	17	57	87	118
Humidity (%)	60%	57%	58%	58%	51%	49%	43%	36%	33%	41%	51%	59%
Rainy days	11	9	8	5	2	1	0	1	2	6	9	11
Sunny hours	9.7	9.7	9.1	8.6	9.0	8.9	9.1	9.5	9.9	10.1	10.0	10.1

1.2 Topography

The area is about 1200 above mean seal level. The terrain within which the proposed development falls is relatively flat with a few rocky outcrops and an area that gently slopes towards a drainage line

1.3 Heritage and Palaeontology

The Department of Forestry, Fisheries and the Environment' (DFFE's) Web based Environmental Screening Tool spatial data identified that the proposed development site falls within a low sensitivity area in terms of archaeological and cultural heritage and a medium sensitivity area in terms of palaeontology.

This means that the project area has a low potential for archaeological, cultural, heritage and paleontological findings and a medium potential for paleontological findings. Due to the low sensitivity of the area, a Paleontological Impact Assessment is not necessary. However, based on Section 38 (1) (c) (iii) of the National Heritage Resources Act 1999 (Act 25 of 1999), a Heritage Impact Assessment (HIA) of the proposed project is required when the proposed development footprint is more than 5000m² in extent. Therefore, a Heritage Impact Assessment will be necessary as the development triggers an activity listed in the National Heritage Act (No 25 of 1999).

1.4 Soil

According to the National Web based Screening Tool the majority of the proposed development site falls within medium agricultural sensitivity. However, the South-East portions of the proposed development site falls within an area of high agricultural sensitivity. This means that the land has a low to moderate capability for growing crops. The proposed development will be that of crop agriculture/cultivation, falling within the agricultural sector as crop production. Therefore, an Agricultural Potential Impact Assessment will not be necessary.

1.5 Flora and Fauna

1.5.1 Flora

The proposed development site falls within a low to medium sensitivity area in terms of plant species and a very high sensitivity in terms of terrestrial biodiversity according to the National Web based Environmental Screening Tool. Figure 6 shows that the largest part of the proposed development area is covered by Central Sandy Bushveld (Figure 3) and a smaller section is covered by Marikana Thornveld which falls within Central Sandy Bushveld Bioregion within the Savanna biome.

The Central Sandy Bushveld Bioregion occurs in low undulating plains, sometimes between mountains and sandy plains. This bushveld region supports tall, deciduous woodlands, with deep sandy soils, low broad leaf woodland and a grass dominated herbaceous layer. This vegetation type has been found to be heavily populated by rural communities (Environmental Management Framework, n.d.).

Savanna biomes are unique to South Africa and are of conservation importance. The land cover of the proposed development site is largely classed as woodland with very small areas indicated as grassland (Figure 4).

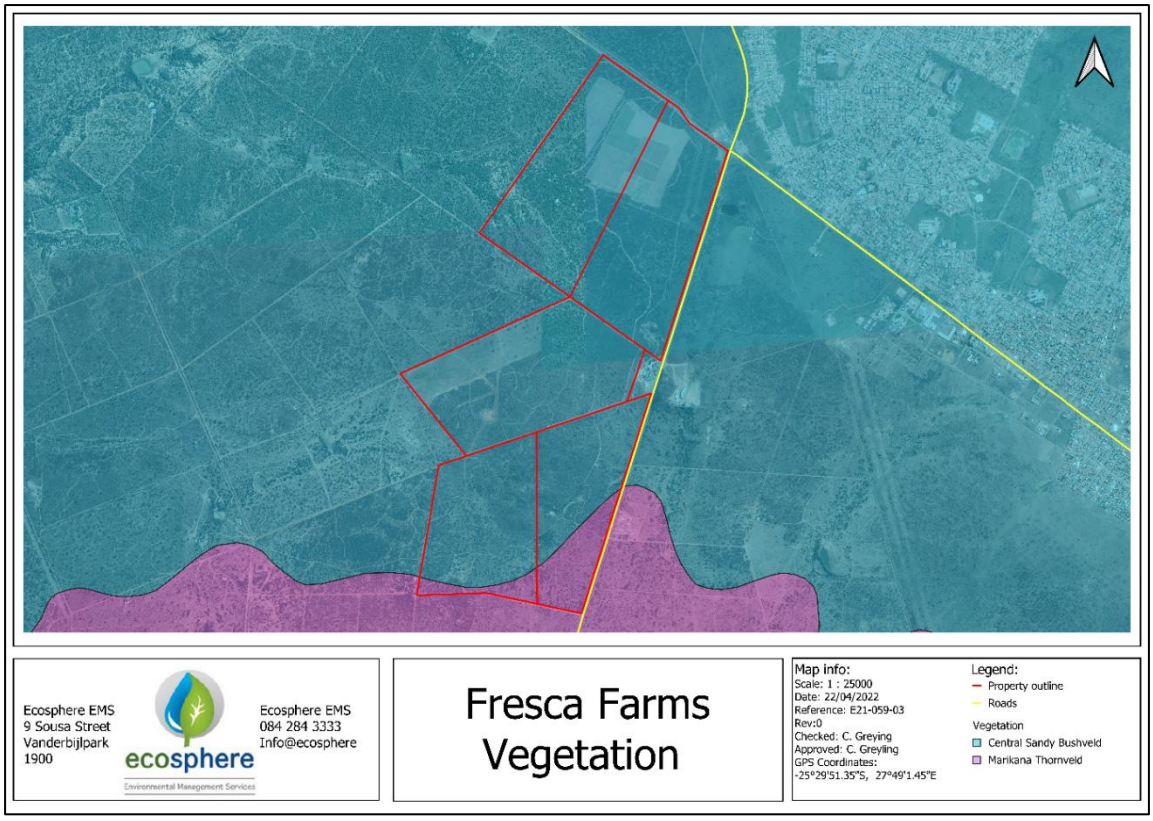


Figure 3: Map showing the vegetation.

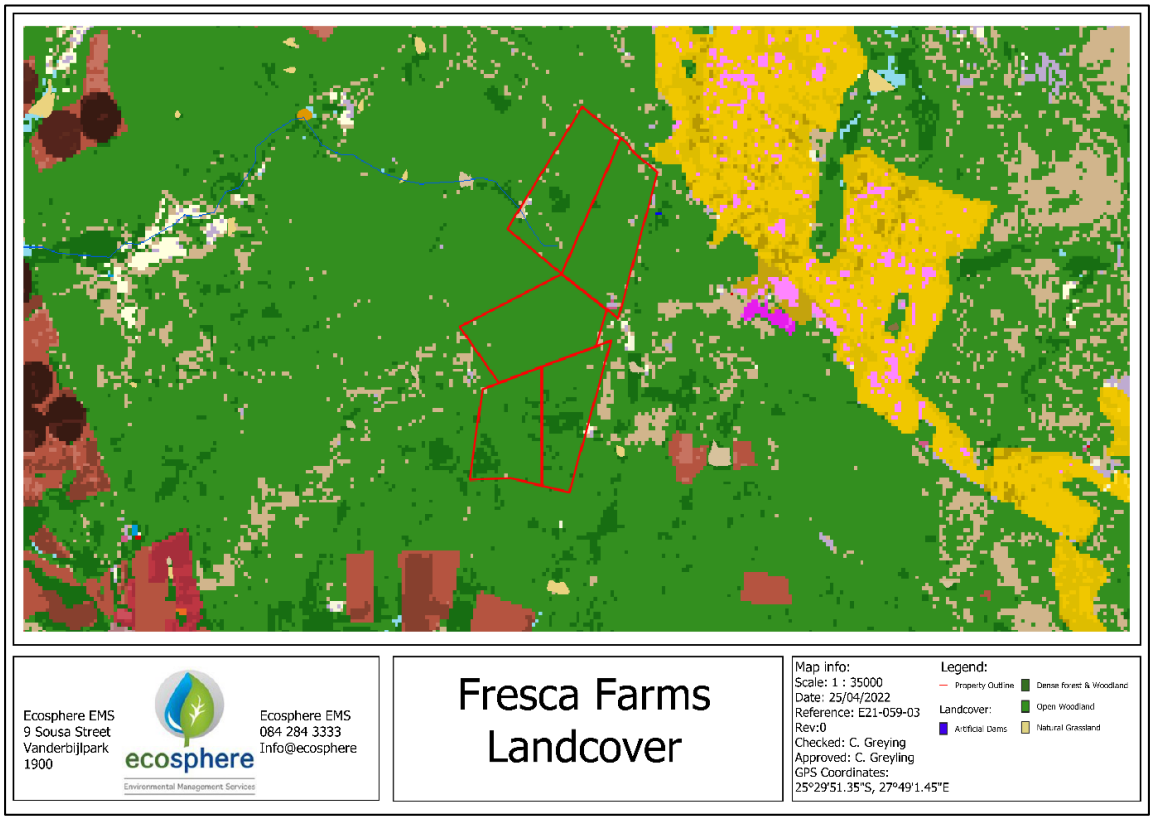


Figure 4: Map indicating the Landcover.

The International Union for Conservation of Nature (IUCN) identifies 110 plant species of conservation concern (SCC) that may occur on the proposed development site as well as

within 25km of the site area. Of these species, 108 are categorized as Least Concern (LC) and 2 are categorized as Data Deficient (DD).

As the development is classed as very highly sensitive in terms of its terrestrial biodiversity sensitivity and given the fact that it falls within a Savanna biome, a Terrestrial Impact Assessment will be required.

1.5.2 Fauna

According to the National Web based Environmental Screening Tool the proposed development site falls within a medium sensitivity area in terms of animal species and a low sensitivity area in terms if aquatic biodiversity.

1.5.2.1 Avifauna

The IUCN identifies 411 Ave/bird SCC that may occur on the proposed development site as well as within 25km of the site area. Of these species, 3 are categorized as Critically Endangered (CR), 4 are categorized as Endangered (EN), 3 are categorized as Vulnerable (VU), 10 are categorized as Near Threatened (NT) and 391 are categorized as Least Concern (Table 9).

Table 14: Birds of conservation concern.

Scientific name	Common name	Red List Category
Gyps africanus	White-backed Vulture	CR
Trigonoceps occipitalis	White-headed Vulture	CR
Necrosyrtes monachus	Hooded Vulture	CR
Torgos tracheliotos	Lappet-faced Vulture	EN
Saggittarius serpentarius	Secretary bird	EN
Gyps coprotheres	Cape Vulture	EN
Polemaetus bellicosus	Martial Eagle	EN
Egrette vinaceigula	Slaty Egret	VU
Oxyura maccoa	Maccoa Duck	VU
Anthripoides paradiseus	Blue Crane	VU
Falco vespertinus	Red-footed Falcon	NT
Calisris ferruginea	Curlew Sandpiper	NT
Phoeniconaias minor	Lesser Flamingo	NT
Gypaetus barbatus	Bearded Vulture	NT
Numenius arquata	Eurasian Curlew	NT
Glareola nordmanni	Black-winged Pratincole	NT
Circus macrourous	Pallid Harrier	NT
Geoclaptes olivaceus	Ground Woodpecker	NT
Anthus hoeschi	Mountain Pipit	NT
Monticola explorator	Sentinel Rock-thrush	NT

1.5.2.2 Mammals

The IUCN identifies 121 mammalian SCC that may occur on the proposed development site as well as within 25km of the site area. Of these species, 1 is categorised as Critically Endangered (CR), 1 is categorised as Endangered (EN), 7 are categorised as Vulnerable (VU), 9 are categorised as Near Threatened (NT) and 103 are categorised as Least Concern (Table 10).

1.5.2.3 Reptiles and amphibians

Table 15: Reptiles of conservation concern.

Scientific name	Common name	Red List Category
Diceros Rhino	Black Rhino	CR
Redunca fulvorufula	Mountain Reedbuck	EN
Panthera pardus	Leopard	VU
Smutsia temminckii	Temmincks Pangolin	VU
Hippopotamus amphibius	Hippopotamus	VU
Giraffa camelopardalis	Giraffe	VU
Felis nigripes	Black-footed cat	VU
Chrysospalax villosus	Rough-haired Golden Mole	VU
Mystromys albicaudatus	White-tailed Rat	VU

1.5.3 Flora and Fauna of Conservation Concern

Based on the findings of the National Web based Screening Tool that indicated that the proposed development falls within an area where terrestrial biodiversity is very sensitive and considering that various SCC (110 plant species, 411 bird species, 32 reptilian species, 24 amphibian species and 121 mammalian species) are expected to occur within and around the area of the proposed development it was decided that a Terrestrial Impact Assessment is required.

1.6 Biodiversity Site Sensitivity

The 2015 North West Biodiversity Sector Plan (NWBSP) map, as provided by the South African National Biodiversity Institute (SANBI), delineates Protected Areas, Critical Biodiversity Areas (CBAs), Ecological Support Areas (ESAs) and modified lands within the province. SANBI ensures that developments are developed sustainably by providing biodiversity data and policy advice for the country of South Africa. SANBI works hand in hand with environmental legislation to identify sensitive ecosystems and ensure specialist studies are carried out where necessary, and to assure that developments do not severely impact South Africa's biodiversity resources.

CBA areas are terrestrial and aquatic areas of the landscape that need to be maintained in a natural or near-natural state to ensure the continued existence and functioning of species and ecosystems for the delivery of ecosystem services. ESA areas are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of irreplaceable CBAs and/or in delivering ecosystem services. Other natural areas consist of all those areas in good or fair ecological condition that fall outside the protected area. Moderately or Heavily Modified Areas (sometimes called 'transformed' areas) are areas that have been heavily modified by human activity so that they are by-and-large no longer natural. According to the NWBSP the proposed project area falls across areas classified as: ESA and CBA. (Figure 5).

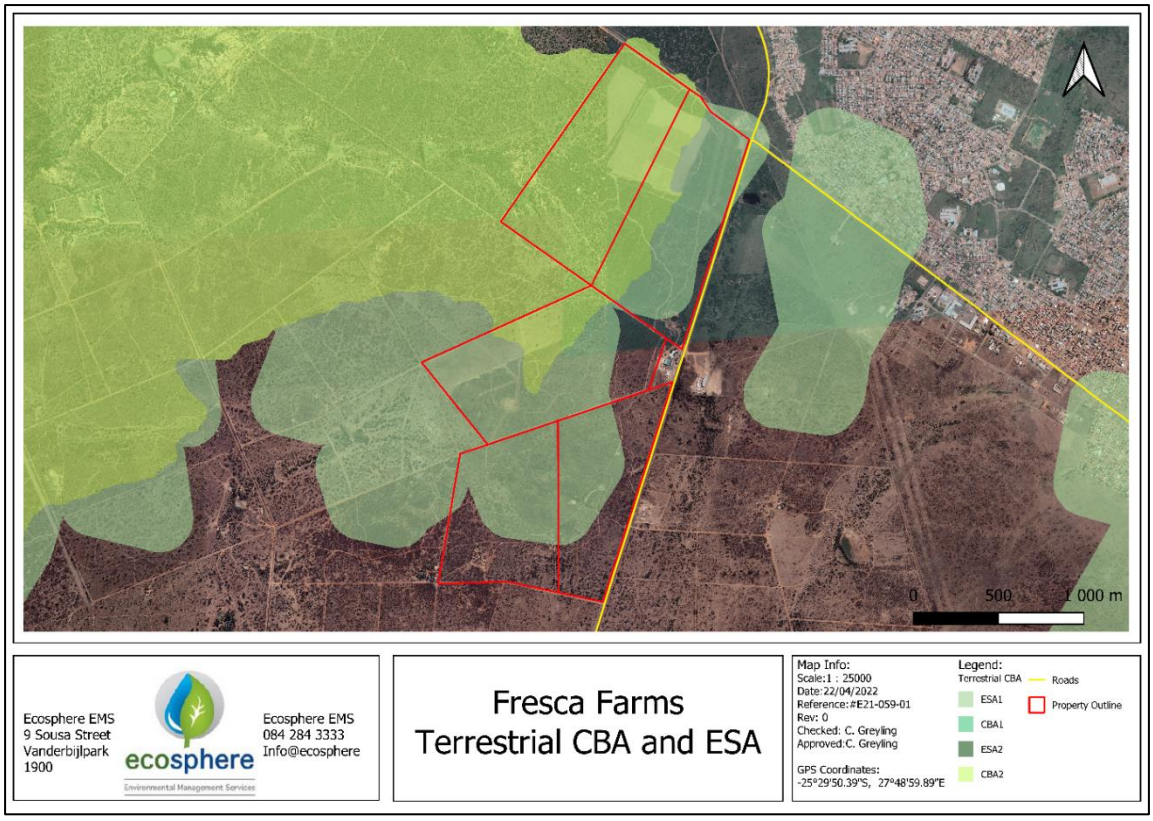


Figure 5: Critical biodiversity sensitive areas

As the proposed development area falls within a CBA 2 and ESA 1, where vegetation will be cleared, a Terrestrial Impact Assessment will be required. Critical Biodiversity Area 2 (CBA 2) are areas that are the best option for meeting biodiversity targets, in the smallest area, while avoiding conflict with other land uses. Ecological Support Area 1 (ESA 1) are areas that support the ecological functioning of protected areas or CBAs or provide important ecological infrastructure.

1.7 Water Resources

Water is one of the North-West Province's most critical and limiting natural resources with only four sources available in the province namely: surface water, groundwater, imported water and re-usable effluent. Figure 6 shows the freshwater resources anticipated within and around the proposed development area. It is recommended that a Freshwater and Delineation Assessment is conducted as the DEA web-based screening tool classifies the area as Very high sensitivity due to the presence of an aquatic CBA (Figure 7). The following water resources were identified by SANBI:

- An aquatic CBA 1 lies on Portion 39
- An aquatic CBA 2 lies on Portion 39
- An aquatic ESA 1 lies on Portion 39 as well as on Portion 1090 and 1091
- An aquatic ESA 2 lies northeast of the proposed development site.
- A national wetland lies approximately 400m southeast of Portion 4.A Water Use License Application (WULA) as well as Aquatic Impact Assessment is required for a development that falls within 500m of a wetland. However, after further investigation the identified wetland was found to be a dam.

- A national river (start of a drainage line) falls within Portion 39 of the proposed development. A WULA as well as Aquatic Impact Assessment is only required for a development that falls within 100m from a river

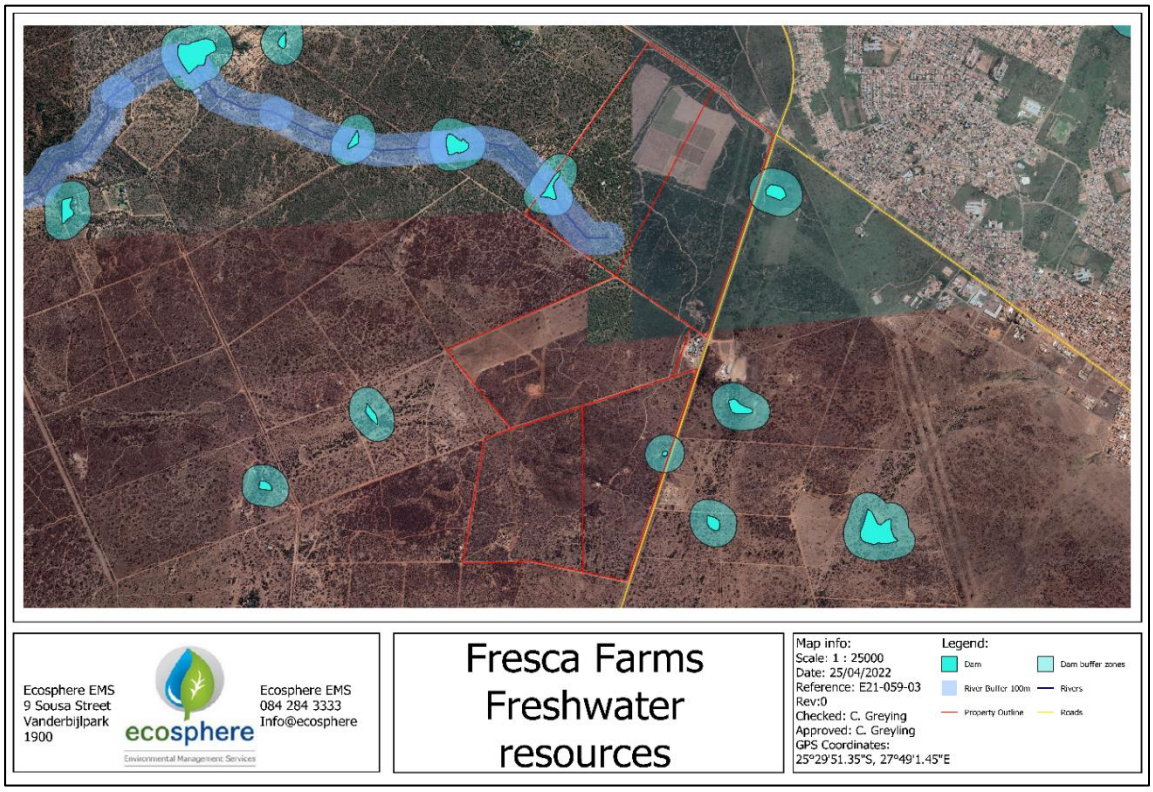


Figure 6: Water resources.

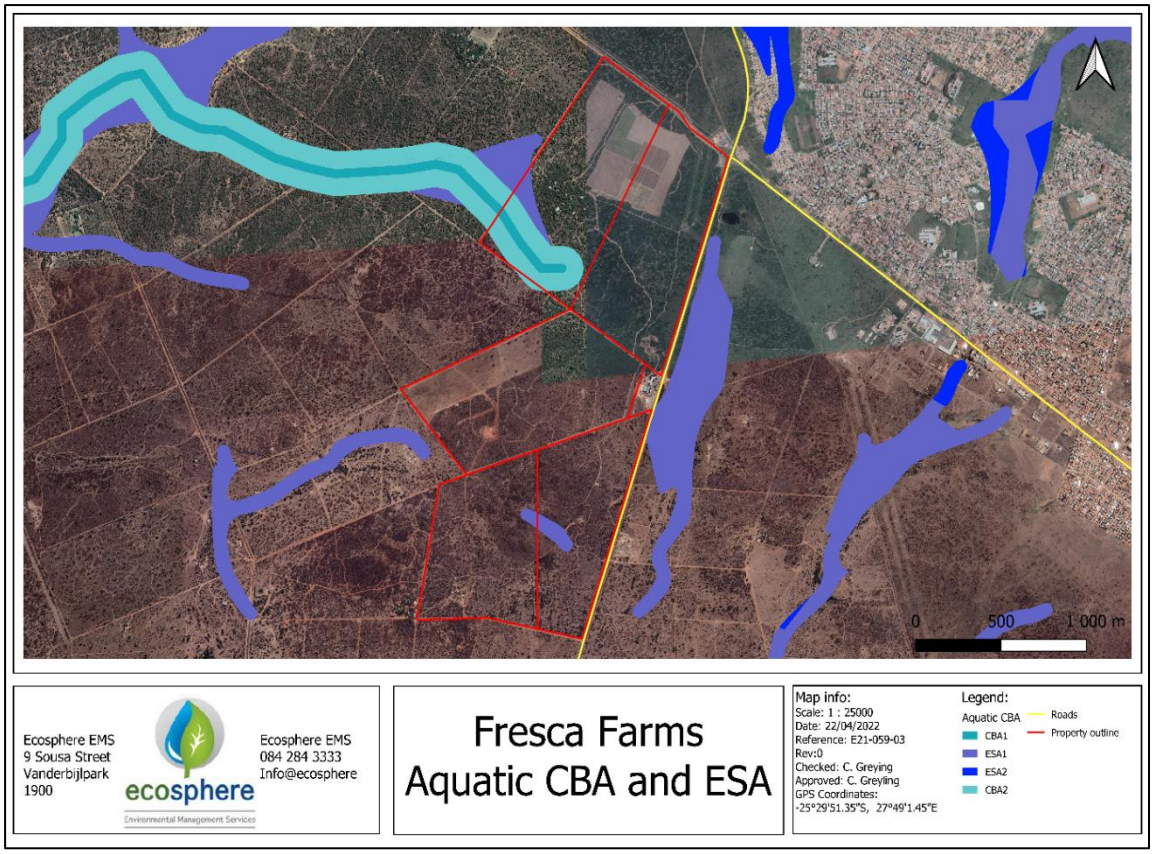


Figure 7: Aquatic CBA and ESA.

It is recommended that a Freshwater and Delineation Assessment is conducted, and its results incorporated in the EIA report to determine whether there are watercourses and wetlands of concern that require further implementation of mitigation measures and buffers from the proposed developmental footprint. An aquatic assessment to evaluate the water resources will form a part of the EIA.

2. Description of the Socio-Economic Environment

The socio-economic status of the area is an important aspect that should be taken into consideration. The economic profile of the municipality, level of employment, economic indicators and level of education will give an indication of the need and desirability of the project.

Benefits of the proposed development include:

- Job creation.
- Training opportunities.
- Growth for local economy.
- Work opportunities for local contractors.
- Food production.
- Food security.
- Left over produce/crops that are not sold to big markets by the farmer will be given to the local community and sold at affordable prices.

2.1 Surrounding Land Uses

The proposed project area is situated 9.7 km North of Brits and 0.4 km southwest of Lethlabile in the North West Province The proposed development is consistent with the activities within the larger surrounding environment. The immediate area surrounding the proposed development site consist of a natural bushveld and a game farm as well as Lethabile informal settlement.

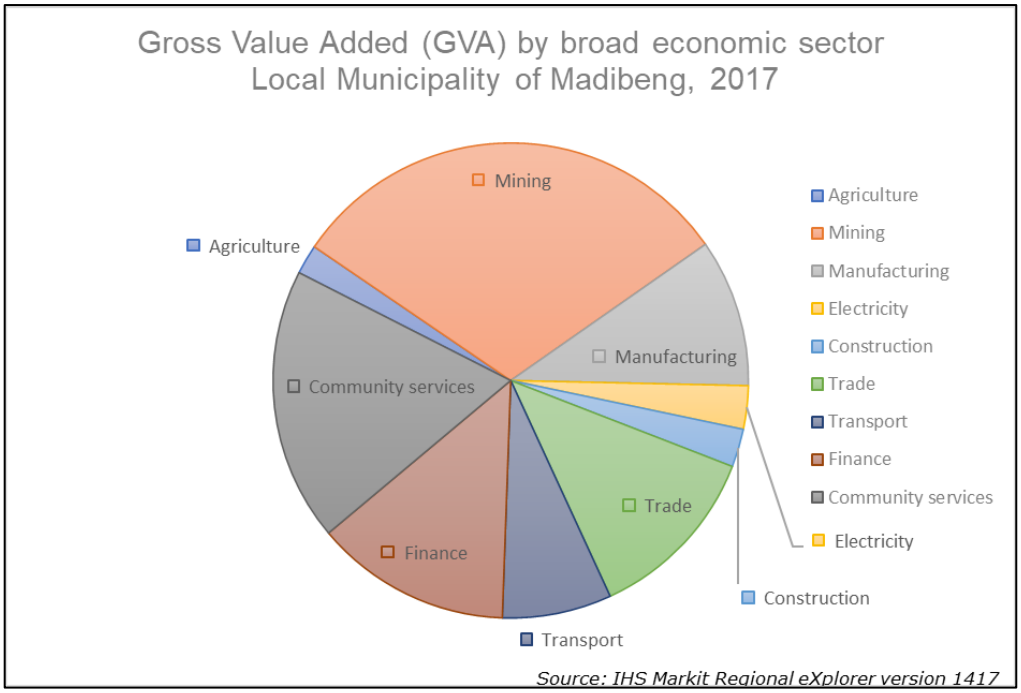
2.2 Economic Profile

According to the 2011 Census Madibeng Local Municipality consist of an area of 3839,20km and has a population of 477 381 people. Madibeng Local Municipality housed approximately 1.0% of the country's total population in 2017 and the Municipal growth rate between 2007 and 2017 was 3.14% in comparison to the 1,56% of South Africa as a whole. The two main economic contributing areas within the Madibeng Local Municipality (LM) are Brits and Hartbeespoort. The natural hydrology of Madibeng presents economic opportunities along the water bodies. The scenic natural setting around dams makes them popular while the agricultural activities are favoured when they are on riverbanks or within close proximity to a river (IDP, 2020/21)

Agriculture, tourism and mining are the main primary economies. The Agricultural sector, which produces food, is the biggest primary economy and is categorized into four classifications, namely, extensive farming (44% of the Municipal area), intensive agriculture (18%), game farming (10%) and subsistence farming. The mining sector is dominated by platinum and chromium mining as well as quarrying activity. Platinum mining activity is located on the south-eastern side of the side of Brits while quarrying is spread around the municipal area. The primary economic activities have to be managed in such a manner as to make sure that their impact on the natural environment and resources is controlled (IDP, 2020/21).Tourism also plays a major economic role as it is based on the natural systems (11%). Scenic routes, heritage sites, resorts and nature reserves are some of the main attractions in the tourism sector (IDP, 2020/21).

Madibeng LM housed approximately 1.0% of the country's total population in 2017. The Municipal growth rate between 2007 and 2017 was 3.14% in comparison to the 1,56% of South Africa as a whole (Climate-data, 2021).

The total employment composition, gross value added (GVA) by the broad economic sector for Madibeng Local Municipality are illustrated below (Pie Chart 1) (IDP, 2020/21).



Pie Chart 1: The total employment composition, gross value added (GVA) by the broad economic sector for Madibeng Local Municipality.

2.3 Demographics

2.3.1 Economic Indicators

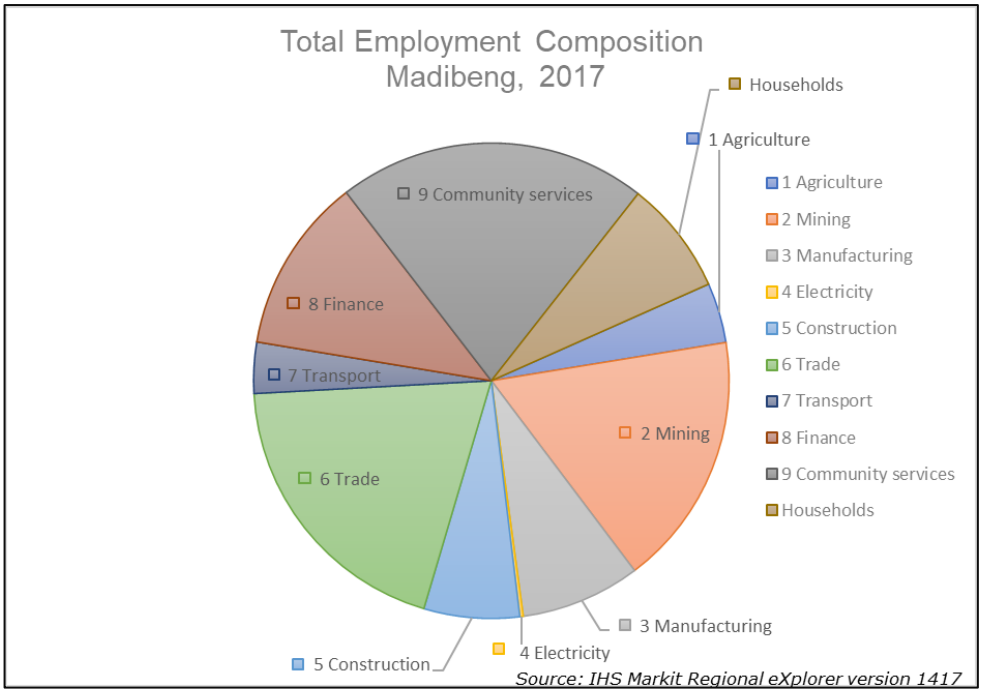
The economic indicators of the Madibeng LM are indicated below (Table 16)

Table 16: Economic indicators.

Economic Indicator	Percentage / Amount
Unemployment Rate	20%
Employment rate in the formal sector	69%
Employment rate in the informal sector	14%
Housing Owned and fully paid off	63%
Households that are informal dwellings (shacks)	35%
Female Headed Households	30%
Households with heads under 18 years old	54%
Number of Households heads under 18 years old	1 084
Total Population	536 111
Average population age	26

2.3.2 Employment Statistics

According to reports from 2017 it seems that most people in Mandibeng Local Municipality works in the Community Service, Trade or Mining sector (Pie Chart 2).



Pie Chart 2: Madibeng's total employment composition.

In 2017 45% of the Madibeng Local Municipality population was employed. Madibeng's employment rate us 10% higher than that of its Bojanala District Municipality (DM), and 25 percent higher than the rate of employment in the North-West Province. 69% of the population of the Madibeng Local Municipality is employed in the formal sector.

2.3.3 Level of Education

The matriculation rate is 34% for the Madibeng Local Municipality area, higher than the average rate in the North-West Province which is 31%. The statistics from 2011 census regarding the education levels of persons older than 20 years can be found in Table 17 below.

Table 17 Level of education in Madibeng Local Municipality

Level of education	Percentage of Population
No Schooling	7.80%
Some primary to secondary schooling	57.30%
Grade 12	7.30%
Higher	27.60%

2.3.4 Ethnic Group

Ethnicity within the Madibeng Local Municipality was grouped into 4 classes namely Black African, Coloured, Indian or Asian, White and other by the South Africa's Census 2011. Table 18 below provides the population group statistics with regards to ethnicity.

Table 18: Ethnic group in Madibeng Local Municipality.

Ethnic group	Percentage of population
Black African	89.28%
Coloured	0.90%
Indian or Asian	0.51%
White	8.94%
Other	0.37%

3. Summaries of the Specialist Studies

3.1 Terrestrial Biodiversity Assessment

The Biodiversity Company was appointed to undertake a fauna and flora baseline assessment in accordance with the amendments to the Environmental Impact Assessment Regulations. 2014 (GNR 326, 7 April 2017) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). It was decided the study was necessary after the National Web based Environmental Screening Tool identified the area within which the development footprint falls as having a high sensitivity with regards to terrestrial biodiversity.

The Terrestrial Biodiversity Assessment found that all future developments may be favourably considered, and no fatal flaws are expected. The future developments must adhere to the prescribed mitigation measures. The findings and recommendations of the assessments were as follows:

3.1.1 Portions 4 of the farm Blaauwbank 241 JQ

A summary of the GIS analysis of the relevance of the farm portions to certain ecological important landscape features are provided in Table 19.

Table 19: Summary of relevance of the project to ecologically important landscape features.

Desktop Information Considered	Relevant/Irrelevant
Ecosystem Threat Status	Relevant – Overlaps with a Least Concerned and Endangered ecosystem
Ecosystem Protection Level	Relevant – Overlaps with a Poorly Protected Ecosystem
Protected Areas	Irrelevant – The project area falls 6.1 km from the Thabaphiri Nature Reserve, thus the project area is outside of the protected areas 5 km buffer zones
National Protected Areas Expansion Strategy	Irrelevant – The project area is 8 km from the closest NPAES area
Critical Biodiversity Area	Relevant – The project area overlaps with a CBA2, and an ESA1 area.
Important Bird and Biodiversity Areas	IIrrelevant – Located 15 km from the Magaliesberg IBA
South African Inventory of Inland Aquatic Ecosystems	Relevant - The project area does not overlap with a NBA river or a NBA wetland, it does however come within 240 m from a CR river which means it falls within the 500m regulated area.
National Freshwater Priority Area	Relevant – The project area does not overlap with a FEPA wetland, but does come within 280 m of a unclassified FEPA wetland
Strategic Water Source Areas	Irrelevant- The project area is 96 km from the closest SWSA

The assessment found that the farm portion overlaps with a Critical Biodiversity Support Area (CBA), a CBA 2 and Ecological support Areas (ESA), ESA 1 area. Portions of the project area has been altered both currently and historically. The present land use had a direct impact on both the fauna and the flora in the area, which is evident in the disturbed and transformed habitats. However, the degraded Bushveld habitat and rocky outcrop can be regarded as important, not only within the local landscape, but also regionally as they are used for habitat, foraging and movement corridors. The habitat sensitivity of the rocky outcrops is regarded as

high, and the degraded Bushveld habitat sensitivity is regarded as medium. This is due to the species recorded as well as the role of this largely intact habitat to biodiversity within a very fragmented local landscape. The high sensitivity terrestrial areas still:

- Serve as and represent ESA as per the Conservation Plan; and
- Support various organisms and may play an important role in the ecosystem if left to recover from the superficial impacts.

The integrity, importance and functioning of these terrestrial biodiversity areas provide a variety of ecological services considered beneficial, with one key service being the maintenance of biodiversity. The preservation of these systems is the most important aspect to consider for the project.

The biodiversity theme sensitivity, as indicated in the screening report, was derived to be Very High, mainly due to the project area being with a CBA2, ESA1 and the proximity to the protected areas expansion strategy. The completion of the terrestrial biodiversity assessment confirmed the very high sensitivity of certain habitats that overlap with the screening report and therefore corroborates the screening report, i.e., the rocky outcrop habitat.

As a mitigation measure it is suggested that all activities should be restricted to or within the low/medium sensitivity areas. No areas of high sensitivity should be impacted on.

3.1.2 Portion 39 and 40 of the farm Blaauwbank 241 JQ

A summary of the GIS analysis of the relevance of the farm portions to certain ecological important landscape features are provided in Table 20.

Table 20: Summary of relevance of the project to ecologically important landscape features.

Desktop Information Considered	Relevant/Irrelevant
Ecosystem Threat Status	Relevant – Overlaps with a Least Concerned and Endangered ecosystem
Ecosystem Protection Level	Relevant – Overlaps with a Poorly Protected Ecosystem
Protected Areas	Irrelevant – The project area falls 5.7 km from the Thabaphiri Nature Reserve; thus the project area is outside of the protected areas 5 km buffer zones
National Protected Areas Expansion Strategy	Irrelevant – The project area is 7.2 km from the closest NPAES area
Critical Biodiversity Area	Relevant – The project area overlaps with a CBA2, and an ESA1 area.
Important Bird and Biodiversity Areas	Irrelevant – Located 15.4 km from the Magaliesberg IBA
South African Inventory of Inland Aquatic Ecosystems	Relevant - The project area does overlap with a CR NBA River but not with a NBA wetland. The project area is 1.1 km from a CR wetland.
National Freshwater Priority Area	Relevant – The project area does overlap with an unclassified FEPA wetland as well as a Phase 2 FEPA river
Strategic Water Source Areas	Relevant- The project area is 92 km from the closest SWSA

Portions of the project area has been altered both currently and historically. The present land use had a direct impact on both the fauna and the flora in the area, which is evident in the

disturbed and transformed habitats. However, the degraded Bushveld habitat and water resources can be regarded as important, not only within the local landscape, but also regionally as they are used for habitat, foraging and movement corridors. The habitat sensitivity of the water resources is regarded as high, and the degraded Bushveld habitat sensitivity is regarded as medium. This is due to the species recorded as well as the role of this largely intact habitat to biodiversity within a very fragmented local landscape. The high sensitivity terrestrial areas still:

- Serve as and represent CBA2 as per the Conservation Plan; and
- Support various organisms and may play an important role in the ecosystem if left to recover from the superficial impacts

The integrity, importance and functioning of these terrestrial biodiversity areas provide a variety of ecological services considered beneficial, with one key service being the maintenance of biodiversity. The preservation of these systems is the most important aspect to consider for the project.

The biodiversity theme sensitivity, as indicated in the screening report, was derived to be Very High, mainly due to the project area being with a CBA2, ESA1 and the proximity to the protected areas expansion strategy. The completion of the terrestrial biodiversity assessment confirmed the very high sensitivity of certain habitats that overlap with the screening report and therefore corroborates the screening report, i.e., the drainage line and artificial dam habitat.

As a mitigation measure it is suggested that all activities must be restricted too within the low/medium sensitivity areas and that no further loss of high sensitivity areas should be permitted. Another recommended mitigation measure was that a no-go buffer of 20 m must be applied around Watercourses, drainage lines, streams and wetlands.

3.1.3 Portions 1090 and 1091 of the farm Hartebeespoort C419 JQ

A summary of the GIS analysis of the relevance of the farm portions to certain ecological important landscape features are provided in Table 21.

Table 21: Summary of relevance of the project to ecologically important landscape features.

Desktop Information Considered	Relevant/Irrelevant
Ecosystem Threat Status	Relevant – Overlaps with a Least Concerned and Endangered ecosystem
Ecosystem Protection Level	Relevant – Overlaps with a Poorly Protected Ecosystem
Protected Areas	Irrelevant – The project area falls 6.7 km from the Thabaphiri Nature Reserve; thus, the project area is outside of the protected areas 5 km buffer zones
National Protected Areas Expansion Strategy	Irrelevant – The project area is 8.6 km from the closest NPAES area
Critical Biodiversity Area	Relevant – The project area overlaps with an ESA1 area.
Important Bird and Biodiversity Areas	Irrelevant – Located 13.8 km from the Magaliesberg IBA
South African Inventory of Inland Aquatic Ecosystems	Relevant - The project area does not overlap with an NBA River nor a NBA wetland. The project area is 950 m from a CR river.
National Freshwater Priority Area	Relevant – The project area does not overlap with a FEPA wetland or FEPA river; it does however come

	within 332 m of an unclassified Wetland. This means that it does falls within the 500 m regulated area.
Strategic Water Source Areas	Irrelevant- The project area is 95.6 km from the closest SWSA

Portions of the project area has been altered both currently and historically. The present land use had a direct impact on both the fauna and the flora in the area, which is evident in the disturbed and transformed habitats. However, the degraded Bushveld habitat and rocky ridge can be regarded as important, not only within the local landscape, but also regionally as they are used for habitat, foraging and movement corridors. The habitat sensitivity of the rocky ridge is regarded as high, and the degraded Bushveld habitat sensitivity is regarded as medium. This is due to the species recorded as well as the role of this largely intact habitat to biodiversity within a very fragmented local landscape. The high sensitivity terrestrial areas still:

- Serve as and represent ESA as per the Conservation Plan; and
- Support various organisms and may play an important role in the ecosystem if left to recover from the superficial impacts.

The integrity, importance and functioning of these terrestrial biodiversity areas provide a variety of ecological services considered beneficial, with one key service being the maintenance of biodiversity. The preservation of these systems is the most important aspect to consider for the project.

The biodiversity theme sensitivity, as indicated in the screening report, was derived to be Very High, mainly due to the project area being with an ESA1 and the proximity to the protected areas expansion strategy.The completion of the terrestrial biodiversity assessment confirmed the very high sensitivity of certain habitats that overlap with the screening report and therefore corroborates the screening report, i.e., the rocky ridge habitat.

As a mitigation measure it is suggested that all activities must be restricted too within the low/medium sensitivity areas and that no further loss of high sensitivity areas should be permitted.

3.2 Heritage Impact Assessment

PGS Heritage (Pty) Ltd (PGS) was appointed by Ecosphere (Pty) Ltd to undertake a Heritage Impact Assessment (HIA) for the proposed farming activities on Portions 4, 39 and 40 of the farm Blaauwbank 241 JQ and Portions 1090 and 1091 of the Farm Hartebeestpoort V419 JQ, Lethlabile, Madibeng Local Municipality, Northwest Province.

An archaeological and historical desktop study was undertaken to provide a historical framework for the project area and surrounding landscape. This was augmented by an assessment of previous archaeological and heritage studies completed for the surrounding landscape. Furthermore, an assessment was made of the early editions of the relevant topographic maps.

The 5 farm portions were grouped together in three areas and separate assessments were done for the 3 areas. The findings and recommendations of the assessment were as follows for the 3 groups:

3.2.1 Portions 4 of the farm Blaauwbank 241 JQ

During the heritage walk through survey, several heritage resources were identified within the proposed farming landscape on portion 4 of the farm Blaauwbank 241 JQ. The remains of two large archaeological were identified. Both sites were already impacted by bush clearing activities Figure 8 illustrates the extent of the bush clearing already completed and the relative extent of the two sites Le08 and Le09.

Site Le08 is an EFC Iron Age settlement and is approximately 100m x 150m in size. A large portion of the site has been disturbed by clearing of vegetation and ploughing as well as for the construction of a pipeline where a trench has been dug through the site has exposed an abundance of cultural material such as faunal material, ceramic sherds, two sets of human remains and fragments of a polished clay floor. The trench also cuts through a few middens and a kraal while bus clearing and ripping has also exposed some middens to the north of the trench. The decorated (diagnostic) ceramics identified in the disturbed archaeological deposit is indicative of the Eiland facies that is part of the Kalundu Tradition from the Western stream of the EIA dating between 1000 to 1300AD (Huffman, 2007, Biemond, 2014 and pers. comm.)

A second distinct set of diagnostic pottery was found in the exposed midden to the north of the trench. Early indications are that the incised lines of arcades and triangles are associated with the Urewe tradition – Moloko branch and dated from around 1350AD to 1700AD. The absence of stone walling can however indicate earlier dates of 1300 to1500AD (Huffman, 2007). The diagnostic pottery indicative of am early second millennium settlement, rich cultural deposits and in situ stone structures provides unparalleled research opportunity and can provide further insight into the development of the EIA EFC settlement development and climatic interaction. Although the site was damaged during the bush clearing it retains a large archaeological body of knowledge in primary context. It is rated as having a high cultural heritage significance and is graded with a IIIA heritage rating.

Site Le09 was impacted by bush clearing and soil ripping to a depth of 20cm. This exposed a large concentration of diagnostic ceramics mostly related to the Eiland facies of the first part of the second millennium AD. No structures were identified in the plough area. It was indicated that the ploughing activities were not deeper than 20 cm and all indications are that only the surface of the archaeological deposit was disturbed. The possibility of retrieving data from the disturbed site still exists and must be considered in retrieving as much as possible information to mitigate the damage already done. The site is rated as having a moderate heritage significance and rated as having a IIIB heritage rating. Of low heritage significance is the stone wall finds at Le20 has a low heritage significance and grade as NCW.

According to the SAHRIS palaeontological sensitivity map, the proposed project area falls within a high zero sensitivity zone and n further studies will be required.The proposed farming activities will result in the clearing of extensive tract of vegetation for cultivating vegetables and planting of orchards. These activities will probably be impacting the whole of the farm portion and will directly be impact on and destroy the identified sites.

The impact significance before mitigation on the archaeological sites at Le08 and Le09 will be Very High negative. The impact of the proposed development will be local in extent. The possibility of the impact occurring is that it will happen. The expected duration of the impact is assessed as permanent. Implementation of the recommended mitigation measures will reduce this impact rating to an acceptable moderate negative impact. The proposed mitigation measures are listed in Table 22.

Table 22: Heritage management recommendations

Area and site no.	Mitigation Measures
General project area	Implement a chance to find procedures in case possible heritage finds are uncovered.
Archaeological Structures Le08	• The extent of the site must be identified by a qualified archaeologist and markers placed to determine up to where bush clearing can be done for site **Le08**. • Documentation of the structures and features already disturbed must be done after issuing of a permit under s35 of the NHRA • The two sets of human remains must be excavated under the s35 permit, analysed and with consultation reburied in the closest municipal cemetery. • The documentation must include mapping, layout sketches and test excavation to determine the cultural affinity and temporal scale of the archaeological features • Undisturbed stone structures close to the trench must be documented and test excavation in one of the undisturbed midden to the south of the trench must be conducted. • An application for destruction will then need to be submitted to SAHRA by the developer with the backing of the report emanating from the documentation work • Upon issuing of the destruction permit the specific site can be destroyed and bush clearing continue in those specific areas
Archaeological Structures Le09	• Documentation of the structures and features already disturbed must be done after issuing of a permit under s35 of the NHRA • The documentation must include mapping, layout sketches and test excavation to determine the cultural affinity and temporal scale of the archaeological features. • An application for destruction will then need to be submitted to SAHRA by the developer with the backing of the report emanating from the documentation work • Upon issuing of the destruction permit the specific site can be destroyed and bush clearing continue in those specific areas

The overall impact of the proposed project, on the heritage resources identified during this report, is seen as acceptably low after the recommendations have been implemented. Therefore, impacts can be mitigated to acceptable levels allowing for the development to be authorised.

3.2.2 Portion 34 and 40 of the farm Blaauwbank 241 JQ

During the heritage walk through survey, several heritage resources were identified within the proposed farming landscape on portion 39 and 40 of the farm Blaauwbank 241 JQ. The remains of three large archaeological settlements were identified. The northern section (Le13 and Le14) of one site was already impacted by bush clearing activities and planting activities already occurred at Le14.

In all likelihood the two identified areas at Le11 and Le12 are part of the same large LIA Early Farming Community (EFC) settlement that continues up to points Le13 and Le14 covering a total area of approximately 800m x 200m. The cultural remains associated with this settlement includes numerous ash middens, low stone walling, grain bin platforms as well as some

exposed burned clay floors or the remains of hut rubble. Ethnographic research in the early part of the 20th century (Breutz, 1934) has linked this area to the Bakwena ba Mogôpa and Bapo ba Mogale as it lies between the tribe's main historical settlement areas at Jericho (15km north) and Mamogaleskraal 6km southwest.

This EFC settlement extent over approximately 2 ha with some ephemeral indications of cultural material extending even further to the east. The size and preservation of the remains of material cultural adds to the cultural significance of the site and can be rated as having a medium-high heritage significance grading and of local significance IIIB. According to the SAHRIS palaeontological sensitivity map, the proposed project area falls within a high zero sensitivity zone and n further studies will be required.

The proposed farming activities will result in the clearing of extensive tract of vegetation for cultivating vegetables and planting of orchards. Some of these activities have already impacted on sections of the archaeological site at Le13 and Le14. The whole of the farm portion and will eventually be directly impact on and destroy the identified sites.

The impact significance before mitigation on the archaeological sites at Le11 to Le14 will be Very High negative. The impact of the proposed development will be local in extent. The possibility of the impact occurring is that it will happen. The expected duration of the impact is assessed as permanent. Implementation of the recommended mitigation measures will reduce this impact rating to an acceptable moderate negative impact. The proposed mitigation measures are listed in Table 23.

Table 23: Heritage management recommendations

Area and site no.	Mitigation Measures
General project area	Implement a chance to find procedures in case possible heritage finds are uncovered.
Archaeological Structures Le13-14	• Documentation of the structures and features already disturbed must be done after issuing of a permit under s35 of the NHRA • The documentation must include mapping, layout sketches and test excavation to determine the cultural affinity and temporal scale of the archaeological features • An application for destruction will then need to be submitted to SAHRA by the developer with the backing of the report emanating from the documentation work • Upon issuing of the destruction permit the specific site can be destroyed and bush clearing continue in those specific areas
Archaeological Structures Le11-12	• A 30m No-Go-Buffer-Zone be recommended for the larger stone wall sites. • The extent of the site must be identified by a qualified archaeologist and markers placed to determine the 30 meter buffer where no bush clearing can be done. • In the event that this site cannot be avoided the process as described for site Le13-14 must be followed.

Thus, overall impact of the proposed project, on the heritage resources identified during this report, is seen as acceptably low after the recommendations have been implemented.

Therefore, impacts can be mitigated to acceptable levels allowing for the development to be authorised.

3.3 Portions 1090 and 1091 of the farm Hartebeespoort C419 JQ

During the heritage walk through survey, several heritage resources were identified within the proposed farming landscape on portion 1090 and 1091 of the farm Hartbeespoort C 419.. A late Iron Age (LIA) large stone walled settlement was identified. Stretching from the east of the study area (Le02,03, 06 and 07) through the central neck of the hill (Le04 and 05) from where is spreads out in to a western and northern direction on to the high plain area (Le10) (Figure 8). The central area around Le04/05 has a large central cattle kraal, while towards the north in the area of Le10 vegetation species associated with LIA settlement such as aloe dominate the landscape. This extensive stonewalled settlement is similar in nature than those LIA settlements at Mmakau (Swartkoppies) some15 kilometres to the southeast, Losperberg (15km to the southwest), and Mamogaleskraal (some 6km to the southwest). This archaeological settlement is most probably associated with the Bakwena ba Mogôpa and Bapo ba Mogale as it lies between the tribe's main historical settlement areas at Jericho (15km north) and Mamogaleskraal 6km southwest.

Of lesser significance is the stone wall finds at Le01 and Le19. The stone enclosures at Le19 spills over into the next farm portion towards the west and is delineated by the dirt road just to the east of the walling on Portion 1090.

The stonewalling is fairly well preserved in certain areas (Le10) with indications of ash middens (Le04) and a large kraal at Le05. The main stone walled settlement extent over approximately 11 hectares and seems to be confined to the higher lying areas of the two farm portions. The size and preservation of the remains of material cultural adds to the cultural significance of the site and the area containing (Le04, 05, 06, 07 and Le10) can be rated as having a high heritage significance grading and of local significance IIIA.The structures at Le01-03 and Le19 is rated as having a medium to low heritage significance grading and of local significance IIIC.

According to the SAHRIS palaeontological sensitivity map, the proposed project area falls within a high zero sensitivity zone and n further studies will be required.The proposed farming activities will result in the clearing of extensive tract of vegetation for cultivating vegetables and planting of orchards. While these activities will most probably be confined to the lower lying flat areas some archaeological heritage could directly be impacted on and be destroyed without the necessary delineation and conservation activities in place before vegetation clearing starts.

The impact significance before mitigation on the archaeological sites at Le01-03 and Le19 will be High negative. The impact of the proposed development will be local in extent. The possibility of the impact occurring is that it will happen. The expected duration of the impact is assessed as permanent. Implementation of the recommended mitigation measures will reduce this impact rating to an acceptable Low negative impact.

The impact significance before mitigation on the archaeological sites at (Le04, 05, 06, 07 and Le10 will be Moderate negative. The impact of the proposed development will be local in extent. The possibility of the impact occurring is that it could happen. The expected duration of the impact is assessed as potentially permanent. Implementation of the recommended mitigation measures will reduce this impact rating to an acceptable VERY LOW negative impact. The proposed mitigation measures are listed in Table 24.

Table 24: Heritage management recommendations

Area and site no.	Mitigation Measures
General project area	Implement a chance to find procedures in case possible heritage finds are uncovered.
Archaeological Structures Le01-03 and Le19	• Documentation of the structures and features already disturbed must be done after issuing of a permit under s35 of the NHRA • The documentation must include mapping, layout sketches and test excavation to determine the cultural affinity and temporal scale of the archaeological features • An application for destruction will then need to be submitted to SAHRA by the developer with the backing of the report emanating from the documentation work • Upon issuing of the destruction permit the specific site can be destroyed and bush clearing continue in those specific areas
Archaeological Structures Le04, 05, 06, 07 and Le10	• A 30m No-Go-Buffer-Zone be recommended for the larger stone wall sites. • The extent of the site must be identified by a qualified archaeologist and markers placed to determine the 30 meter buffer where no bush clearing can be done.

The overall impact of the proposed project, on the heritage resources identified during this report, is seen as acceptably low after the recommendations have been implemented. Therefore, impacts can be mitigated to acceptable levels allowing for the development to be authorised

4. The Decided Preferred Alternative

Based on the findings of the desktop study as well as the Terrestrial Biodiversity Assessments and the Heritage Impact Assessments it was determined that Alternative 2 will be the preferred alternative as it will have less risk and a smaller impact on the environment compared to Alternative 1. Alternative 2 as the preferred option and the No-go Alternative, will be brought forward into the EIA phase of the development. It is recommended that a Freshwater and Delineation Assessment is conducted and its results incorporated in the EIA report to determine whether there are watercourses and wetlands of concern that require further implementation of mitigation measures and buffers from the proposed developmental footprint.

Section F: Environmental Impact Assessment

1. Methodology

The methodology followed to determine the significance of each impact caused by the activity are set out below:

The potential impacts are assigned a significance rating (S). (S) is formulated by adding the sum of numbers assigned to Magnitude (M) Extent (E) and Duration (D), and multiplying the sum by the Probability (P): **S= (M+E+D) P.** The criteria of the significance rating is explained further in Table 25.

Table 25: Impact significance rating criteria

Criteria	Category	Score
Magnitude (How serious is the impact and how easily can it be reversed)	None	0
	Low	2
	Moderate	4
	High	6
Extent (What is the scale And size of the impact)	Site	1
	Local	2
	Regional	3
	National	4
Duration (Over what time scale Will this impact have effect)	Immediate	1
	Short Term	2
	Medium Term	3
	Long Term	4
	Permanent	5
Probability (How likely is it that This impact will occur)	Improbable	1
	Probable	2
	Definite	3

The significance ratings calculated has been done by before taking the proposed mitigation measures into account and after taking the proposed mitigation measures into account.
The significance ratings are given below and summarised in Table 26:

- Zero impact: where the project will have no impact.
- Low is <20: where this impact would not have a direct influence on the decision to develop in the area,
- Medium is 20-40: where the impact could influence the decision to develop in the area unless it is effectively mitigated; and
- High is >40: where the impact must have an influence on the decision process to develop in the area.

Table 26: Description of impact significance rating.

Impact Significance	Description of Significance Ratings
Zero	Project will have no impacts.
Low is <20	Impacts have no influence on decision.
Medium is 20 – 40	Impacts could influence decision.
High is >40	Impacts must influence decision.

2. Identification of Impacts and their Significance

Preliminary impacts were identified as part of the scoping phase. Some of the identified impacts will be further investigated as part of the EIA phase. As part of the scoping phase the calculation described in Section E.1 is used to determine the pre-and post-mitigation impact significance of the preliminary identified impacts. Mitigation measures should be implemented to mitigate the impacts and limited it to the proposed development site. The preliminary impacts were determined for the different phases of the project in Table 27, Table 28 and Table 29.

2.1 Impact significance during the Planning and Design Phase

Table 27: Impact significance of impacts identified during the planning and design phase.

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
Socio-Economic	**Employment opportunities**	Permanent and temporary employment will enhance Socio-economic development.	Positive	Positive	Positive	Positive	Positive
Legal Compliance	**Environmental representative**	The absence of an a employee that has been trained to act as an Environmental representative may result in non-compliance with this Environmental Management Programme Report (EMPr)	(4+2+4)2	20	(2+1+2)2	10	Direct
	Environmental Awareness Training	The lack of training of staff on environmental requirements could result in adverse environmental impact and contravention of the environmental	(4+2+4)2	20	(2+1+2)2	10	Direct

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
		authorisation and EMPr					
	Development Limitations	Unclear understanding and indication of the proposed development footprint boundaries and no- go areas can result in adverse environmental impacts.	(4+2+4)2	20	(2+1+2)2	10	Direct

2.2 Impacts Significance during Clearing Phase

Table 28: Impacts significance of the identified impacts during the clearing phase

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
Socio-Economic	**Employment of contractors to aid in clearing phase**	Socio-economic development through job creation and training opportunities.	Positive	Positive	Positive	Positive	Positive
Soil Quality	**Storage and handling of hazardous substances**	Contamination of soil through oil/fuel leaks or spillage from machinery and/or agricultural vehicle and construction vehicles or improper storage.	(3+1+2)2	12	(2+1+2)1	5	Direct
	Storage of equipment, vehicles, and machinery	Disturbance of soils due to the parking of vehicles and storage of equipment and machinery outside of designated areas	(3+1+2)2	12	(2+1+2)1	5	Direct
	Removal of vegetation	Loss/ change of topsoil layer during the initial stages of vegetation clearance that can lead to wind and water erosion.	(3+1+3)2	14	(2+1+3)1	6	Direct
Air Quality	**Land clearing activities**	Air pollution due to dust generated by agricultural vehicles and equipment/	(3+2+2)2	14	(2+1+2)2	10	Direct

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
		machinery during clearing activities (especially during the dry, windy conditions.)					
	Use of heavy vehicles and machinery	Dust pollution due to dust generated by the movement construction vehicles and equipment/machinery	(2+2+2)2	12	(1+1+2)2	8	Direct
		Air pollution due to CO2 emissions from agricultural vehicles	(2+2+4)2	16	(1+2+4)2	14	Cumulative
Terrestrial Ecology	**Clearing and removal of vegetation**	Loss of fauna due to habitat destruction. Faunal populations could become locally extinct or diminish in size due to fatalities such as, accidents, opportunistic hunting, baiting, trapping.	(4+2+4)2	20	(2+1+3)2	12	Direct

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
		The clearing of vegetation, soil ripping, and land preparation will lead to the damage and loss of flora biodiversity and SCC within the proposed development footprint.	(4+2+4)2	20	(2+1+3)2	12	Direct
		Disturbance caused by the vegetation removal provides alien invasive plant species with the opportunity to spread and grow which could pose a threat to surrounding ecosystems.	(4+2+4)2	20	(2+1+3)2	12	Direct
	Uncontrolled activities	Open fires and smoking may cause uncontrollable bush fires.	(6+2+3)2	22	(4+1+3)1	8	Direct
Water Quality	**Storage and handling of hazardous substances**	Pollution of the groundwater and surface water resources through oil leaks or spillage due to vehicle maintenance, improper storage,	(3+2+3)2	16	(2+1+3)2	12	Direct

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
		and handling and/or storage of hazardous materials /chemicals such as fuel					
	Stormwater management	The contamination of water resources through stormwater runoff	(3+2+3)2	16	(2+1+3)2	12	Direct
	Sanitation facilities	Lack of access to ablution facilities or improper management of ablution facilities can result in pollution of surrounding environment	(4+2+3)2	18	(2+1+3)1	6	Direct
Waste Management	**Storage of general waste**	Pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of general waste	(3+2+4)2	9	(1+1+4)2	12	Direct
		Pollute surface water as well as groundwater and therefore water quality	(3+2+4)2	9	(1+1+4)2	12	Direct
		Soil pollution due to the inappropriate	(3+2+4)2	9	(1+1+4)2	12	Direct

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
		storage and disposal of hazardous waste					
	Storage of hazardous waste	Pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of the hazardous waste	(4+2+4)2	20	(1+1+4)2	12	Direct
		Pollute surface water as well as groundwater and therefore water quality	(3+2+4)2	18	(2+1+4)2	14	Direct
		Soil pollution due to the inappropriate storage and disposal of hazardous waste	(3+2+4)2	18	(2+1+2)2	10	Direct
	Storage of Cleared vegetation	Disturbance to the site and surrounding terrestrial environment due to the inappropriate storage and disposal of waste	(3+2+4)2	9	(1+1+4)2	12	Direct
	Sanitation facilities	Lack of access to ablution facilities or improper management of ablution facilities can result in pollution of	(4+2+3)2	18	(2+1+3)1	6	Direct

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
		surrounding environment					
Heritage	**Vegetation clearing activities**	Loss of sites with significant heritage	(5+1+4)2	20	(2+1+1)2	8	Direct
Noise	**Noise levels by construction vehicles and machinery**	Noise disturbances caused by agricultural and construction activities by the machinery/vehicles used for clearing vegetation and land preparation	(2+1+1)2	8	(1+1+1)2	6	Direct
Visual	**Land clearing activities**	Vegetation clearing activities could result in the visual disturbance. The transformation of the current indigenous vegetation to crop production is likely to alter the aesthetic quality.	(5+2+4)2	22	(3+2+4)2	18	Direct
Climate Change	**Clearance of vegetation**	Clearing land for agricultural production contributes to climate change due to the release of carbon stored in the natural vegetation when they are cut/removed.	(4+2+4)2	20	(3+2+4)2	18	Cumulative

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
	Use of heavy vehicles and machinery	Air pollution due to CO2 emissions from agricultural vehicles	(2+2+4)2	16	(1+2+4)2	14	Cumulative

2.3 Impacts significance during the Operational Phase

Table 29: Impact significance of the impacts identified during the operational phase.

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
Socio-Economic	**Employment of permanent and temporary farm workers.**	The operational phase will provide job creation, economic growth, and rural development	Positive	Positive	Positive	Positive	Positive
	Crop cultivation	Contributes to food Security	Positive	Positive	Positive	Positive	Positive
Soil Quality	**Irrigation of crops**	Poor irrigation methods and systems can result in erosion	(3+1+3)2	14	(1+1+3)2	10	Cumulative
	Storage and handling of hazardous substances	The improper storage application and use of oil, fuel, fertilizers, pesticides, and/or herbicides, could lead to the	(4+2+4)2	20	(2+1+4)2	14	Direct

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
		loss/alteration of soil quality and structure within the development area.					
	Stormwater management	The failure to install storm water management measures could result in increased runoff causing erosion.	(3+2+3)2	16	(2+1+3)2	12	Direct
Air Quality	**Use of heavy vehicle and machinery for land preparation and agricultural activities.**	Dust pollution during the dry windy conditions.	(2+2+2)2	12	(1+1+2)2	8	Direct
		Air pollution due to CO^2 emissions from agricultural vehicles and the use of fertilizers, herbicides and/or pesticides on the site	(2+2+4)2	16	(1+2+4)2	14	Cumulative
Terrestrial Ecology	**Uncontrolled activities**	During the operational phase, vehicles, crew and materials could increase animal fatalities through opportunistic hunting, collisions, accidents or baiting and trapping.	(5+2+3)2	20	(3+1+3)2	14	

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
		The development of bush fires as a result of smoking or the creation of open fires.	(6+2+3)2	22	(4+1+3)1	8	Direct
	Farming practices and/or activities	Unsustainable and irresponsible farming practices could result in the loss or damage of the surrounding indigenous vegetation and the death of animals	(4+2+4)2	20	(2+1+4)2	14	Direct
	Disturbances caused by operational activities	Poor rehabilitation of disturbed areas may lead to the permanent degradation of ecosystems as well as allow alien invasive vegetation to encroach on indigenous vegetation	(4+2+4)2	20	(2+1+3)2	12	Direct
Water Quality	Storage and handling of hazardous substances	Surface and ground water contamination through the overuse and spillage or improper application of fertilizers, herbicides, and	(3+2+3)2	16	(2+1+3)2	12	Direct

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
		pesticides and petrochemicals.					
	Stormwater management	The contamination of water resources through stormwater runoff	(3+2+3)2	16	(2+1+3)2	12	Direct
	Irrigation of crops	The consumption of excessive water during irrigation of crops will impact on water quality	(3+2+3)2	16	(2+2+3)2	14	Direct
Waste Management	**Generation and storage of general and hazardous waste**	Pollution of the site and surrounding terrestrial ecosystem due to the inappropriate storage and disposal of general waste	(3+2+4)2	9	(1+1+4)2	12	Direct
		Pollute surface water as well as groundwater and therefore water quality	(3+2+4)2	9	(1+1+4)2	12	Direct
		Soil pollution due to the inappropriate storage and disposal of hazardous waste	(3+2+4)2	9	(1+1+4)2	12	Direct
	Storage of hazardous waste	Pollution of the site and surrounding terrestrial ecosystem	(4+2+4)2	20	(1+1+4)2	12	Direct

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
		due to the inappropriate storage and disposal of the hazardous waste					
		Pollute surface water as well as groundwater and therefore water quality	(3+2+4)2	18	(2+1+4)2	14	Direct
		Soil pollution due to the inappropriate storage and disposal of hazardous waste	(3+2+4)2	18	(2+1+2)2	10	Direct
	Sanitation facilities	Lack of access to ablution facilities or improper management of ablution facilities can result in pollution of surrounding environment	(4+2+3)2	18	(2+1+3)1	6	Direct
Heritage	**Uncontrolled movement and agricultural activities**	Loss of natural or cultural heritage due to not staying within authorized footprint	(4+2+5)2	22	(1+2+5)2	16	
	Ploughing or tillage of the soil	Could lead to the discovery and destruction of artefactual burial sites	(4+2+5)2	22	(2+2+5)2	18	Direct

Component	Aspect	Potential Impact	Before Mitigation		After Mitigation		Type of Impact
			(M+E+D)P	Impact Significance	(M+E+D)P	Impact Significance	
Visual	**Transformation of the current indigenous vegetation to crop production**	The visual impacts of the agricultural activities will alter the aesthetic quality of the area.	(4+2+4)	20	(3+2+4)2	18	Direct
Noise	**Noise from construction vehicles and machinery**	As the site would have been established, no major impacts are expected, however due to the phased nature of agricultural activities, there may be little noise during the operational phase when harvesting takes place	(3+2+2)2	14	(2+2+2)2	12	Direct
Climate Change	**Use of fuel powered machinery/equipment**	The use of fuel powered machines/equipment contributes to the build-up of greenhouse gases in the atmosphere	(3+2+4)2	18	(2+2+4)2	16	Cumulative

2.4 Impacts during Decommissioning Phase

Due to the nature of the project there has been no plans made for a decommissioning phase as the site will continue to be used for agricultural activities. If the project is decommissioned at a later stage, the impacts associated are likely to be similar to the impacts which have been identified in the construction phase. It is then recommended that the EMPr be updated by a suitably qualified EAP prior to the decommissioning of the project abs implementation throughout the decommissioning phase.

3. Preliminary Mitigation Measures

Preliminary mitigation measures have been identified for the preliminary impacts identified under each component identified during the different phases of the proposed project (planning and design, clearing and operational phase). The mitigation measures will be re-evaluated and updated during the EIA phase The preliminary mitigation measures are as follows:

3.1 Socio-Economic

The social-economic aspect will also positively impact the following during the clearing and operational phase:

- Food security: The establishment of the farm would have a positive impact on food security in the region.
- Employment: The creation of work and training opportunities for the local workforce.
- Rural development: Will have a positive impact on the livelihoods of people in the surrounding communities.
- Poverty reduction: Employment opportunities and the creation of jobs by the establishment of the farm would alleviate poverty.
- Economic growth: Economic growth would be brought to the area by the establishment of the farm

It is important that it is established during the planning and design phase of the project that the appointment of local contractors and employees are prioritised over those that come from other areas. This will help ensure that the food security, employment, rural development, poverty reduction and economic growth within the local community takes place.

3.2 Legal Compliance

To prevent legal non-compliance, it is important that it is established during the planning and design phase that an employee will be appointed and trained to act as the environmental representative. The applicant should ensure that environmental training will provide to all the employees and that the project manager and contractors are clear about the limitations and no-go areas with regards to the development footprint. Having an employee function as an environmental representative or officer for Fresca Farms will help ensure that the proposed development takes place according to the environmental authorisation and Environmental Management Programme (EMPR) which will ensure legal compliance. It is however also necessary to ensure that all employees are aware of the boundaries development footprint to prevent non-compliance and therefore the boundaries and no-go areas should be identified during the planning phase. The boundary and no-go areas can be indicated using demarcation and by providing each employee with a map that show the relevant areas. Training material should be developed during the planning and design phase and should incorporate the environmental authorisation conditions, mitigation measures from the EMPr and indicate the

boundaries and no-go areas of the development. Training will create environmental awareness and reduce the chances of an employee's actions resulting in a legal non-compliance.

3.3 Soil Quality

Soil quality can be impacted on during both the clearing and operational phase. During the clearing and operational phase soil quality can be impacted on by various activities and the following preliminary mitigation measures should be applied:

- Store equipment, vehicles machinery, oils and/or fuels in designated and demarcated areas.
- Ensure that staff is trained on how to manage and handle hazardous material.
- Do not remove vegetation that fall outside of the proposed development footprint.
- Use drip trays when vehicles and equipment are being refuelled
- Use drip trays beneath vehicles when the vehicle is non-operational for more than 24h.
- Develop an erosion register and address erosion features
- Ensure that fertilizers, herbicides and insecticides are applied according to the MSDS and label requirements
- Implement irrigation methods that do not result in erosion
- Develop and implement and stormwater management plan.

3.4 Air Quality

Air quality can be impacted on during both the clearing and operational phase. During the clearing and operational phase soil quality can be impacted on by on by various activities and the following preliminary mitigation measures should be applied:

- Monitor the amount of dust created from the activities and use dust suppression such as spraying water when necessary.
- Implement a speed limit to reduce the amount of dust created by the vehicles.
- Create an Incident or complaints register where dust complaints can be noted and addressed

3.5 Terrestrial Ecology

Terrestrial Ecology can be impacted on during both the clearing and operational phase. During the clearing and operational phase terrestrial ecology can be impacted on by various activities and the following preliminary mitigation measures should be applied

- The contractor is to ensure that no fauna is to be caught, killed, injured, trapped, interfered with, snaring or hunted on site and the surroundings and signs must be put up to enforce this on site, the contractor shall assume responsibility in this regard for all his employees and subcontractors. Breeding and nesting sites must be declared no-go areas.
- The contractor is to ensure that vegetation removal is minimised.
- Protected sensitive areas must be declared no-go areas and removal of identified vegetation must be done by the relevant specialist.

- Ensure the clear demarcation of the development footprint and that the clearing of vegetation only takes place on the specified areas within the boundaries of the development site.
- On-site fires as well as any form of burning on-site should be prohibited.
- Employees should be educated about veld fires and their potential fuel sources.
- Firefighting equipment must be available in all vehicles located on site.
- Smoking should only be allowed in designated areas.

3.6 Water Quality

Water quality can be impacted on during both the clearing and operational phase. During the clearing and operational phase water quality can be impacted on by various activities and the following preliminary mitigation measures should be applied:

- Potential pollutants of any kind and in any form shall be kept, stored, and used in such a manner that any escape can be contained and that the water table and surface water is not endangered.
- A Storm Water Management Plan must be in place and the manager must ensure that all runoff is strictly controlled. An appropriate number of oil spill kits must always present on site.
- Appropriate and working ablution facilities must be available to prevent sewage from contaminating water resources.

3.7 Waste Management

Waste Management can be impacted on during both the clearing and operational phase. During the clearing and operational phase waste management can be impacted on by various activities and the following preliminary mitigation measures should be applied:

- Soil and organic waste:
- General waste: Refers to solid waste generated by construction personnel. Remove litter, waste and contaminated material and confined it to bins which should be provided. Littering and burning of waste are prohibited. Waste should be removed to a registered landfill site.
- Hazardous waste: Hazardous waste shall be separated from general waste and stored separately in clearly marked containers. It should then be disposed of at a licenced hazardous waste disposal facility or recycled at a certified recycling facility.

3.8 Heritage

Archaeology, Cultural Heritage and Palaeontology (heritage) refers to all aspects that would give indication of possible heritage associated on the project site, which includes graves, artefacts, archaeological, cultural and paleontological findings within the project areas. Heritage can be impacted on during both the clearing and operational phase. During the clearing and operational phase heritage can be impacted on by various activities and the following preliminary mitigation measures should be applied:

- Create and implement a chance to find procedures in case possible heritage finds are uncovered.
- Ensure that all staff are trained on the protocol. Workers must be alerted to the possibility of uncovering fossils, archaeological materials (e.g., stone artefacts, pottery) or graves and instructed to stop work, protect any finds and report them to the heritage authorities.

- The required buffer should be implemented at areas that have already been identified to have heritage importance and it should be ensured that these areas as well as the boundaries of their buffers are identified before clearing and operational activities start.
- If the proposed project will result in the removal of one of the identified sites, the appropriate permit will first have to be obtained.

3.9 Noise

Noise can be impacted on during both the clearing and operational phase. During the clearing and operational phase noise can be impacted on by various activities and the following preliminary mitigation measures should be applied:

- Construction should also take place during regular work hours to minimise the impact of construction noise on the community.

3.10 Visual

Visual aesthetics can be impacted on during both the clearing and operational phase. During the clearing and operational phase visual aesthetics can be impacted on by various activities and the following preliminary mitigation measures should be applied:

- The clearance of vegetation and agricultural activities must be restricted to the demarcated development footprint.
- Any areas outside of the proposed development area that have become should be rehabilitated as soon as possible.
- A row of indigenous trees has been planted at the west boundary of portion 4 and further application of this mitigation measure can be implemented at the rest of the impacted areas if required.

3.11 Climate Change

Climate change can be impacted on during both the clearing and operational phase. During the clearing and operational phase climate change can be impacted on by various activities and the following preliminary mitigation measures should be applied:

- Use machines/equipment that are fuel efficient or manual equipment where necessary
- Ensure that personnel are trainees to use equipment efficiently.

Section G: Plan of Study

1. Introduction

The following section provides context for the Plan of Study for the Environmental Assessment (PSEIA). The PSEIA is based on the findings during the Scoping phase and aims to act as a guide for the processes to be followed during the EIA phase. The PSEIA therefore acts as a term of reference for the following activities that must be undertaken during the EIA phase

- Required specialist studies,
- The method for the assessment of alternatives as well as environmental aspects and impacts
- Public Participation Process

Similar to the draft Scoping Report comments and responses obtained from I&APS during the public review period of the of the draft PSEIA will be incorporated in the final PSEIA.

2. Description of the Alternatives to be Considered

There are no alternatives with regards to this project except the no-go alternative. All alternatives with regards to land use, site, location and layout alternatives have been considered and assessed in the draft Scoping report. No feasible alternatives could be identified. Therefore, the preferred alternative and the no-go alternative is the only alternatives considered. The no-go alternative refers to the option where the proposed development does go ahead and therefore no land with indigenous vegetation is transformed for crop production. However, it is important to note that not going forward with the proposed project also has implications. If the proposed project does not go ahead and the no-go alternative is applied, it will have the following consequences:

- Positive socio-economic impacts relating to the creation of jobs and training opportunities will not be realised
- Food security would not be enhanced
- The opportunity to give left over produce/crops that are not sold to big markets by the farmer to the local community to be sold at affordable prices
- The local economic benefits would not be realised

Therefore, only incremental alternatives or changes will be considered based on additional specialist studies, the outcome of the review of the draft Scoping report by the stakeholders as well as the I&APs and review of the final Scoping report by the competent authority.

3. Aspects

3.1 Description of the Aspects to be Assessed as Part of the Environmental Impact Assessment Phase

- EIA level specialist studies were conducted during this scoping phase. The two studies conducted were the Terrestrial Biodiversity assessment and the Heritage Impact Assessment. Based on the current information available no additional specialist studies will have to be considered during the EIA phase.

- Based on the National Web Based Environmental Screening Tool and the desktop study there are freshwater resources within and around the development footprint and therefore it is recommended that a Freshwater and Wetland Assessment is conducted.
- Incremental changes or alternatives based on the availability of new information, comments received from stakeholders, Interested and Affected Parties (I&APs) as well as direction provided by the competent authority will be evaluated and mad during the EIA phase.

3.2 Aspects to be Assessed by Specialists

EIA level specialist studies regarding the terrestrial biodiversity and heritage of the proposed development area have already conducted. Based on the current available information as well as recommendations by the specialists and the preliminary impact significance of the project it is not anticipated that further specialist studies will be required. However, comments and feedback received from the competent authority, stakeholders, Interested and Affected Parties (I&APs) regarding the requirement of further specialist studies or the adjustment of impact ratings will be considered during the EIA phase.

3.3 Proposed Method of Assessing Environmental Aspects

EIA level specialist studies regarding the terrestrial biodiversity and heritage of the proposed development area have already conducted. Based on the current available information as well as recommendations by the specialists and the preliminary impact significance of the project it is not anticipated that further specialist studies will be required. However, based on the National Web Based Environmental Screening Tool and the desktop study it there are freshwater resources within and around the development footprint and therefore it is recommended that a Freshwater and Wetland Assessment is conducted (Table 30).

Table 30: Proposed specialist study.

Specialist Study	Broad Scope of the Assessment	Proposed Specialist
Freshwater and Wetland Assessment	Assessment of the potential impact of the proposed development has on wetlands and watercourses that occurs within a 500m radius the proposed development. The assessment will also provide appropriate mitigation measures and buffers required to protect the surrounding watercourses and wetlands. These mitigation measures and buffers will reduce the impact of the development, inform the extent of the development footprint and be incorporated in the EIA report	The Biodiversity Company

Comments and feedback received from the competent authority, stakeholders, Interested and Affected Parties (I&APs) regarding the environmental aspects of the proposed project will be considered and adjusted where necessary. Based on the specialist and desktop studies sensitive areas that have been deemed as no-go areas or sensitive areas that require a certain buffer area between the sensitive feature and the proposed development footprint have been mapped and the map will be further refine during the EIA phase.

The findings and recommendation of the proposed Freshwater and Delineation Assessment will be included in the EIA report and the buffers and mitigation measures of the proposed development will be adjusted accordingly.

3.4 Proposed Method of Assessing Significance

The significance of the impacts will be assessed during the EIA phase in the same manner as it has been assessed in Section F of the draft Scoping report. The method assess the significance of the environmental impact based on magnitude (the seriousness of the impact and the ease with which it can be reversed), the extent (scale and size of the impact), the duration (timescale within which the impact will have effect) and probability (the likelihood that the impact will occur)

The possible impacts that have been identified for each of the proposed project phases (planning and development, clearing and operational) will be assessed post and pre implementation of the proposed mitigation measures. However, during the EIA phase the preliminary impacts and mitigation measures may be adjusted after consideration of the relevant comments received competent authority, stakeholders, Interested and Affected Parties (I&APs). During the EIA phase the mitigation measures will also be added to base on further investigation and new information that becomes available.

4. Competent Authority Consultation

The final Scoping report will be sent to the competent authority (CA) for comment after which the CA's comments will be addressed during the EIA phase. The final EIA report will also be sent to the CA for consideration. If the competent authority requires that a meeting is held during any stage of the authorisation process a meeting will be organised.

5. Proposed Method of Public Participation for the EIA Phase

The Public Participation Process will be conducted according to the the Environmental Impact Assessment Regulations (GN No. R. 982 of 2014). The steps to be followed for the PPP during the EIA phase are discussed below.

It is important to note that the initial notification and call to register was done separately for the 3 areas that make up the project area. The project area was initially split in to 3 different project areas as Fresca Farms had already started with the proposed development at 2 of the 3 areas and therefore required a S24G application together with a Scoping and EIA reporting process for both. No activities have yet taken place on the 3rd area and therefore only a Scoping and EIA phase is required as part of the environmental authorisation process. Even though separate initial PPP was conducted for the 3 areas a single Scoping and EIA process will be undertaken that incorporate all three areas into 1 development area. Therefore, integrated PPP during the Scoping and EIA phase.

When the draft EIA report and EMP have been compiled all the stakeholders and registered I&APs will be notified. The notification will also inform them that copies of the draft EIA and EMP can be made available for comment on request. The comments and issues raised will be added and addressed in the Final EIA Report and EMP that will be submitted to the competent authority.

5.1 Steps taken to Notify Interested and Affected Parties

After completion of the draft EIA report and EMP the I&APs will be notified thereof by email and will on request be provided with the draft documents. Stakeholders will have 30 days to review and comment on the draft EIA report and EMP. Comments received during the review period will be considered and addressed in the final EIA report & EMP. Further details

regarding the review of the review of the EIA report and EMP will be communicated to registered I&APs and stakeholders when they area notified of the availability of the draft EIA report and EMP.

5.2 Details of Engagement Process to be Followed

I&APs and Stakeholders will be able to participate during the EIA phase when the EIA Report and EMP is made available for comment. The Stakeholders and I&APs will be notified by email that the draft EIA Report and EMP is available and can be made available to them for comment on request. A copy of the draft EIA Report and EMP will be sent to all the stakeholders and registered I&APs that have requested it. The draft EIA and EMP will be available for comment for 30 days.

All comments and issues presented by the registered I&APs as well as stakeholders will be addressed in the final EIA Report and EMP that will be submitted to the competent authority for consideration.

5.3 Description of the Information to be Provided

The following information will be available to the stakeholders and registered I&APs during the EIA phase as upon completion of the draft EIA report which will be made available on request:

- The site layout plan
- List of activities that are to be authorised as part of the development
- The scale and the extent of the proposed development
- General impacts that will result from the development
- Duration of the activity
- The need for the activity
- Contact details of the Environmental Assessment Practitioner (EAP)

5.4 Incorporation of Comments into the Final EIA

All comments and issues raised by the I&AP and stakeholders will be incorporated and addressed in the final EIA and EMP after the 30 days comment period has passed and before the final EIA and EMP are submitted to the competent authority for a decision.

5.5 Notification of Environmental Authorisation

All stakeholders and registered I&AP will be informed of the decision made by the competent authority. If Environmental Authorisation (EA) is granted the stakeholders and I&APs will be notified thereof and also informed of the appeal period. All stakeholders and I&APs will be informed of the decision and the appeal process by email.

6. Tasks that will be Undertaken as Part of the EIA Process

The tasks that will take place as part of the EIA process is as follows:

1. **Specialist Studies**
    - Determine if further specialist studies should be undertaken after the comments from the Scoping phase provided by the stakeholders, registered I&AP and the competent authority (CA)

- Ensure that a Freshwater and Delineation Assessment is undertaken.

2. Draft Document Compilation:

- The EIA Report and EMP will be drafted according to the requirements of Appendix 3 and 4 of the NEMA EIA Regulations (2014, as amended).
- The EIA Report and EMP will drafted taking the specialist studies into account as well as the comments made by the competent CA regarding the sfinal Scoping report.

3. Public Participation Process

- Notify the stakeholders and registered I&AP that the draft EIA and EMP are available for comment for a period of 30 days.
- Inform the stakeholders, registered I&AP of the project progress

4. Final Document Compilation

- Finalise the final EIA Report and EMP after incorporating all comments and issues raised during the 30 days comment period.

5. Submit the Final EIA report and EMPr

- Submit the Final EIA Report and EMP to the competent authority (CA).
- Await decision from CA

7. Measures to Avoid, Reverse, Mitigate or Manage Impacts

The preliminary mitigation measures together with measures to avoid possible impacts will improved on from the Scoping phase to the EIA phase. The mitigation measures will be more in depth for each of the preliminary impacts. Additional no-go areas and buffers will be identified to prevent certain impacts from occurring should more information become available regarding sensitive areas. The mitigation measures and way within which impacts are managed will also be based on the comments received from stakeholders and I&AP during the PPP as well as the competent authority.

8. Assumptions, Limitations and Uncertainties

The Plan of Study for the Environmental Impact Assessment is based on the draft Scoping Report and the information that is currently available. The Scoping report is based on technical information regarding the proposed project and a description of the process flow that were provided by the client while the information regarding the baseline environment was obtained from site visits, specialist studies and desktop investigations. Therefore it obtains certain assumptions, limitations and uncertainties.

9. Undertakings

9.1 Undertaking Regarding the Correctness of Information

I **Richelle Brink** herewith undertake that the information provided in the foregoing report is correct, and that the comments and inputs from stakeholders and Interested and Affected Parties has been correctly recorded in the report.

Signature of the EAP

Date: 16/05/2022

9.2 Undertaking Regard Level of Agreement

I **Richelle Brink** herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with Interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

Signature of the EAP

Date:16/05/2022