DRAFT BASIC ASSESSMENT REPORT

for

HOOGEKRAAL DAM

Portion 1 of Farm 182 Hoogekraal

In terms of the

National Environmental Management Act (Act No. 107 of 1998, as amended) & 2014 Environmental Impact Regulations

Prepared for Applicant: **Swartvlei Equestrian Estate (Pty) Ltd**.

Date: **17 January 2022**

Author of Report: Melissa Mackay

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Report Reference: KNY652/06

Department Reference **2021-06-0004**

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DOCUMENT TRACKING

DOCUMENT HISTORY

REVISION	DATE	AUTHOR
Draft Basic Assessment Report	20 January 2022	Melissa Mackay
Final Basic Assessment Report		Melissa Mackay
Draft Environmental Management Programme	20 January 2022	Melissa Mackay
Final Environmental Management Programme		Melissa Mackay

APPROVAL FOR RELEASE

NAME	TITLE	SIGNATURE
Melissa Mackay	Senior Environmental Practitioner	

DISTRIBUTION

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Swartvlei Equestrian Estate (Pty) Ltd
Registered and Potential I&AP's

SUBMISSION AND CORRESPONDENCE

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Application form Submitted	17 January 2022
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Comment on Draft Basic Assessment Report	
Final Basic Assessment Report Submitted	

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Report written & compiled by: **Ms Melissa Mackay** (BTech & ND Nature Conservation), who has 16 years' experience as an environmental practitioner. Registered Environmental Assessment Practitioner with the Environmental Assessment Practitioners of South Africa, EAPSA, Registration Number **2019/1446.**

Registration: Director **Louise-Mari van Zyl** (MA Geography & Environmental Science [US]; Registered Environmental Assessment Practitioner with the Environmental Assessment Practitioners of South Africa, EAPSA, Registration Number **2019/1444**. Ms van Zyl has over twenty years' experience as an environmental practitioner.

PURPOSE OF THIS REPORT:

Application for Environmental Authorisation

APPLICANT:

Swartvlei Equestrian Estate (Pty) Ltd

CAPE EAPRAC REFERENCE NO:

KNY652/06

SUBMISSION DATE

17 January 2022

DRAFT BASIC ASSESSMENT REPORT

in terms of the

National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended) & Environmental Impact Regulations2014 (as amended)

Hoogekraal Dam

Portion 1 of Farm 182 Hoogekraal

Submitted for:

Stakeholder Review

Report Issued by:

Cape Environmental Assessment Practitioners

Tel: 044 874 0365 PO Box 2070

Fax: 044 874 0432 17 Progress Street, George 6530

Web: www.cape-eaprac.co.za

REPORT DETAILS

Title:	Draft Basic Assessment Report for Hoogekraal Dam
Purpose of this report:	The Draft Basic Assessment Report is being made available to all registered and potential Interested and Affected Parties (I&APs) for review and comment and all comments received will be incorporated into the Final Basic Assessment Report to be submitted to the competent authority for decision making. This Draft BAR forms part of a series of reports and information sources that are being provided during the Basic Assessment Process for the proposed construction of an ±3ha off-stream dam on Portion 1 of Farm 182 Hoogekraal, Sedgefield. Registered I&Ps will be given an opportunity to comment on the following reports as part of this environmental process: - Draft Basic Assessment Report, - All Specialist Studies, and - Draft Environmental Management Programme. In accordance with the regulations, the objectives of an environmental process are to, through a consultative process: (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 impact and risk assessment and ranking process; (d) identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive 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. The Draft Basic Assessment Report will be made available to all registered and potential interested and affected parties for a 30 day review and comment period extending from **20 January to 18 February 2022**. All comments received during this comment period will be incorporated into the Final BAR being submitted to the DFFE for Decision making.
Prepared for:	Swartvlei Equestrian Estate (Pty) Ltd
Published by:	Cape Environmental Assessment Practitioners (Pty) Ltd. (Cape EAPrac)
Authors:	Ms Melissa Mackay
Reviewed by:	
Cape EAPrac Ref:	KNY652/06
DFFE Ref. No:	2021-06-0004
Date:	
To be cited as:	*Cape EAPrac,* 2021.Draft Basic Assessment Report for Hoogekraal Dam. Report Reference: KNY652/06. George, South Africa.

TECHNICAL CHECKLIST

The following technical checklist is included as a quick reference roadmap for the proposed project.

Applicant Details	Applicant Name:	Swartvlei Equestrian Estate (Pty) Ltd
	Company Registration Number:	2012/033068/07

	BBBEE Status:	n/a
	Project Name:	Hoogekraal Dam
Size of the study area	Size in ha of initial study area.	±3ha
Development Footprint	This includes the total footprint of proposed lands, residnetial buildings and outbuildings	±3ha
Property	Property name and number	Portion 1 of Farm 182 Hoogekraal
	SG Code	C02700000000018200001
	Property size	±1010.31 ha
	Diagram Deed No.	T49253/2012
Administrative Area	Province/s	Western Cape
	District Municipality/ies	Garden Route District Municipality
	Local Municipality/ies	Knysna Local Municipality
	Ward number/s	Ward 2
	Nearest town	Knysna
Timing of EA Required	Construction	Commencement of clearance activities within **5 years** of date of EA.
	Operation	The activities applied for are related to construction of the dam and as such there is no operational period.

LOCATION OF PREFFERED ALTERNATIVE

The co-ordinates of the preferred alternative are reflected in the table below.

Alternative 1 (Preferred)	Latitude	Longitude
North-West Corner	33°58'35.24"S	22°43'25.05"E
North-East Corner	33°58'35.83"S	22°43'33.73"E
South-West Corner	33°58'40.01"S	22°43'33.49"E
South-East Corner	33°58'35.24"S	22°43'25.05"E

CONTENTS OF A BASIC ASSESSMENT REPORT

Appendix 1 of Regulation 326 of the 2014 EIA Regulations (as amended) contains the required contents of a Basic Assessment Report. The checklist below serves as a summary of how these requirements were incorporated into this Basic Assessment Report.

Requirement	Details
(1) A basic assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include -	

Requirement	Details
(a) Details of - The EAP who prepared the report; and The expertise of the EAP, including, a curriculum vitae.	The report was compiled by Melissa Mackay of Cape EAPrac. The author has fifteen years' experience as an EAP and holds a Btech & ND Nature Conservation qualification. The CV of the EAP and Company Profile is included as Annexure G3 of this report.
(b) The location of the activity, including – The 21 digit Surveyor General code of each cadastral land parcel; Where available, the physical address and farm name; Where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties.	C02700000000018200001 Portion 1 of Farm 182 Hoogekraal is located on the norhern banks of Swartvlei near the town of Sedgefield in the Western Cape Province.
(c) a plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is A linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or On land where the property has not been defined, the coordinates within which the activity is to be undertaken.	Refer to Appendix A and B of this report.
(d) a description of the scope of the proposed activity, including - All listed and specified activities triggered and being applied for; and A description of the activities to be undertaken including associated structures and infrastructure.	The relevant listed activities are captured in Section 3.1.2 The description of the activity is provided in Section 2 of this report with graphic representation provided in Appendix B and D.
(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 have been considered in the preparation of the report; and .How the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks and instruments.	Please refer to Section 3 of this document.
(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.	Please refer to Section 2.2 of this document.
(g) A motivation for the preferred site, activity and technology alternative.	The preferred alternative has been identified as the best practicable option and is discussed in detail in section 2.5 of this report.
(h) A full description of the process followed to reach the proposed preferred alternative within the site, including - • Details of all alternatives considered; • Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; • 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; • The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; • The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts - (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated.	Section 2.7 addresses feasible and reasonable alternatives which were identified for facility. Site, layout and technological alternatives were considered. Details of Public Participation are included in section 9 of the report. A summary of all issues raised by I&APs as well as the responses thereto are included in Appendix F. The environmental attributres of the study site are included in section 5 of the report. The identification and assessment of Impacts are included in section 6 of the report. The summary of proposed mitigation measures are included in section 7 of the report. The outcome of the site selection matrix is included in section 2.6 of the report.

Requirement	Details
• The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives; • 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; • The possible mitigation measures that could be applied and level of residual risk; • The outcome of the site selection matrix; • If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and • A concluding statement indicating the preferred alternatives, including preferred location of the activity.	The concluding statement is contained in section 6 of the report.
(i) A full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including - A description of all environmental issues and risks that were identified during the basic assessment process; and An assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.	Please see Summary and Section 6 of the report and Appendix E for the specialist reports.
(j) An assessment of each identified potentially significant impact and risk, including - Cumulative impacts; The nature, significance and consequences of the impact and risk; The extent and duration of the impact and risk; The probability of the impact and risk occurring; The degree to which the impact and risk can be reversed; The degree to which the impact and risk may cause irreplaceable loss of resources; and The degree to which the impact and risk can be mitigated.	Please see Section 6 of the report and Appendix E for the specialist reports.
(k) Where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report.	Please see Section 6 of the report and Appendix E for the specialist reports.
(l) An environmental impact statement which contains – • A summary of the key findings of the environmental impact assessment; • A map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and • A summary of the positive and negative impacts and risks of the proposed activity and identified alternatives.	Section 6 of this report. See Appendix D Section 6 of this report.
(m) Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr.	See section 7 report.
(n) Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation.	See section 7 of this report.

Requirement	Details
(o) A description of assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed.	See 1 of this report.
(p) A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation.	See section 10 of this report.
(q) Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded and the post construction monitoring requirements finalised.	See section 8 of this report.
(r) An undertaking under oath or affirmation by the EAP in relation to: The correctness of the information provided in the reports; The inclusion of comments and inputs rom stakeholders and I&APs; The inclusion of inputs and recommendations from the specialist reports where relevant; and Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties.	The declaration of the EAP is attached in Appendix G.
(s) Where applicable, details of any financial provisions for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts.	This environmental assessment does not include application for decomissioning and closure of activities
(t) Any specific information that may be required by the competent authority.	Currently not applicable but will be included if such a request is made.
(u) Any other matters required in terms of section 24(4)(a) and (b) of the Act.	This section will be updated on reciept of the mandatory comment from the competant authority.

DFFE COMMENT ON DRAFT BASIC ASSESSMENT REPORT

To be completed on receipt of comments.

ORDER OF REPORT

Report Summary

Draft Basic Assessment Report

Appendix A	:	Location, Topographical Plans
Appendix B	:	Biodiversity Overlays
Appendix C	:	Site Photographs
Appendix D	:	Layout Plans
Annexure D1	:	Dam Layout Plan
Annexure D2	:	Property Planting Plan & Land Cover
Appendix E	:	Specialist and Technical Reports
Annexure E1	:	Aquatic Compliance Statement
Annexure E2	:	Heritage Notice of Intent to Develop (NID)
Annexure E3	:	Terrestrial Biodiversity Compliance Statement
Annexure E4	:	Geotechnical Report
Annexure E5	:	Dam Report & Method Statement
Annexure E6	:	WULA Documentation
Annexure E7	:	Site Development Plan
Appendix F	:	Public Participation Process
Annexure F1	:	I&AP Register
Annexure F2	:	Adverts & Site Notices
Annexure F3	:	Draft BAR Notifications
Annexure F4	:	Draft BAR Comments and Responses (Pending)
Annexure F5	:	Comments and Response Report (Pending)
Annexure F6	:	Public Participation Plan
Appendix G	:	Other Information
Annexure G1	:	Correspondence with Authorities
Annexure G2	:	Department of Agriculture Correspondence
Annexure G3	:	Heritage Western Cape Correspondence
Annexure G4	:	Knysna Municipality Correspondence
Annexure G5	:	EAP Company Profile
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EXECUTIVE SUMMARY

INTRODUCTION

Cape EAPrac has been appointed by Swartvlei Equestrian Estate (Pty) Ltd, hereafter referred to as the Applicant, as the independent Environmental Assessment Practitioner (EAP), to facilitate the Basic Assessment process[1] required in terms of the National Environmental Management Act (NEMA, Act 107 of 1998) for the proposed construction of an off-stream dam of approximately 3ha on Portion 1 of Farm 182 Hoogekraal near Sedgefield in the Western Cape Province. The national Department of Forestry, Fisheries & the Environment (DFFE) has been identified as the competent authority for this application.

The applicant is proposing the following:

- Off-stream dam of ±3ha on old crop fields to replace 4 existing off-stream dams;
- Storage capacity of the new dam is expected to be ±106 000m³;
- The dam wall will not exceed 5m in height.

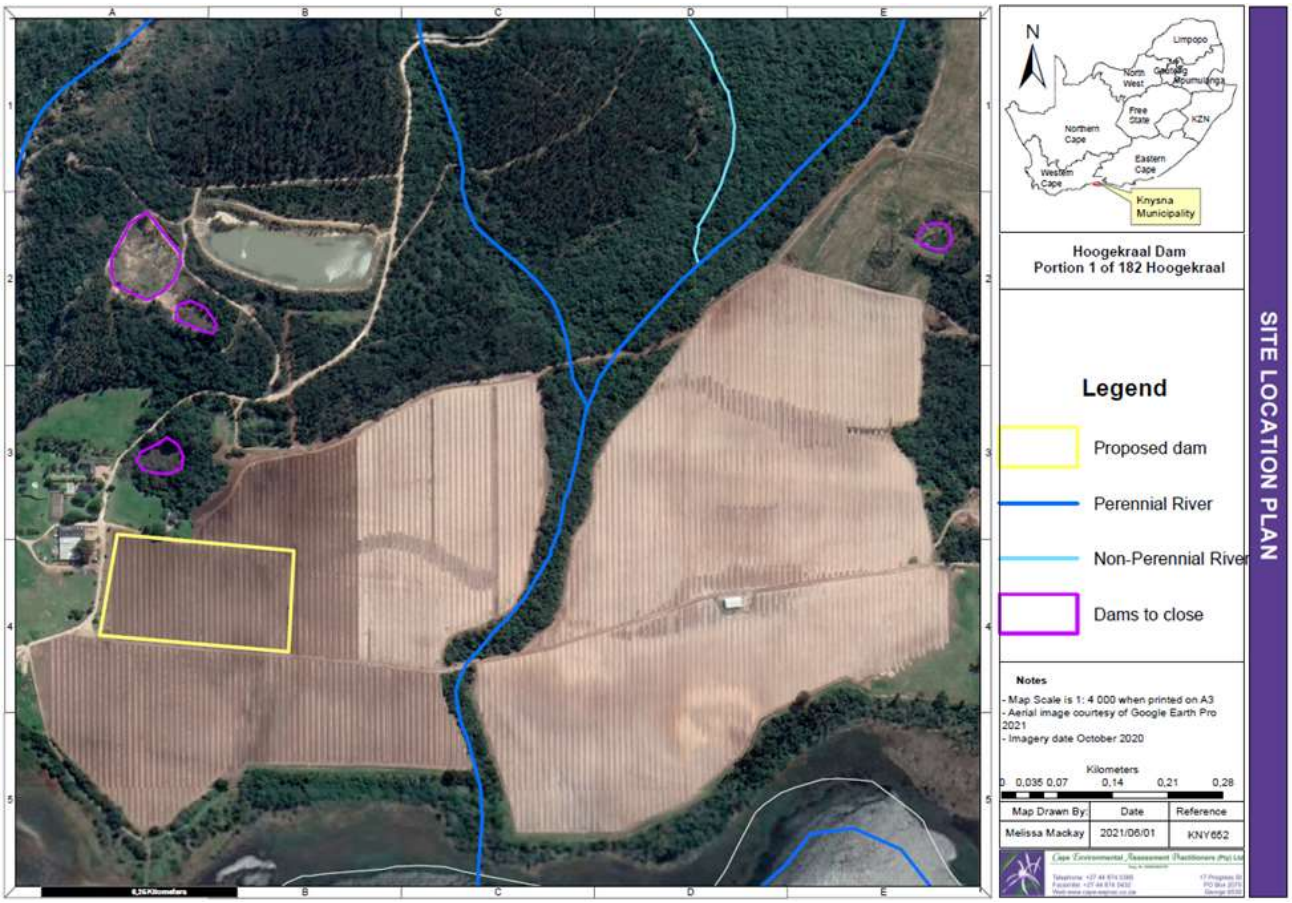


Figure 1: Site Development Plan

The property is actively utilised for agricultural purposes and has several pine plantations used as woodlots. The zoning of the property is Agriculture Zone I.

Two of the existing dams have failed due to poor construction materials used in the walls, one has been inundated with alien vegetation which has weakened the walls and the fourth is very small and requires electricity to use any of the water. The new dam will replace all four of these. Its location is in an area that has a clay soil content which will provide better material for the walls, it is located downhill of the main holding dam so can be gravity fed thus saving on electrical costs and equipment.

[1] The environmental process follows a basic assessment process, as it is located within the Knysna Lakes Area.

Figure 2: Location of proposed new dam

The purpose of this **Draft Basic Assessment Report** (BAR) is to describe the environment to be affected, the proposed project, to present the site constraints identified by the various specialist during their site assessments, and identify & assess the impacts of this development on the receiving environment. This information is herewith presented to all registered and potential Interested and Affected Parties (I&AP's), including the competent authority for review and comment.

The Draft BAR is being made available for a 30 Day period extending from **Thursday 20 January to Friday 18 February 2022.**

All comments received on the Draft BAR will be incorporated into the Final BAR to be submitted to the DFFE for consideration and decision making. After the department has taken a decision on the application, this decision will be communicated to all I&AP's along with details of the appeal process.

RECOMMENDATION OF THIS EIA

None of the participating specialists identified any impacts that remain high after mitigation. Because of the risk adverse approach followed for the development of the preferred layout, all the main sensitive features, most notably significant steep slopes were avoided. The affected area is considered suitable for development and there are no impacts associated with the activity that rate higher than Very Low. Mitigation measures proposed are Best Practise which will aid in the overall management of the property achieving some conservation outcomes. There are no fatal flaws or high post-mitigation impacts that should prevent the development from proceeding.

The property is an active agricultural unit and is zoned as Agriculture Zone I in the Knysna Zoning Scheme Regulations (1992). As such there are no fatal flaws or high post-mitigation impacts that should prevent the development from proceeding.

It is thus Cape EAPrac' s considered opinion that the preferred alternative (Alternative 1) as mitigated, can be considered for approval.

NEED AND DESIRABILITY

Portion 1 of Farm 182 Hoogekraal is 'Agricultural Zone I" and the activity is permissible within the current zoning and is considered part of the primary rights of the property. No change in zoning is proposed, thus no change to the character of the area and the proposal merely exercises the primary rights of the property.

The proposed development is consistent with all the various spatial policies and does not have any significant environmental impacts associated with it.

ENVIRONMENTAL LEGISLATIVE REQUIREMENTS

The current assessment is being undertaken in terms of the **National Environmental Management Act** (NEMA, Act 107 of 1998). This Act makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority (in this case, the National Department of Forestry, Fisheries and the Environment, (DFFE) based on the findings of an Environmental Assessment.

The proposed development entails listed activities, which require a Basic Assessment Process, which must be conducted by an independent EAP. Cape EAPrac has been appointed to undertake this process.

Table 1: NEMA 2014 (As amended in April 2017) listed activities applicable

Activity No(s):	Basic Assessment Activity(ies) as set out in Listing Notice 1	Description
13	The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.	Construction of an off-stream storage dam with a volume of ± 106 000m³ with a wall height of less than 5m and covering an area of ±3ha.

Before any of the above-mentioned listed activities can be undertaken, authorisation must be obtained from the relevant authority, in this case the DFFE. Should the Department approve the proposed activity, the Environmental Authorisation does not exclude the need for obtaining relevant approvals from other Authorities who has a legal mandate in respect of the activity.

PROFFESIONAL INPUT

The following professionals[2] have provided input into this environmental process:

1. Terrestrial Ecology - Chepri
2. Heritage - Perception Planning
3. Dam Engineering Allan Atkinson
4. Aquatic Confluent Environmental

ASSESSMENT OF IMPACTS

The impacts associated with the development are related only to the construction of the off-stream dam as per the listed activity. The assessment of the impacts by the specialists relates to this activity only. The assessments were done in terms of the relevant protocols and guidelines as included in the specialist reports.

IMPACT SUMMARY

The table below summarises the significance (with mitigation) of all impacts assessed in the sections above.

[2] Note that not all of these professionals are considered specialists as contemplated in chapter 3 of Regulation 326. Studies such as Engineering and planning constitute "technical" studies, rather than specialist studies and as such, the requirements in Appendix 6 of R326 do not apply to all these professionals

Table 2: Summary of the significance of impacts

Impact	Significance (with mitigation)
Aquatic Impacts	
Loss and/or fragmentation of indigenous natural vegetation due to clearing	Very Low
Terrestrial Biodiversity Impacts	
Loss and/or fragmentation of indigenous natural vegetation due to clearing	None
Heritage Impacts	
Loss of heritage resources	None

The proposed development is allowable in terms of the zoning and land use associated with the property in question. The dam is being proposed on previously ploughed and disturbed lands and the impacts have been rated as None to Very Low by the various specialists.

CONCLUSIONS & RECOMMENDATIONS

This environmental process presents the development proposal to the public and potential I&APs and identifies and assesses environmental impacts, issues and concerns raised as a result of the proposed development alternatives. The preferred Alternative 1 will result in no to very low environmental impacts and supports agricultural outcomes in the area. Additional management outcomes have been recommended to include conservation outcomes in the overall management of the property.

Cape EAPrac is of the opinion that the information contained in this Basic Assessment Report and the documentation attached hereto is sufficient to allow the I&APs and the competent authority to apply their minds to the potential negative and/or positive impacts associated with the development, in respect of the activities applied for. This environmental process has not identified any fatal flaws with the proposal and as such it is our reasoned view that the project can be considered for Environmental Authorisation. All specialists concur that the development as proposed (Alternative 1 (preferred)) can be considered for approval and that there are no reasons why the development should not be implemented

All stakeholders are requested to review the Draft BAR and the associated appendices, and provide comment, or raise issues of concern, directly to *Cape EAPrac* within the specified 30-day comment period. All comments received during this comment period will be included in the Final BAR submitted to DFFE for decision making.

It is the EAP's considered recommendation that the development proposal, Alternative 1 (preferred) be considered for approval by the competent Authority on condition that all other legislative approvals be obtained, and that the final EMPr be adhered to.

FINAL BASIC ASSESSMENT REPORT

1 INTRODUCTION

Cape EAPrac has been appointed by Swartvlei Equestrian Estate (Pty) Ltd, hereafter referred to as the Applicant, as the independent Environmental Assessment Practitioner (EAP), to facilitate the Basic Assessment process required in terms of the National Environmental Management Act (NEMA, Act 107 of 1998) for the proposed construction of an off-stream dam of approximately 3ha on Portion 1 of Farm 182 Hoogekraal near Sedgefield in the Western Cape Province. The national Department of Forestry, Fisheries & the Environment (DFFE) has been identified as the competent authority for this application.

The purpose of this **Final Basic Assessment Report** (BAR) is to describe the environment to be affected, as a result of the proposed project, to present the site constraints identified by the various specialist during their site assessments, and identify and assess the impacts of the development on the receiving environment. This information will be provided to all potential and registered interested and affected parties (I&AP's) for review and comment.

The Draft BAR is being made available for a 30 Day period extending from **Thursday 20 January to Friday 18 February 2022.**

All comments received on the Draft BAR will be incorporated into the Final BAR that will be submitted to the DFFE for consideration and decision making.

1.1 ASSUMPTIONS & LIMITATIONS

This section provides a brief overview of *specific assumptions and limitations* having an impact on this environmental application process:

- It is assumed that the information on which this report is based (specialist studies and project information, as well as existing information) is **correct, factual and truthful.**
- The proposed development is **in line** with the statutory planning vision for the area (namely the local Spatial Development Plan), and thus it is assumed that issues such as the cumulative impact of development in terms of character of the area and its resources, have been taken into account during the strategic planning for the area.
- It is assumed that all the relevant **mitigation and management measures** and agreements specified in this report will be implemented in order to ensure minimal negative impacts and maximum environmental benefits.
- It is assumed that Stakeholders and Interested and Affected Parties notified of the availability of this will submit all relevant **comments within the designated 30-days** review and comment period, so that these can included in the Final BAR to be timeously submitted to the competent authority, the Department of Forestry, Fisheries and the Environment, for consideration.

2. PROPOSED ACTIVITY

The applicant is proposing the following:

- Off-stream dam of ±3ha on old crop fields to replace 4 existing off-stream dams;
- Storage capacity of the new dam is expected to be ±106 000m³;
- The dam wall will not exceed 5m in height.

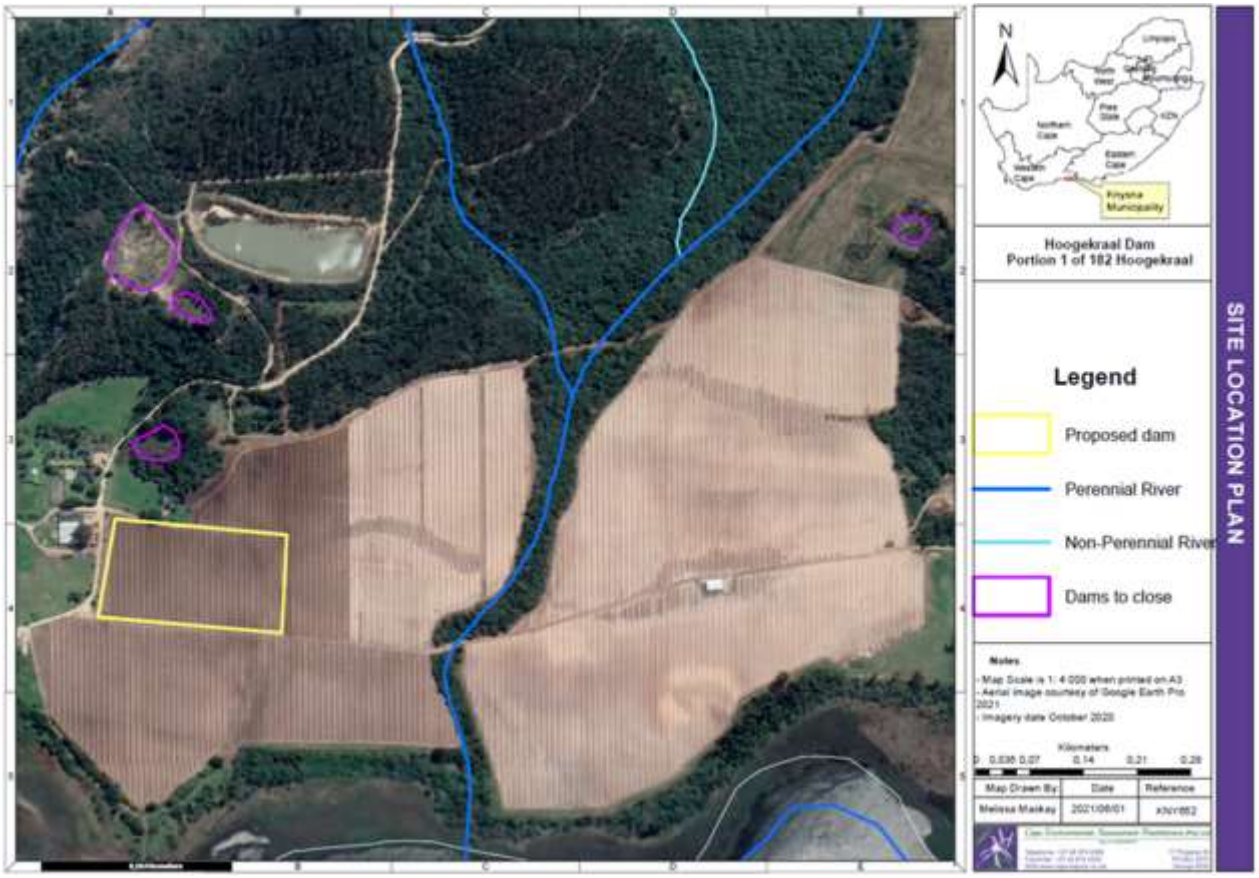


Figure 3: Site Development Plan

The property is actively utilised for agricultural purposes and has several pine plantations that are used as woodlots. Many of these are being changed to avocado and macadamia orchards. The zoning of the property is Agriculture Zone I.

Two of the existing dams have failed due to poor construction materials used in the walls, one has been inundated with alien vegetation which has weakened the walls and the fourth is very small and requires electricity to use any of the water. The new dam will replace all four of these. Its location is in an area that has a clay soil content which will provide better material for the walls, it is located downhill of the main holding dam so can be gravity fed thus saving on electrical costs and equipment.

The property is s zoned “Agricultural Zone I” in terms of the Knysna Zoning Scheme Regulations (1992). The proposed development is thus in line with the zoning scheme regulations.

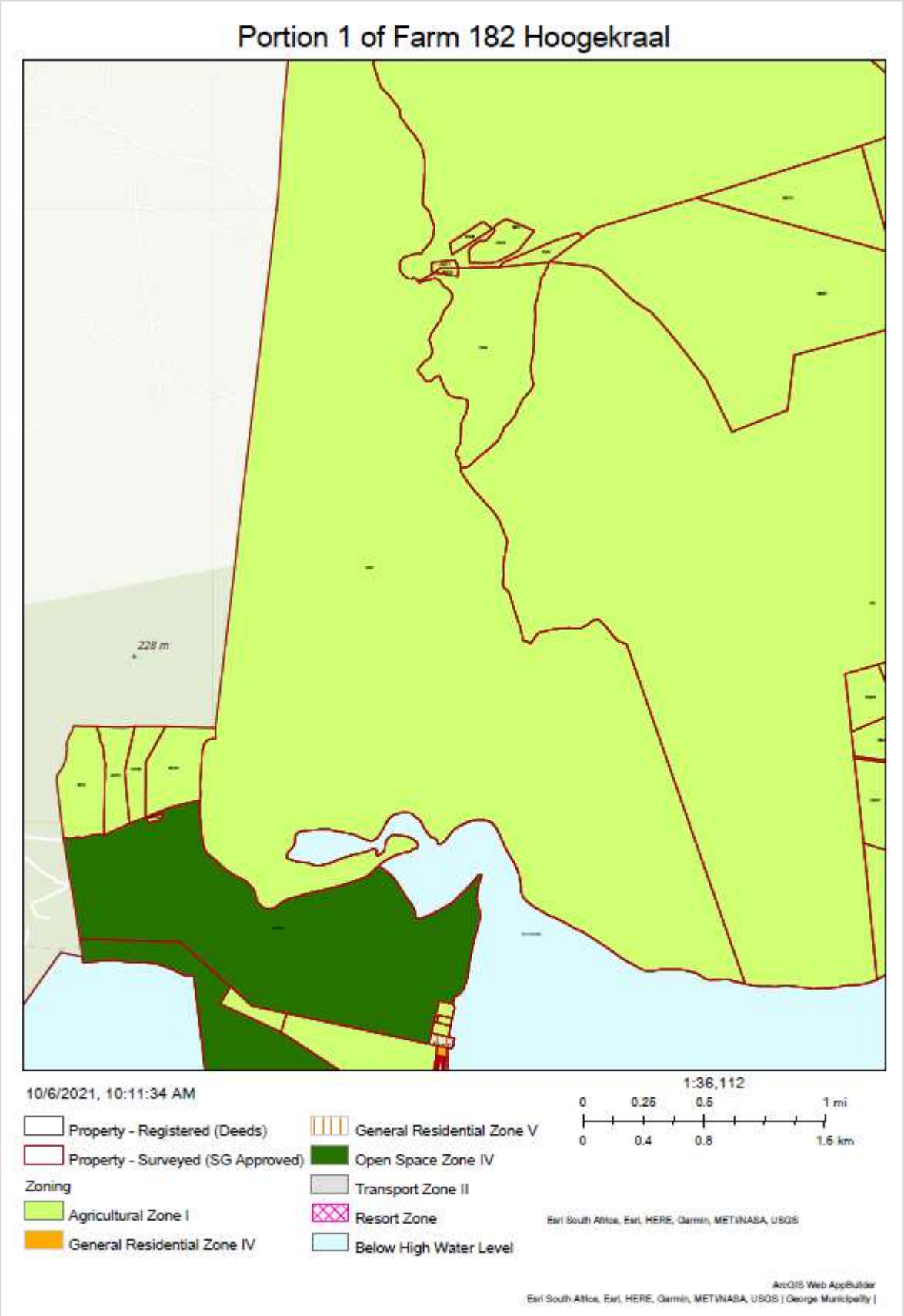


Figure 4: Property Zoning (Knysna Municipality GIS Viewer, 2021)

Figure 5: Alternative 1: Preferred Dam Site

2.1 SERVICES

No services (water, electricity or sewage) are required from the Knysna Municipality. The farm gets electricity from Eskom and does not require any additional allocation for this dam.

2.1.1 Water

Several off-stream dams and instream dams are present on the property. These were all present before the qualifying period in 1998 as defined by the National Water Act (Act No. 36 of 1998). The main instream dam of significance is on the Diep River which will provide the majority of water for the proposed off-stream dam required for Macadamia and Avocado irrigation. This water is pumped from the Diep River to the main holding dam, located north of the proposed new off-stream dam, as per the existing water allocation for the property (see figure below). This storage dam has a capacity of ±63 200m³ and coves an area of ±1.45ha.

The new off-stream storage dam does not require any increase in abstraction from the Diep River. A Water Use License Application (WULA) has been submitted to the Breede Gouritz Catchment Management Agency (BGCMA) to reflect the relevant changes to the existing water license.

Irrigation of the Macadamia and Avocado orchards will be by means of drip irrigation.

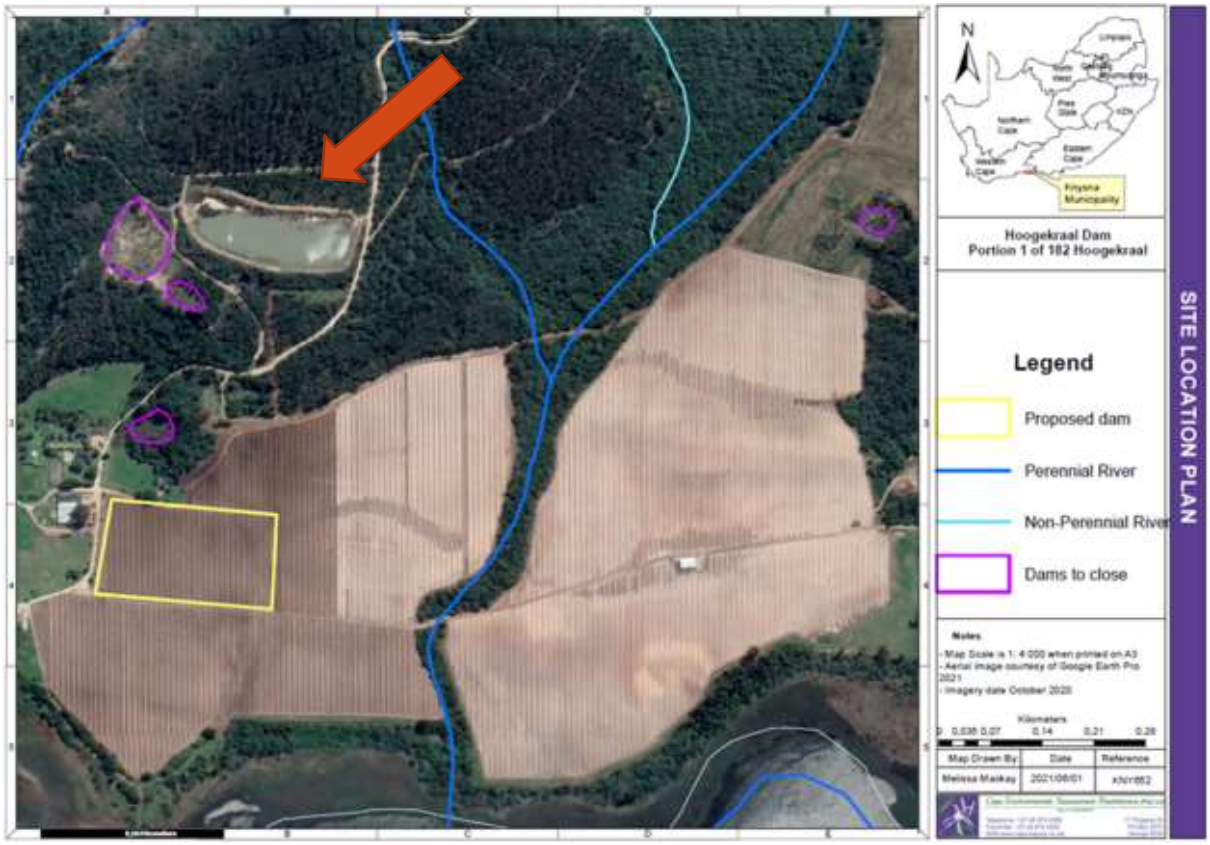


Figure 6: Existing holding dam for water from the Diep River

Photo 1: Main storage dam

2.1.2 Access routes

Access to the dam will be via the current access which is provincial road DR01625. No upgrade or change to this road is required as part of this application.

Figure 7: Access to the development (Google Earth Pro, 2021)

2.2 PROJECT NEED AND DESIRABILITY

In keeping with the requirements of an integrated Environmental Impact process, the DEA&DP *Guidelines on Need and Desirability (2010 & 2011)* were referenced to provide the following estimation of the activity in relation to the broader societal needs. The concept of need and desirability can be explained in terms of its two components, where *need* refers to *time* and *desirability* refers to *place*. Questions pertaining to these components are answered in the Sections below.

2.2.1 Feasibility consideration

The property is zoned as “Agricultural Zone I” in terms of the Knysna Scheme Regulations of 1992. As such the proposal will remain in keeping with the primary rights associated with the property.

It is the understanding that Knysna Municipality is in the process of adopting a new integrated zoning by-law, therefore it is also important to compare the proposal with the parameters of the Knysna Municipality Draft Zoning Scheme By-Law (March 2020), and the compliance thereof.

The Knysna Municipality Draft Zoning Scheme By-Law (March 2020) has a clearer definition for ‘agriculture’ and the permissible uses in the zone:

KNYSNA MUNICIPALITY DRAFT ZONING SCHEME BY-LAW (MARCH 2020)
AGRICULTURAL ZONE I **'Agriculture'**
Land use description: "*agriculture*" means the cultivation of land for raising crops and other plants, including plantations, the keeping and breeding of animals, birds or bees, stud farming, game farming, intensive horticulture; intensive animal farming; a riding school or natural veld, and— a) includes— i. the harvesting, cooling, storing, sorting, packing and packaging of agricultural produce grown on that land unit and surrounding or nearby farms; ii. harvesting of natural resources limited to living organisms for delivery to the market; iii. **agricultural buildings or infrastructure** that are reasonably connected with the main farming activities, including **a dwelling house, barns, agricultural worker accommodation**; iv. rooftop base telecommunication stations; v. linear infrastructure; vi. agricultural industry; b) and does not include aquaculture, an abattoir, a farm graveyard a farm shop, an animal care centre, any mining activity, utility services and renewable energy structures for commercial purposes.

It is clear from the above definition that the proposed use is within the primary rights of the applicable zoning as per the Knysna Municipality Draft Zoning Scheme By-Law (March 2020) and the current Knysna Zoning Scheme Regulations; and is therefore permissible on the subject property.

2.2.2 Need (time)

Is the land use considered within the timeframe intended by the existing approved Spatial Development Framework (SDF)? (I.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP?

Yes, the SDF dated 2020 supports agricultural activities, including small scale agriculture for food security and productive landscapes. The SDF is quite clear that the rezoning and or subdivision of agricultural land is not desirable and as such this application is in line with this reasoning.

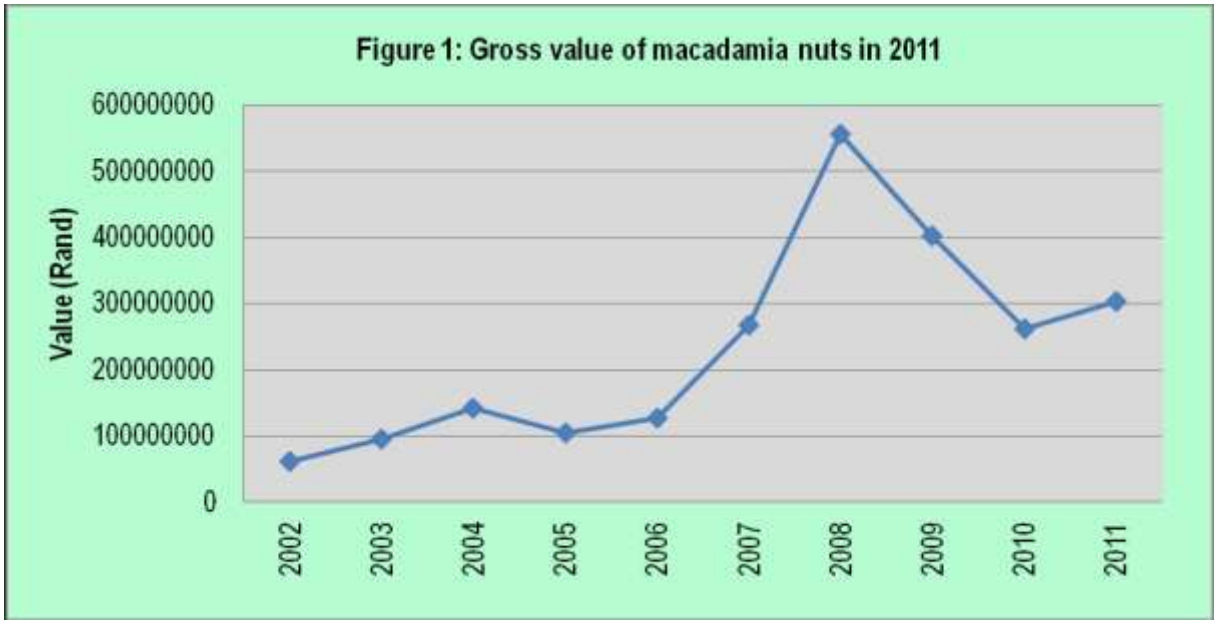
Should the development occur here at this point in time?

Yes, the property is an active agricultural unit and has been for many years. The removal of the four smaller dams to replace them with one does not require any changes to the current water use allocations and uses, and will ensure a more effective method of crop production.

Does the community / area need the activity and the associated land use concerned?

The primary rights of the owner support agricultural activities, which will also lead to additional employment opportunities. The off-stream dam will be utilised to provide drip irrigation for macadamia and avocado orchards which are replacing existing lands and pine plantations. Macadamias and avocados are considered high value crops and create permanent and seasonal employment along their value chain.

According to the national Department of Agriculture (2012), Macadamia nuts are quickly becoming an important crop in South Africa and are possibly the fastest growing tree crop industry in the country. South Africa is the third largest macadamia nut producer in the world, after Australia (where they originated) and Hawaii.



(DAFF, 2012)

Although most of the workforce in the industry is employed seasonally for harvesting and processing from February to August, it is estimated that at least 3 000 new job opportunities have been created on macadamia farms over the last decade and another 1 000 jobs in cracking facilities. In peak season, the industry presently provides employment for more than 4 500 farm workers and about 1 500 factory workers. Since production is expected to double within the next 5 to 7 years, employment creation will continue to grow at a similar pace.

Similarly, avocados are providing high value yields using less water than traditional crops. There are currently about 16500 hectares of avocado plantations, and that area is growing by about 1000 hectares a year. Traditionally, avocados were grown in humid sub-tropical climates in Limpopo, Mpumalanga and KwaZulu-Natal, but now they are being planted in the drier Eastern Cape and Western Cape provinces.

South Africa generates around R1.85billion a year from avocados, producing around 125000 tons and exporting more than half to Europe. This has significant and direct impacts on employment benefits to the surrounding communities.

Are the necessary services with adequate capacity currently available?

No additional services are required.

Is this development provided for in the infrastructure planning of the municipality?

Not applicable.

Is this project part of a national programme to address an issue of national concern or importance?

Not specifically, but indirectly it forms part of the sustainability of agriculture in the area and the creation of employment opportunities.

2.2.3 Desirability (place)

Is the development the best practicable environmental option for this land / site?

Yes. One of the reason that two of the existing dams failed to the extent that they did is the makeup of the materials used for the dam wall. The new dam site is one of the only areas that has enough clay available which will be used to create a more stable and impermeable dam. In addition, the site avoids steep slopes, watercourses and other sensitive environments.

Would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?

No. The approval of the application will support the land use expectations of the property.

Would the approval of this application compromise the integrity of the existing approved environmental management priorities for the area?

Unlikely. According to the ecosystem type identified for the majority of the dam site (Garden Route Shale Fynbos with a small corner located in an area identified as Knysna Sand Fynbos), the site selected for the dam has been significantly transformed over decades for agricultural use. The terrestrial biodiversity specialist summarised as follows: *The site in and around the proposed dam construction area is completely transformed and if the dam is constructed according to criteria that will ensure that it does not negatively impact downstream ecological processes then the dam will not put any further pressure on ecosystem than already exist. The location of the proposed site and its surrounding landuse lends itself to this type of development.*

Do location factors favour this land use at this place?

Yes. The property is zoned as "Agricultural Zone I" and the location of the development area within the site has been chosen to limit potential environmental impacts by avoiding sensitive areas and steep slopes.

How will the activity or the land use associated with the activity applied for, impact on sensitive natural and cultural areas?

The location of the dam site has been chosen to limit potential environmental impacts by avoiding sensitive areas and steep slopes. The significance rating for the impacts has been rated as none to Very Low.

How will the development impact on people's health and wellbeing?

The site will not negatively impact on people's health and wellbeing. It is private property and the activities are part of ongoing agricultural activities on the property.

Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?

Unlikely. The property is an active agricultural entity and the dam supports ongoing agriculture that is adapting to changing needs and requirements.

Will the proposed land use result in unacceptable cumulative impacts?

Unlikely.

2.3 SITE SELECTION PROCESS

The site selection process followed a two stage approach; firstly, to identify desktop environmental constraints, and secondly, to determine the suitability of this site from the available soil, proximity to the main holding dam and the orchards. The resultant location provides optimal technical aspects and minimal impact on sensitive environments.

The preferred site avoids all sensitive biodiversity areas and is located on old crop lands. The presence of sufficient clay ensures it is the best practical place for the dam.

Figure 8: Site in location to the 5m Contours (CapeFarmMapper, 2021)

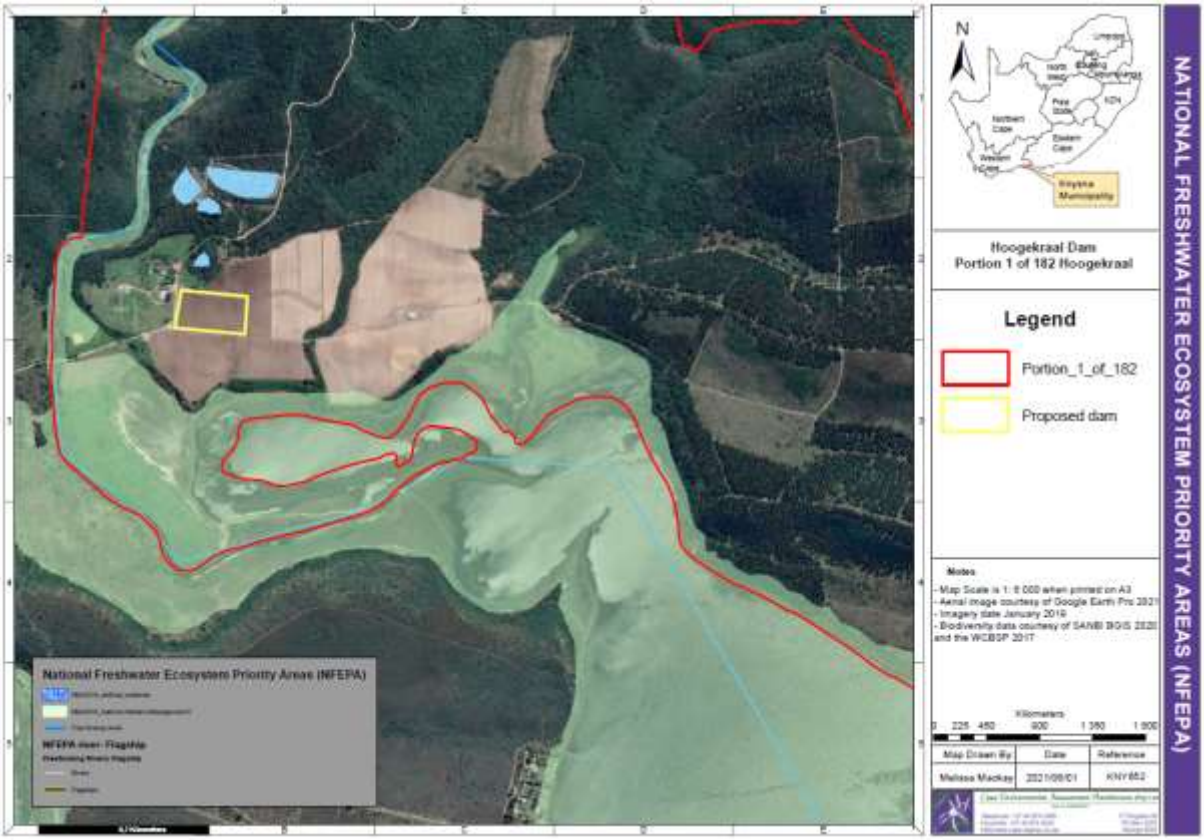


Figure 9: National Freshwater Ecosystem Priority Areas (NFEPA)

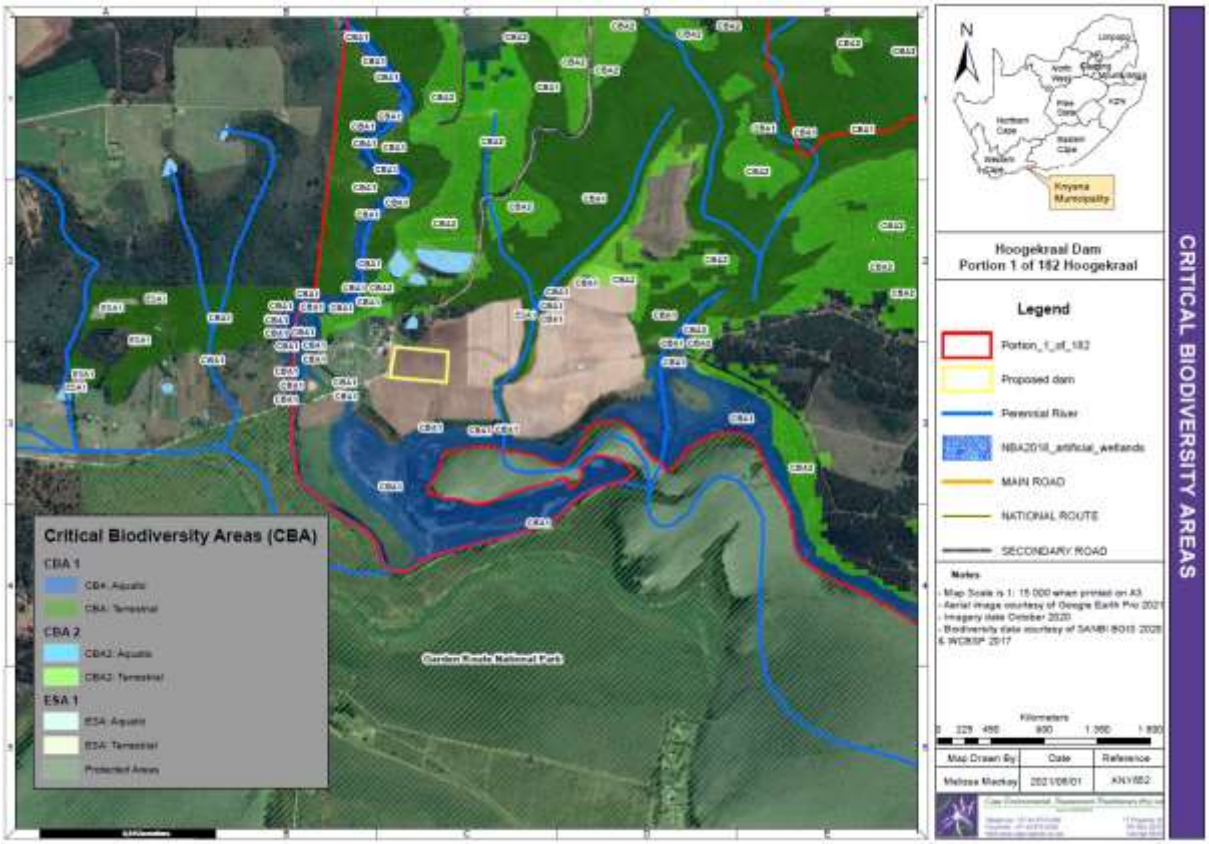


Figure 10: Critical Biodiversity Areas (CBA)

2.4 CONSIDERATION OF ALTERNATIVES

Given the site environmental constraints on the property, only two Alternatives are being proposed. Alternative 1 (preferred) is the development option proposed by the Applicant and Alternative 2 is the No Go Option i.e. no development takes place at all.

2.4.1 Alternative 1 (Preferred)

The proposal entails the construction of an off-stream dam to replace four existing off-stream dams.

Alternative 1 is located on the flattest area of the property in order to avoid impacting on steep slopes and avoids watercourses. It is also best placed to make use of the existing road access and is one of the only locations on the property that contains sufficient clay for the dam walls and basin.

The applicant is proposing the following:

- Off-stream dam of ±3ha on old crop fields to replace 4 existing off-stream dams;
- Storage capacity of the new dam is expected to be ±106 000m³;
- The dam wall will not exceed 5m in height.

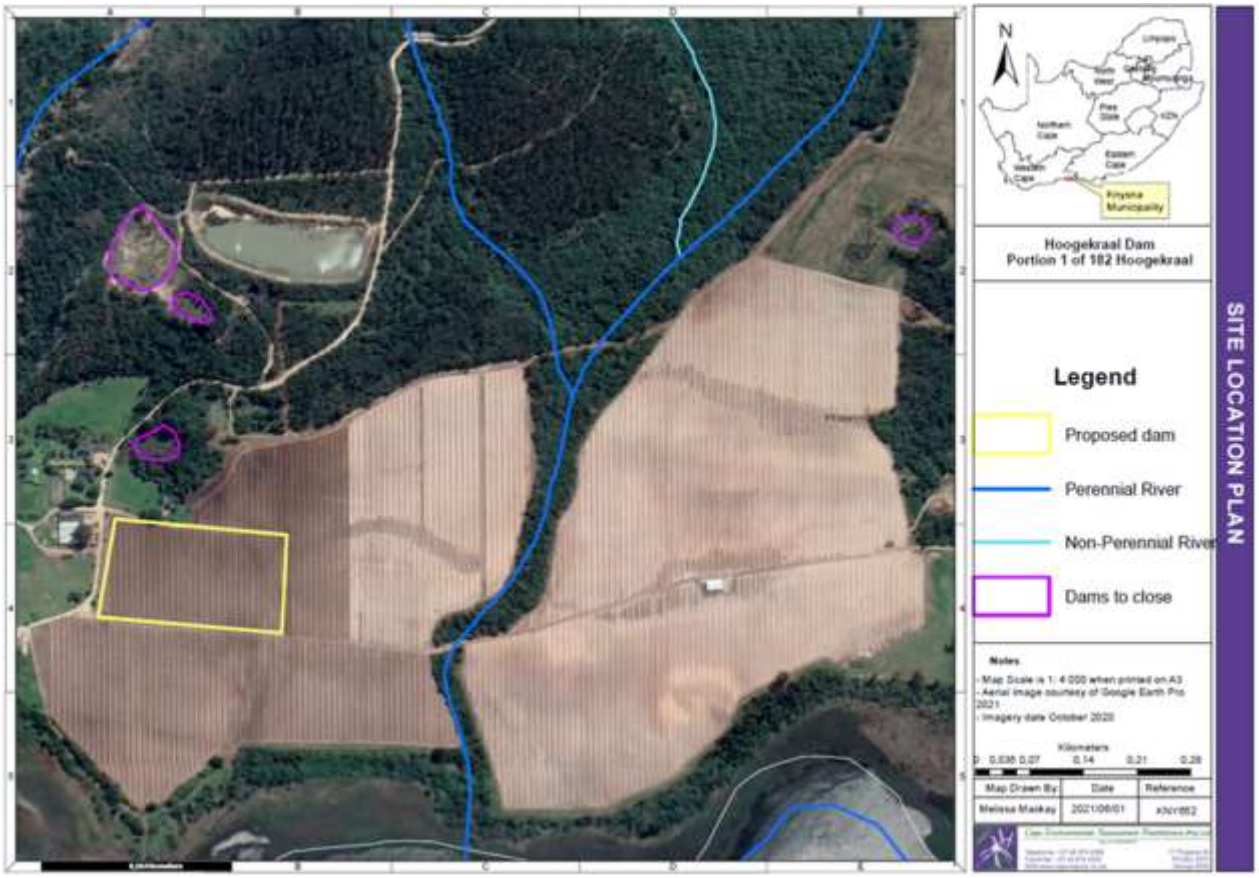


Figure 11: Site Development Plan

Figure 12: Location of proposed new dam

The yellow polygon above indicates the area to be used for the dam in the old lands.

2.4.2 Alternative 2 (No Go)

This alternative is not feasible option, given that the property is an actively commercial agricultural entity but the infrastructure (existing dams) are not suitable nor intact enough for the sustainability of the farming enterprise. The applicant is not intending to abstract or store more water than is already registered to this cadastral unit, but in the changing nature of agriculture, wishes to utilise it more effectively. The replacement of the four existing off-stream dams with one off-stream dam provides a reasonable and efficient option for the property.

The no-go alternative is thus not considered a favourable option in light of the benefits associated with the proposed development, however it will be used as a baseline from which to determine the level and significance of potential impacts associated with the proposal.

3. LEGISLATIVE AND POLICY FRAMEWORK

The legislation that is relevant to this study is briefly outlined below. These environmental requirements are not intended to be definitive or exhaustive but serve to highlight key environmental legislation and responsibilities only.

3.1 NATIONAL LEGISLATION

This section deals with nationally promulgated or nationally applicable legislation associated with the proposed development on Portion 1 of Farm 182, Hoogekraal.

3.1.1 The Constitution of the Republic of South Africa

The Constitution of the Republic of South Africa (Act 108 of 1996) states that everyone has a right to a non-threatening environment and that reasonable measures are applied to protect the environment. This includes preventing pollution and promoting conservation and environmentally sustainable development, while promoting justifiable social and economic development.

The Constitution and Bill of Rights provides that:

Everyone has the right:

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

NEMA (discussed below) is the enabling legislation to ensure this primary right is achieved.

3.1.2 National Environmental Management Act (NEMA, Act 107 of 1998))

The current assessment is being undertaken in terms of the **National Environmental Management Act** (NEMA, Act 107 of 1998)[3]. This Act makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority (in this case, the national Department of Forestry, Fisheries and the Environment, (DFFE)) based on the findings of an Environmental Assessment.

The proposed development triggers listed activity in terms of the NEMA 2014 EIA Regulations as amended, which require a Basic Assessment Process. Such a process must be conducted by an

[3] The Minister of Water and Environmental Affairs promulgated new regulations in terms of Chapter 5 of the National Environmental Management Act (NEMA, Act 107 of 1998), viz, the Environmental Impact Assessment (EIA) Regulations 2014 (as amended in April 2017). These regulations came into effect on 08 December 2014 (amended on 07 April 2017) and replace the EIA regulations promulgated in 2006 and 2010.

independent EAP. Cape EAPrac has been appointed by the applicant to undertake this process. The figure below depicts a summary of the Basic Assessment process.

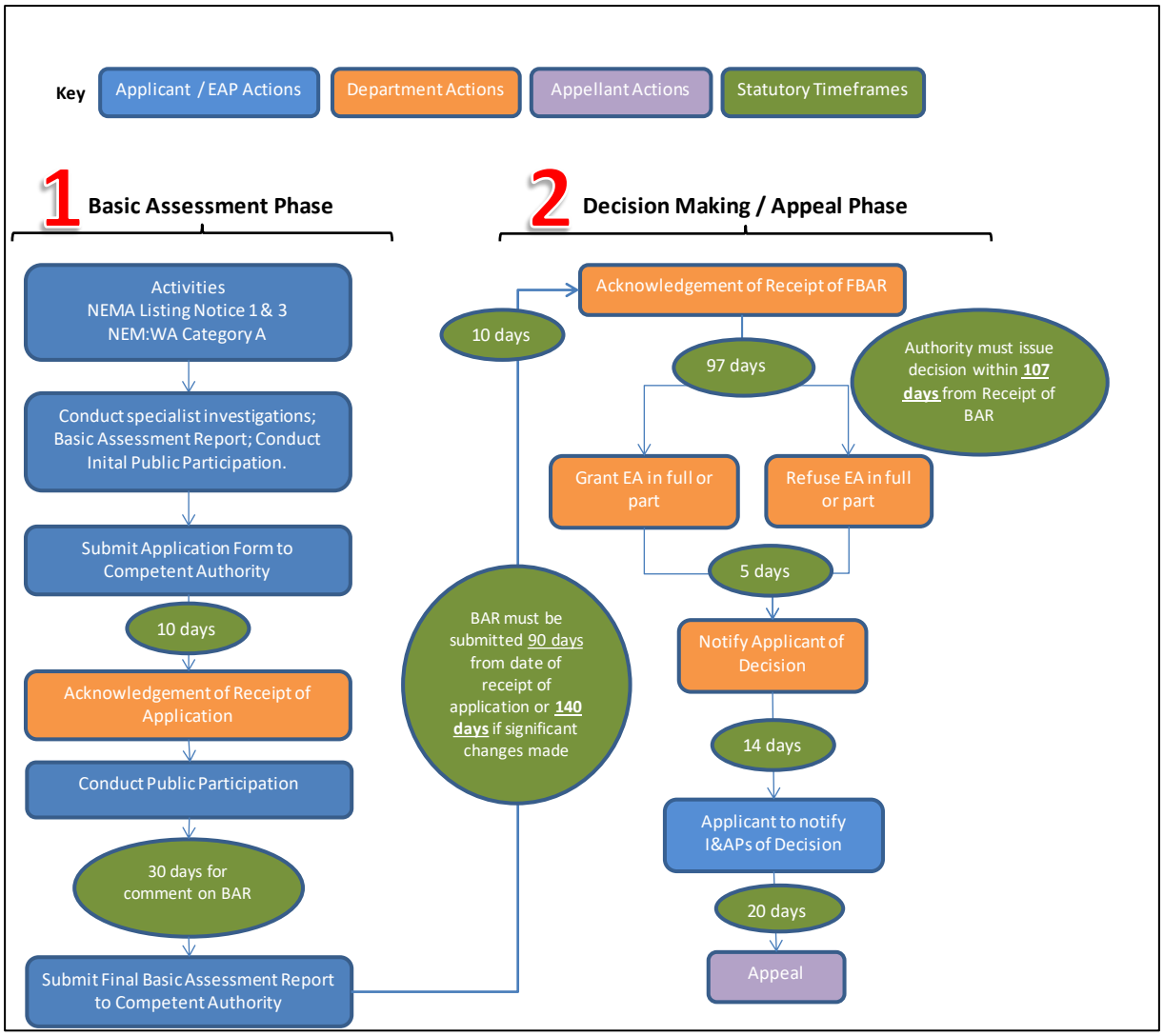


Figure 13: Summary of Basic Assessment Process in terms of the 2014 Regulations (as amended).

The listed activity associated with the proposed development, as stipulated under 2014 Regulations **327 (Listing Notice 1)** is as follows:

Table 3: NEMA 2014 (As amended in April 2017) listed activities applicable to Hoogekraal Dam.

Activity No(s):	Basic Assessment Activity(ies) as set out in Listing Notice 1	Description
13	The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.	Construction of an off-stream storage dam with a volume of ± 106 000m³ with a wall height of less than 5m and covering an area of ±3ha.

Before the above mentioned listed activity can be undertaken, authorisation must be obtained from the relevant authority, in this case the DFFE. Should the Department approve the proposed activity, the Environmental Authorisation does not exclude the need for obtaining relevant approvals from other Authorities who have a legal mandate in respect of the activity.

3.1.3 National Environmental Management: Biodiversity (NEM:BA, Act 10 of 2004)

The National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA) provides for listing threatened or protected ecosystems, in one of four categories: critically endangered (CR), endangered (EN), vulnerable (VU) or protected. The first national list of threatened terrestrial ecosystems for South Africa was gazetted on 9 December 2011 (National Environmental Management: Biodiversity Act: National list of ecosystems that are threatened and in need of protection, (G 34809, GN 1002), 9 December 2011).

NEMBA also deals with endangered, threatened and otherwise controlled species. The Act provides for listing of species as threatened or protected, under one of the following categories:

- **Critically Endangered**: any indigenous species facing an extremely high risk of extinction in the wild in the immediate future.
- **Endangered**: any indigenous species facing a high risk of extinction in the wild in the near future, although it is not a critically endangered species.
- **Vulnerable**: any indigenous species facing an extremely high risk of extinction in the wild in the medium-term future; although it is not a critically endangered species or an endangered species.
- **Protected species**: any species which is of such high conservation value or national importance that it requires national protection. Species listed in this category include, among others, species listed in terms of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The list of threatened terrestrial ecosystems supersedes the information regarding terrestrial ecosystem status in the NSBA 2004. In terms of the EIA regulations, a basic assessment report is required for the transformation or removal of indigenous vegetation in a critically endangered or endangered ecosystem regardless of the extent of transformation that will occur.

The study area is located in the **Garden Route Shale Fynbos** (Vulnerable) vegetation type with a small corner of the dam in the **Knysna Sand Fynbos** (Endangered) vegetation type. According to the Vegetation Map of South Africa, Lesotho and Swaziland the mapped main vegetation unit occurring on the property is Vulnerable Garden Route Shale Fynbos (FFh9) and Endangered Knysna Sand Fynbos (FFd10). The recent SANBI 2018 Threat Status Comparison with the listing of threatened ecosystems in 2011 (Skowno et al. 2019), indicates that both vegetation types retain the same conservation status.

It must be noted however that the property has been extensively transformed over many decades for agricultural purposes and there is no evidence of any remnant vegetation associated with these mapped types occurring on the dam site.

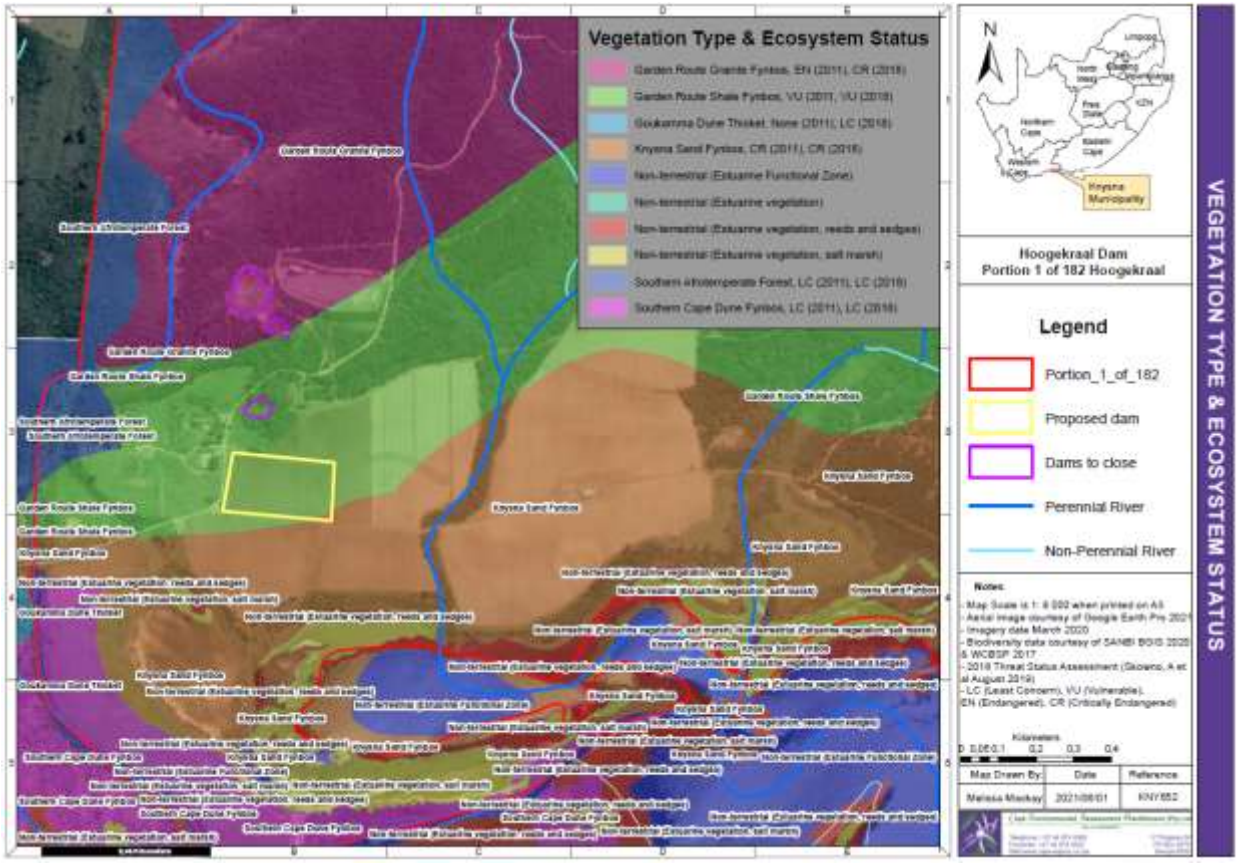


Figure 14: Vegetation Type & Ecosystem status

3.1.4 National Environmental Management: Integrated Coastal Management Act (Act 24 of 2008)

The Act aims to establish a system of integrated coastal and estuarine management in the Republic, including norms, standards and policies, in order to promote the conservation of the coastal environment, and maintain the natural attributes of coastal landscapes and seascapes, and to ensure that development and the use of natural resources within the coastal zone is socially and economically justifiable and ecologically sustainable; to define rights and duties in relation to coastal areas; to determine the responsibilities of organs of state in relation to coastal areas; to prohibit incineration at sea; to control dumping at sea, pollution in the coastal zone, inappropriate development of the coastal environment and other adverse effects on the coastal environment; to give effect to South Africa's international obligations in relation to coastal matters; and to provide for matters connected therewith.

The ICMA activities applicable to the development generally include the prevention of pollution to marine waters and public access to coastal areas.

The dam site is not located within any areas listed in terms of the NEM:ICMA i.e. it is outside of any Coastal Management Lines (CML) or Coastal Protection Zone (CPZ), including the Knysna CML for Protected Areas.

Figure 15: Coastal Management Lines (DEA&DP 2018)

3.1.5 National Environmental Management: Protected Areas Act (NEM:PAA, Act 57 of 2003)

The National Environmental Management: Protected Areas Act 57 of 2003 intends:

- to provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes;
- for the establishment of a national register of all national, provincial and local protected areas;
- for the management of those areas in accordance with national norms and standards;
- for intergovernmental co-operation and public consultation in matters concerning protected areas; and
- for matters in connection therewith.

South African National Parks (SANParks) is the managing authority for the Garden Route National Park (GRNP) which is located south of the property and includes the Swartvlei.

Portion 1 of Farm 182 Hoogekraal is located immediately adjacent to the Swartvlei which forms part of the GRNP, although the dam site is not located in the protected area. Due to the proximity however, SANParks has been identified as a stakeholder and will be requested to comment on this report.

Figure 16: Proximity to Protected Areas (CapeFarmMapper, 2021)

3.1.6 Conservation of Agricultural Resources Act – CARA (Act 43 of 1983):

The CARA aims to provide for the conservation of natural agricultural resources by maintaining the production potential of land, combating and preventing erosion and weakening or destruction of water resources, protecting vegetation and combating weeds and invader plant species.

As with NEM:BA, alien invasive plant / weed species listed in terms of CARA must be controlled and/or removed. In the case of the operation of the development, the conservation of soil and water resources is applicable, in the sense that measures must be in place to avoid the pollution or degradation of these resources within the open space areas of the property.

The abundance of alien plant species on the Portion 1 of Farm 182 Hoogekraal has been high, due in part to the unchecked spread of AIS and that large tracts of land are historical and current pine plantations. The owner has initiated a clearing programme to remove AIS and will also retain many of the woodlots for ongoing timber harvesting. A control plan and input from the Southern Cape Fire Protection Agency (SCFPA) has been initiated on the site. Continued follow up and control will be required to manage the problem in the future, and this is addressed in the Environmental Management Programme (EMPr).

In addition to alien plant clearing, the applicant must ensure that water resources and soil erosion are prevented on the site. The site selection for the dam aids in this by avoiding steep slopes.

3.1.7 National Water Act (NWA, Act 36 of 1998)

The National Water Act (NWA) gives effect to the constitutional right of access to water. The Act's overall purpose is to ensure that South Africa's water resources are protected, used and managed in ways which take into account a number of factors, including inter-generational equity, equitable access, redressing the results of past racial and gender discrimination, promoting sustainable and beneficial use, facilitating social and economic development, and providing for water quality and environmental protection.

The NWA makes persons who own, control, occupy or use land responsible for taking measures to prevent pollution of water resources, and empowers Government authorities to take measures to enforce this obligation. No Water Use Licenses or Permits are required for this development, however stormwater management across the property during construction and operation must be in line with efforts to prevent pollution.

The Breede Gouritz Catchment Management Agency (BGCMA) as mandated authority for the NWA in the region, has been requested to provide comments on the Draft BAR.

The following is noted by an aquatic specialist:

- Although multiple watercourses are present on and adjacent to the property, there are no mapped aquatic features within the footprint of the proposed dam.
- The proposed location of the dam is in historical fields which have been used for grazing pasture and hops prior to conversion to macadamia orchards. The southern edge of the proposed dam is approximately 250 m from the edge of Swartvlei Lake.
- As the site of the proposed off-stream dam is not physically located within any part of a watercourse, it cannot have any impact on the quantity or quality of water flowing from the SWSA.
- The abstraction of water from the Diep (Wolwe) River to sustain the dam must be assessed according to the National Water Act to ensure that water abstracted does not compromise the quantity and quality of water in terms of the Ecological Reserve for both the river itself, and the Swartvlei Estuary. This type of information should be incorporated in the application for a Water Use License (WUL) which is currently in progress by the applicant.
- While not the direct subject of this assessment, it is recommended that all recently converted fields (from pasture to Macadamia nut trees) include a naturally vegetated buffer of at least 15 m from the edge of Swartvlei Lake to protect water quality from agricultural land use.

The full report is included as Appendix E8.

Figure 17: Aquatic resources (Confluent Environmental, 2021)

3.1.8 National Forests Act (NFA, Act 84 of 1998):

The NFA provides for the protection of forests, as well as specific tree species, quoting directly from the Act: “no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree, except under a licence or exemption granted by the Minister to an applicant and subject to such period and conditions as may be stipulated”. The Department of Forestry, Fisheries and the Environment (DFFE) is responsible for the implementation and enforcement of the NFA, which includes prohibition of damage to indigenous trees in any natural forest without a licence (Section 7 of the NFA), as well as the prohibition of the cutting, disturbing, damaging destroying or removing protected trees without a licence (Section 15 of the NFA).

In the case of the development, no protected trees or forests have been identified on the developable area.

3.1.9 National Veld and Forest Fire Act (Act 101 of 1998)

The purpose of the National Veld and Forest Fire Act is to **prevent and combat veld, forest and mountain fires** throughout the RSA and to provide institutions, methods and practices for achieving this purpose. Institutions include the formations of such bodies as **Fire Protection Associations** (FPA’s) and **Working on Fire**. The Act provides the guidelines and constitution for the implementation of these institutions as well as their functions and requirements.

All landowners are required in terms of this Act to prepare and maintain **firebreaks** on the boundary of their property and any adjoining land. Only the Minister may exempt a landowner from providing firebreaks.

In areas that are considered a high fire risk, especially in vegetation types that tend to be fire driven ecosystems, it is recommended that a fire management plan is put in place, or the owner becomes a member of the local FPA and fall under the umbrella of the regional fire management strategy**. The Southern Cape is considered to be a fire driven ecosystem.**

The applicant is an active member of the SCFPA. They have assisted in the controlled burning of biomass piles to reduce the risk associated with felled AIS. The clearance of high risk AIS is significant in this area which has been inundated with serious, life threatening fires in the past years.

3.1.10 National Heritage Resources Act, 25 of 1998

The purpose of the National Heritage Resources Act is to:

- Introduce an integrated and interactive system for the management of the national heritage resources;
- Promote good government at all levels,
- Empower civil society to nurture and conserve their heritage resources so that they may be bequeathed to future generations;
- To lay down general principles for governing heritage resources management throughout South Africa;
- To introduce an integrated system for the identification, assessment and management of the heritage resources of South Africa;
- To establish the South African Heritage Resources Agency together with its Council to co-ordinate and promote the management of heritage resources at national level;
- To set norms and maintain essential national standards for the management of heritage resources in South Africa and to protect heritage resources of national significance;
- To control the export of nationally significant heritage objects and the import into South Africa of cultural property illegally exported from foreign countries;
- To enable the provinces to establish heritage authorities which must adopt powers to protect and manage certain categories of heritage resources;
- To provide for the protection and management of conservation-worthy places and areas by local authorities; and
- To provide for matters connected therewith.

A Notice of Intent to Develop (NID) in terms of the NHRA has been submitted to Heritage Western Cape.

A copy of the NID is included as Annexure G2 of this report.

3.1.11 Outeniqua Sensitive Coastal Areas (OSCAE)

The OSCA regulations were enacted in terms of ECA and make provision for properties within specified geographic locations between Groot Brak River and Plettenberg Bay to apply for a permit to undertake construction and vegetation removal activities. According to Schedule 3 of *GNR.1526 of 27 November 1998: Identification of activities which may have a detrimental effect on the environment: Outeniqua Sensitive Coastal Area Extension*, Portion 1 of Farm 182 Hoogekraal is listed as being one of the properties located in an OSCAE area. It must be noted that the mapped area provided shows only a portion of Portion 1 of Farm 182 Hoogekraal falling into the scheduled area.

However, since the area has been ploughed and utilised for agriculture for many decades, and prior to the introduction of the OSCAE regulations, the proposed dam area should not require a permit in terms of the following as taken from the regulations: "*Provided that this Notice shall not apply to activities of a like nature carried out in the normal pursuit and within the existing extent, as at the date of this Notice, of agriculture or domestic gardening in areas utilised for the said purpo*ses, ….".

Confirmation that no OSCAE application is required was obtained from the competent authority, Knysna Municipality. See Annexure G4.

3.2 GUIDELINES, POLICIES AND AUTHORITATIVE REPORTS

This section includes relevant Guidelines, Policies and Authoritative reports applicable to the proposed off-stream dam development on Portion 1 of Farm 182 Hoogekraal, Sedgefield.

3.2.1 National Protected Area Expansion Strategy (NPAES) for S.A. 2008 (2010)

Considering that South Africa's protected area network currently falls far short of sustaining biodiversity and ecological processes, the NPAES aims to achieve cost-effective protected area expansion for ecological sustainability and increased resilience to Climate Change. Protected areas, recognised by the National Environmental Management: Protected Areas Act (Act 57 of 2003), are considered formal protected areas in the NPAES. The NPAES sets targets for expansion of these protected areas, provides maps of the most important protected area expansion, and makes recommendations on mechanisms for protected area expansion.

The NPAES identifies 42 focus areas for land-based protected area expansion in South Africa. These are large intact and un-fragmented areas suitable for the creation or expansion of large protected areas.

The closest NPAES focus area to this property is the Garden Route expansion area located approximately 15kms to the west.

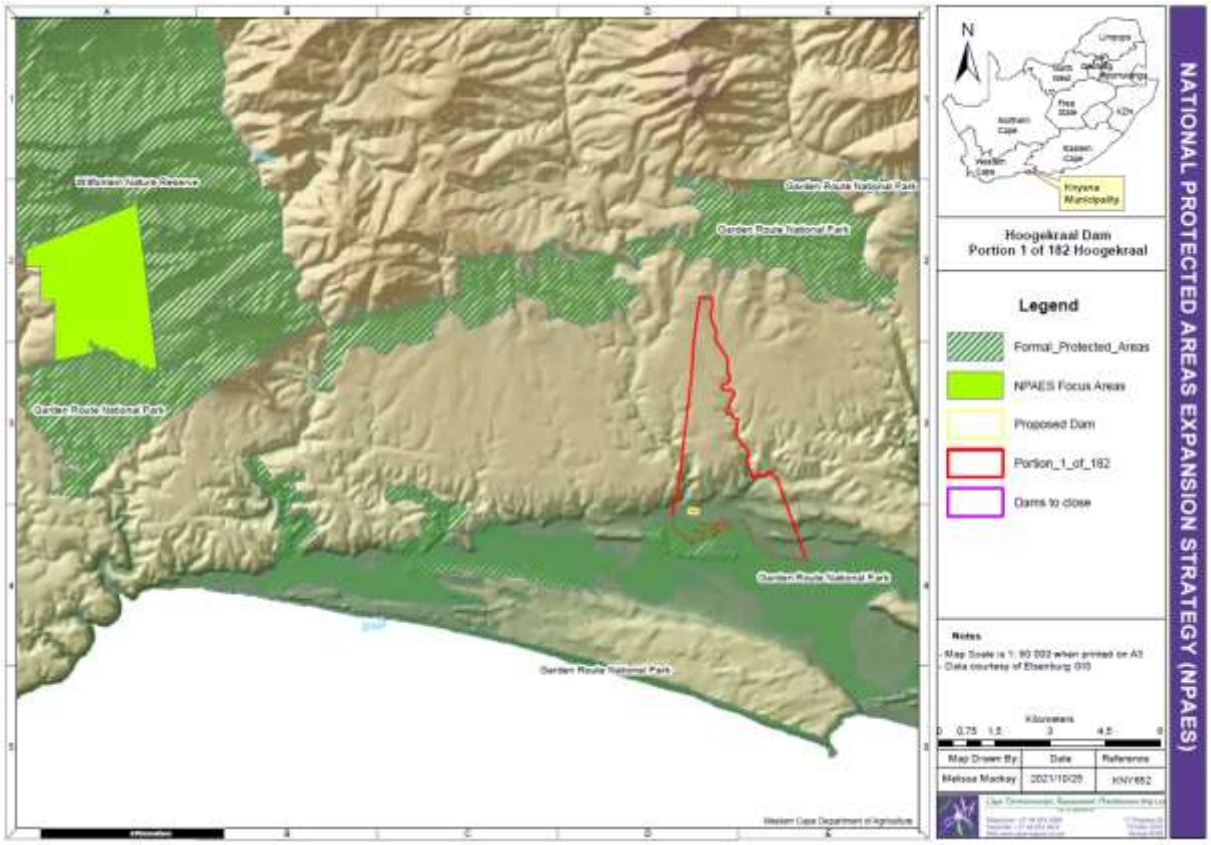


Figure 18: National Protected Areas Expansion Strategy (NPAES)

3.2.2 Critical Biodiversity Area Planning

A Critical Biodiversity Areas (CBA) Map is a spatial plan for ecological sustainability. It identifies a set of biodiversity priority areas, called Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs), which, together with protected areas, are important for the persistence of a viable representative sample of all ecosystem types and species as well as the long-term ecological functioning of the landscape as a whole.

CBA Maps can be given formal legal status through the National Environmental Management: Biodiversity Act (Act 10 of 2004). The CBA for the Western Cape has not yet been adopted in terms of NEM:BA.

According to the CBA Map, the proposed dam is not located in any CBA or ESA.

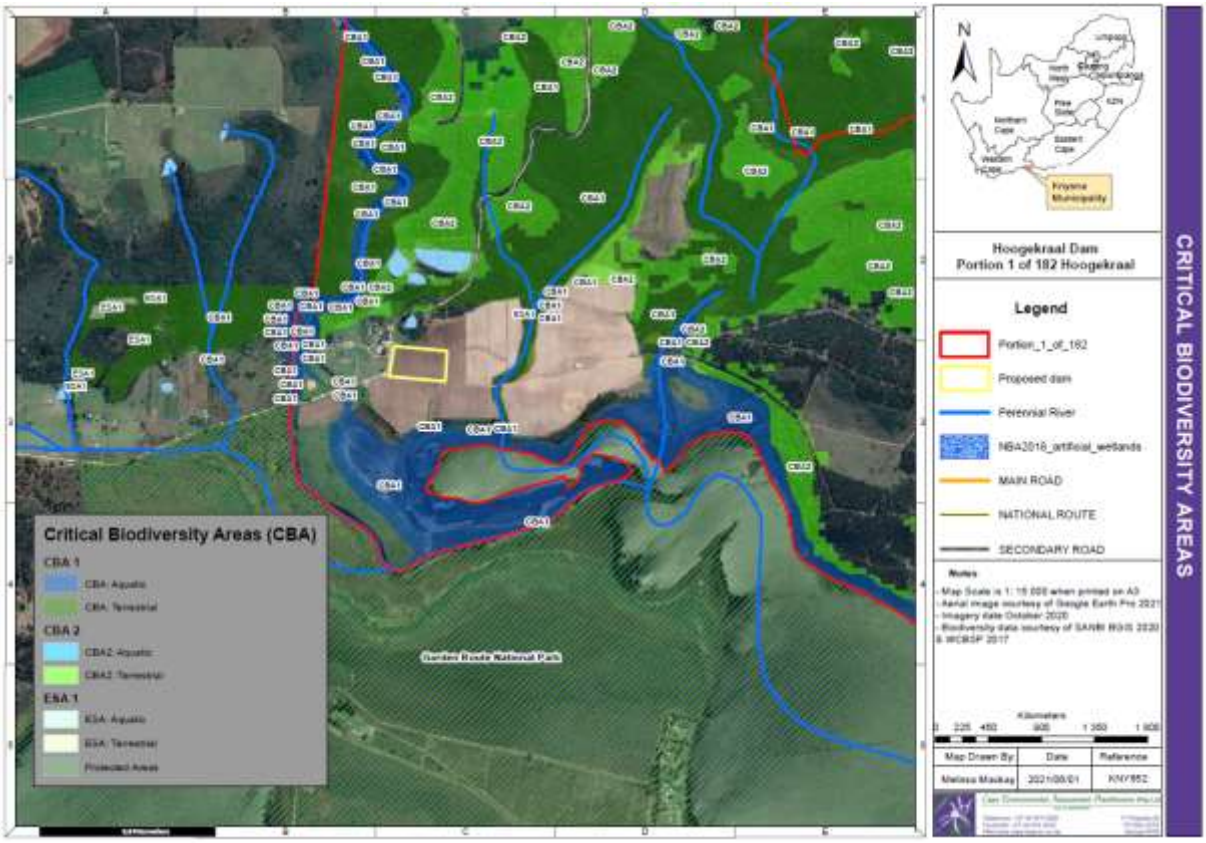


Figure 19: Critical Biodiversity Areas (CBA)

3.2.3 Additional Polices & Guidelines

POLICY/ GUIDELINES	ADMINISTERING AUTHORITY
Guideline for Environmental Management Plans (2005)	DEA&DP
Guideline for Public Participation (2013)	DEA&DP
Guideline on Alternatives (2013)	DEA&DP
Guideline on Need & Desirability (2013)	DEA&DP
Knysna Municipality Spatial Development Framework (2020)	Knysna Municipality
Knysna Integrated Development Plan 2017 – 2022	Knysna Municipality
2015/16 – 2019/20 Strategic Plan for Agriculture	DoA
The Green Choice Living Farms Reference 2009/2010	WWF

3.2.4 DFFE Screening Tool and Protocols

A screening tool report was generated for the proposed development on the 6 May 2021. The outcomes of the various environmental themes sensitivity as well as the level of study required by the protocols, are summarised in the table below.

Table 4: Sensitivity of the environmental themes as per the Screening Tool

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme		X		
Animal Species Theme			X	
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme	X			
Civil Aviation Theme		X		
Defence Theme				X
Paleontology Theme			X	
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

Table 5: Studies required in terms of the Screening Tool

No.	Specialist assessment	✓ / ✖	Assessment Protocol Reasoning
1	Agricultural Impact Assessment High sensitivity	✖	The development of the dam is in support of existing and future agricultural activities on the property. Correspondence with the WC Department of Agriculture confirmed that no AIA is necessary and they will comment on the Basic Assessment Report.
2	Landscape/Visual Impact Assessment Sensitivity not rated	✖	The dam will be located on old crop lands and forms part of the agricultural business on the site. It therefore does not detract from the landscape. A Notice of Intent to Develop has been submitted to Heritage Western Cape (HWC) and it is not likely that any further studies will be required.
3	Archaeological and Cultural Heritage Impact Assessment Very High sensitivity	✖	The area on which the dam is being proposed has been utilised for agriculture for many years and is significantly disturbed according to the heritage practitioner. Unless otherwise stated by HWC, no further studies will be undertaken.
4	Palaeontology Impact Assessment High sensitivity	✖	The area on which the dam is being proposed has been utilised for agriculture for many years and is significantly disturbed according to the heritage practitioner. Unless otherwise stated by HWC, no further studies will be undertaken.
5	Terrestrial Biodiversity Impact Assessment Very high sensitivity	✓	A Terrestrial Biodiversity Compliance Statement has been drafted. The site has been significantly disturbed and the sensitivity of the site is deemed to be very Low.
6	Aquatic Biodiversity Impact Assessment Very High sensitivity	✓	The development area does not impact on any aquatic resources. Please see the maps and images below for confirmation. An Aquatic Compliance Statement has been drafted and confirms that the sensitivity of the proposed development on the site is Very Low.
7	Hydrology Sensitivity not rated	✓	A Hydrology Report has been drafted as part of the Water Use License Application for storage. The report is included as part of this BAR.
8	Geotechnical Assessment Sensitivity not rated	✓	A Geotechnical Report has been drafted as part of the Water Use License Application for storage. The report is included as part of this BAR.

9	Socio-Economic Assessment Sensitivity not rated	×	The activities proposed will take place within the existing rights of the property and the dam is in support of current and future agricultural activities on the property.
10	Seismicity Assessment Sensitivity not rated	×	The Geotechnical Report has confirmed that the soils and ground are suitable for the size of a dam being proposed. No further studies will thus be undertaken.
11	Plant Species Assessment Medium sensitivity	✓	A combined Terrestrial / Botanical / Ecological Compliance Statement was undertaken for this proposal.
12	Animal Species Assessment High Sensitivity	✓	The proposal is for a dam on existing crop lands associated with commercial agriculture. The site location has been actively farmed for many decades and the area does not form part of any natural ecosystem for fauna. A combined Terrestrial / Botanical / Ecological Compliance Statement was undertaken for this proposal

Copies of the various specialists reports have been included as annexures to this BAR.

4. PLANNING CONTEXT

The property is zoned as Agriculture 1 and has been utilised for commercial agriculture for many decades. The dam is being proposed on an area that was utilised for crops.

In summary, the proposed development as envisaged:

1 Does not require any land use approvals, as the proposed development is in line with the current zoning;

2 Is consistent with the character of the area;

3 Is consistent with the various applicable spatial planning policies and land use management legislation;

4 Will create employment opportunities, and allow the owner to unlock the full potential of his agricultural property.

It is the considered opinion that the proposed development will achieve a sensitive balance between the natural environment, the built environment, and the social economic environment, that is imperative to ensure sustainable development.

5. SITE DESCRIPTION AND ATTRIBUTES

The following sections provide a description of the natural environmental and built environment context of Portion 1 of Farm 182, Hoogekraal, Sedgefield.

5.1 LOCATION & BUILT ENVIRONMENT

The target property, is located in the northwest of the town of Sedgefield in the Western Cape Province, within the jurisdiction area of the Knysna Local Municipality. The property is approximately 1010.31ha in size and is zoned as “Agricultural Zone I” in terms of the Knysna Zoning Scheme Regulations (1992).

The property borders the Swartvlei on its southern boundary. The proposed new off stream dam is planned in this southern portion of the farm.

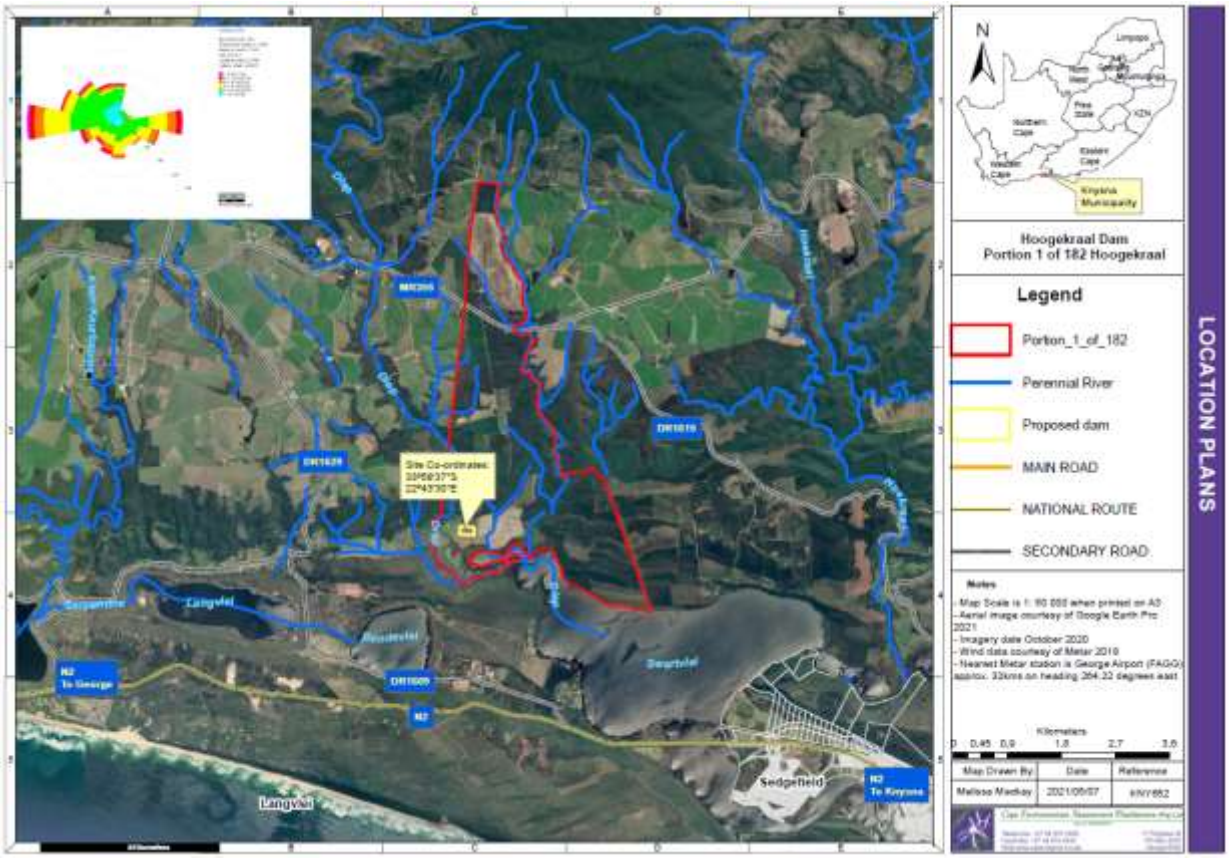


Figure 20: Area location of Hoogekraal Dam

The property uses include crop production, pine plantations, avocado and macadamia orchards and the Swartvlei Equestrian Estate (horse yard and tourist accommodation).

The area is characterised by commercial and small scale agriculture, lifestyle smallholdings, tourist facilities and conservation areas (Garden Route National Park).

Figure 21: Neighbouring land uses

5.2 GEOLOGY & CLIMATE

5.2.1 Geology & Soils

The soils at the property, according to Cape Farm Mapper, are grey regic soils associated with fixed dunes and dune rock (Land Type Hb12).

Soils & Geology (ENPAT)

Land Type:	**Hb12**
Soil:	Grey regic sands and other soils
Geology:	Fixed dunes and dune rock.

Samples of soil was taken within the proposed dam site at three different sites. These samples are representative of the different types of soil found at the various sites. The samples were sent to both Roadlab in Stikland and to Control Geosciences in Cape Town.

Clay content

CT 14977 was determined according to the SANS 6244:2006. The results were a clay content of 18.7% This is on the sample given.

Double Hydrometer test

CT 14977B was done according to ASTM D422 and the following results were obtained:

% Clay	24
% Silt	52
% Sand	24
% Gravel	0

95% of the partical size was smaller than 0.3mm.

The Plasticity Index is 12 and Liquid limit is 30.

The Clay percentage is 24% which falls at the bottom end of the Medium Potential Expansiveness.

5.2.2 Climate

The region is classified as a temperate zone with no dry season and hot summers (Köppen-Geiger Climate Zones (1980-2016)). The region has a mean annual rainfall of 744mm and an average temperature of 16.20°C.

Table 6: Climatic parameters associated with Portion 1 of Farm 182 Hoogekraal

Month	Mm (Rainfall)	°C (Temperature)
January	59.0	18.9
February	54.0	19.3
March	69.0	18.4
April	54.0	17.2
May	46.0	15.9
June	40.0	14.6
July	36.0	13.6
August	49.0	13.6
September	52.0	14.0
October	65.0	15.0
November	54.0	16.3
December	50.0	17.9

5.3 TOPOGRAPHY

The terrain type is gently sloping, and according to CapeFarmMapper, the farm has a slope of between 0 and 10% gradient or between 1.35 and 3.69 degrees. (http://www.1728.org/gradient.htm, accessed 25 October 2021). This is a ratio of between 1:42.43 and 1:15.51 and is considered flat.

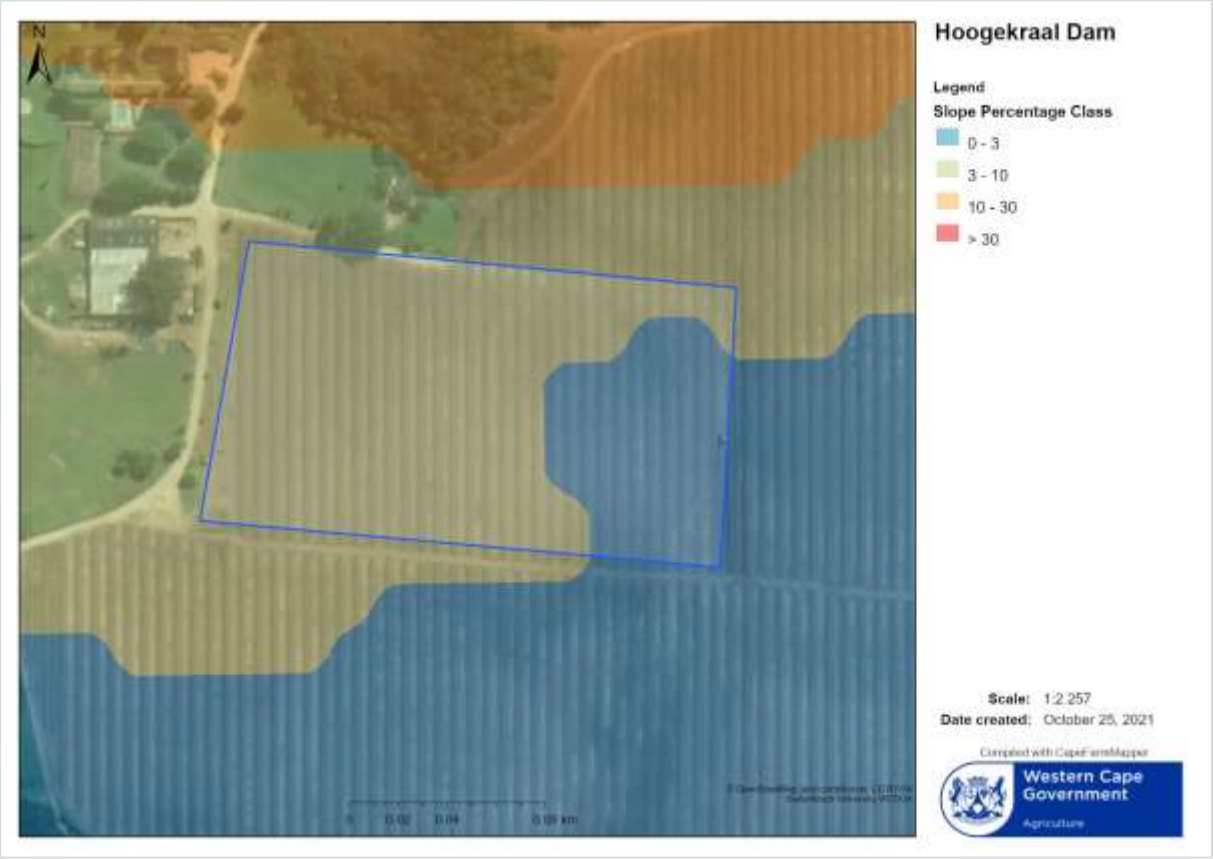


Figure 22: Slope Classification (CapeFarmMapper, 2021)

INPUT Angle In Degrees	1.35	
**********		

CALCULATE

Using Rise / Run	1 in 42.433 Ratio	2.3566 % Grade
Using Rise / Hypotenuse	1 in 42.445 Ratio	2.356 % Grade
**********	**********	**********

INPUT Angle In Degrees	3.69	
**********		

CALCULATE

Using Rise / Run	1 in 15.506 Ratio	6.4492 % Grade
Using Rise / Hypotenuse	1 in 15.538 Ratio	6.4358 % Grade
**********	**********	**********

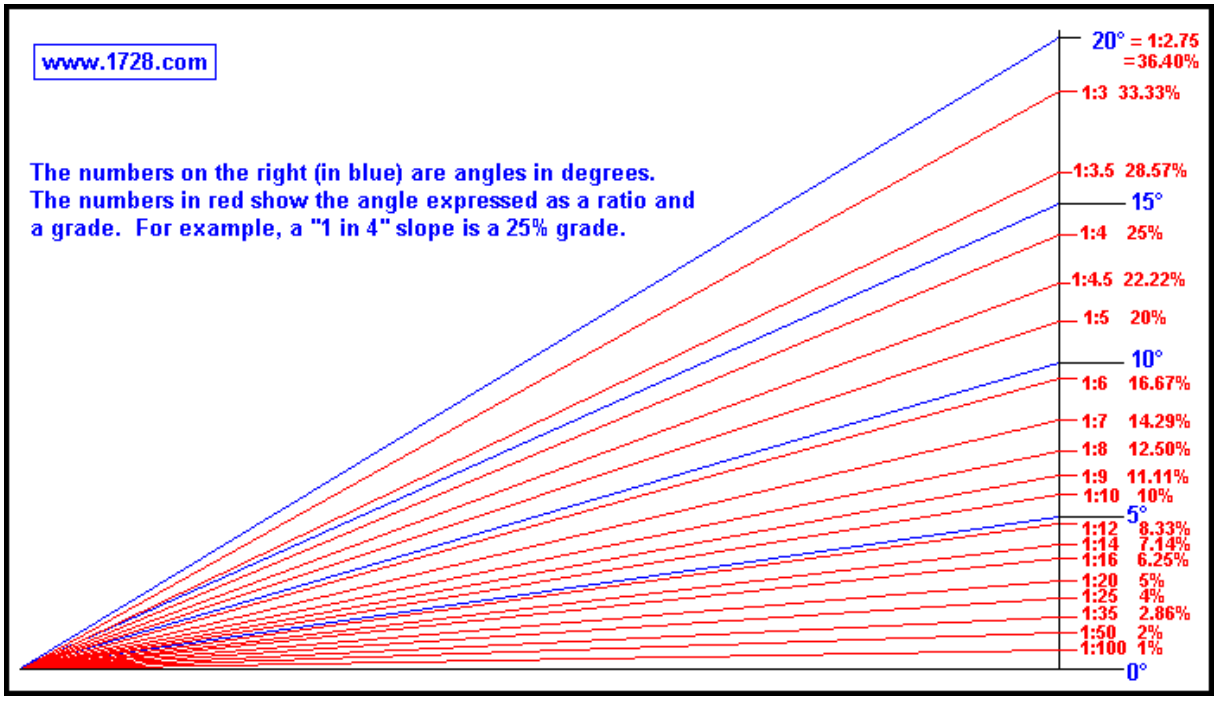


Figure 23: Gradient explanation http://www.1728.org/gradient.htm

Figure 24: 5m Contours (CapeFarmMapper, 2021)

5.4 BOTANICAL / TERRESTRIAL BIODIVERSITY COMPOSITION OF THE SITE

Dr Marius van der Vyfer undertook a Terrestrial Biodiversity Compliance Statement for the proposed development. The full report is included as Annexure E3 from which the following has been drawn.

5.4.1 Broad-Scale Vegetation Patterns

According to the Vegetation Map of South Africa, Lesotho and Swaziland the mapped main vegetation unit occurring at the property is Vulnerable Garden Route Shale Fynbos (FFh9), listed i.t.o. the National

Environmental Management Biodiversity Act, as a threatened ecosystem. The recent SANBI 2018 Threat Status Comparison with the listing of threatened ecosystems in 2011 (Skowno *et al*. 2019), indicates that Garden Route Shale Fynbos retains a Vulnerable conservation status.

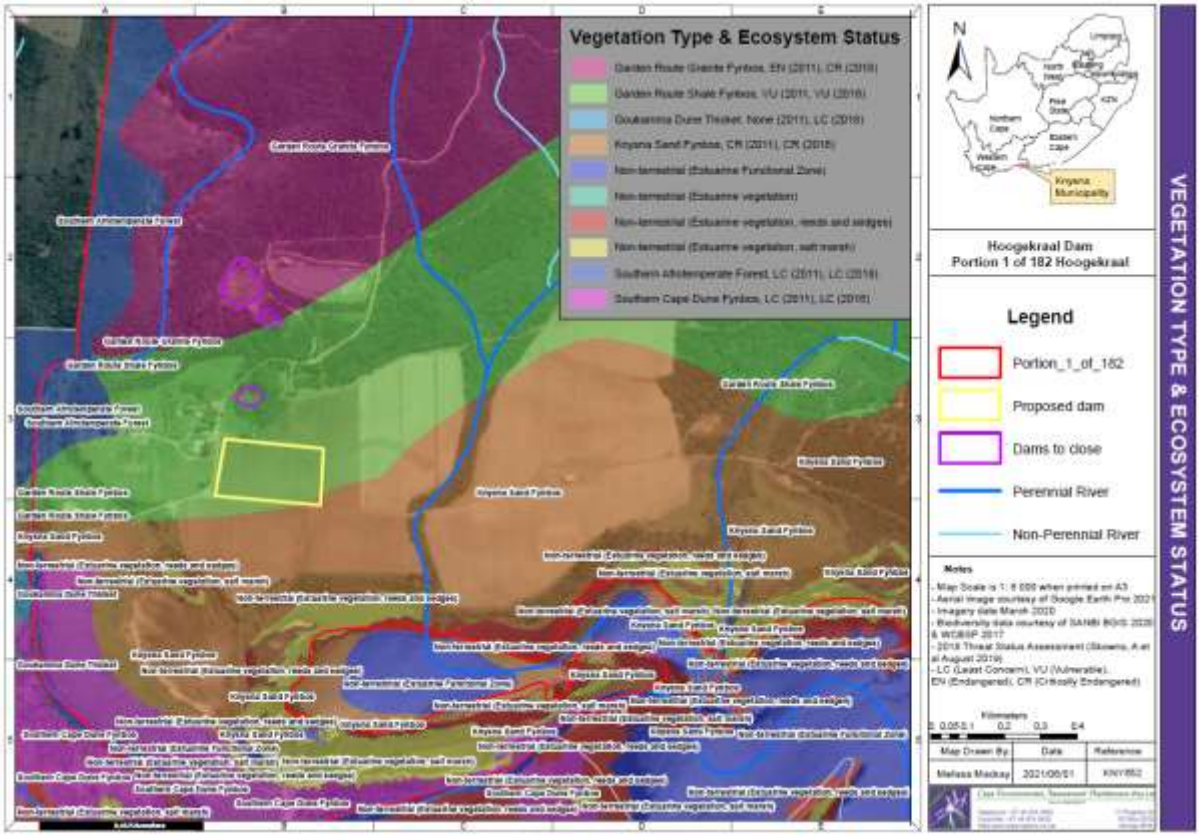


Figure 25: Vegetation Type & Ecosystem Status

The landscape within which the proposed development sites lies has high levels of transformation, fragmentation and degradation of the natural Garden Route Shale Fynbos and Knysna Sand Fynbos vegetation. The riverine area close to and on the western side of the site is infested with invasive alien plants, e.g., *Acacia mearnsii* (black wattle) and the landscape further north of the site is infested with pine (*Pinus radiata*) and blue gum trees (*Eucalyptus globules*).

Current landuse of the Garden Route Shale Fynbos and Knysna Sand Fynbos areas in and around the proposed site has already transformed the natural vegetation once present on site. The proposed site is overgrown with pioneer grass species, and cleared for crop agriculture in the past. The high density of fences and access roads, the high intensity historical landuse and the current wide variety of landuses around remaining natural vegetation fragments in the landscape has severely limited natural ecological function and processes present before anthropogenic transformation.

From a terrestrial biodiversity perspective, there are no identified constraints for the proposed development of the dam as shown in the layout provided, assuming that all standard construction and subsequent operational environmental health and safety guidelines be strictly followed. Because the site lies within a FEPA River Corridor (WCBSP, 2017) and is a sub-catchment or upstream management area (NFEPA, 2011) [4], important for the downstream FEPA (Swatrvlei Estuary), it is important that the proposed dam be built accordingly as to maintain the ecosystem integrity of the FEPA. The site in and around the proposed dam construction area is completely transformed and if the dam is constructed according to criteria that will ensure that it does not negatively impact downstream ecological processes then the dam will not put any further pressure on ecosystem than already exist. The location of the proposed site and its surrounding landuse lends itself to this type of development.

The proposed activity has the potential to contribute to biodiversity restoration on a small scale around the edges of the dam and it is highly recommended that the natural vegetation be allowed to regenerate or assisted with regeneration through revegetation or seeding after the completion of the dam. The highly sensitive areas around the dam should not be impacted by the dam construction activities.

5.5 AQUATIC COMPOSITION OF THE STUDY SITE

The property is located adjacent to the Swartvlei, but does not have any FEPA watercourses or wetlands on it. The perennial watercourse Wolwe River, is mapped inside the western boundary of the property. The dam will not be constructed instream of any watercourses.

The property is in area 9027 according to the National Freshwater Ecosystem Priority Atlas (Nel *et al.,* 2011) which is classified as an Upstream Management Area with the following management objectives: "*These are sub-quaternary catchments in which human activities need to be managed to prevent the degradation of downstream Protected Areas and Fish Support Areas."*

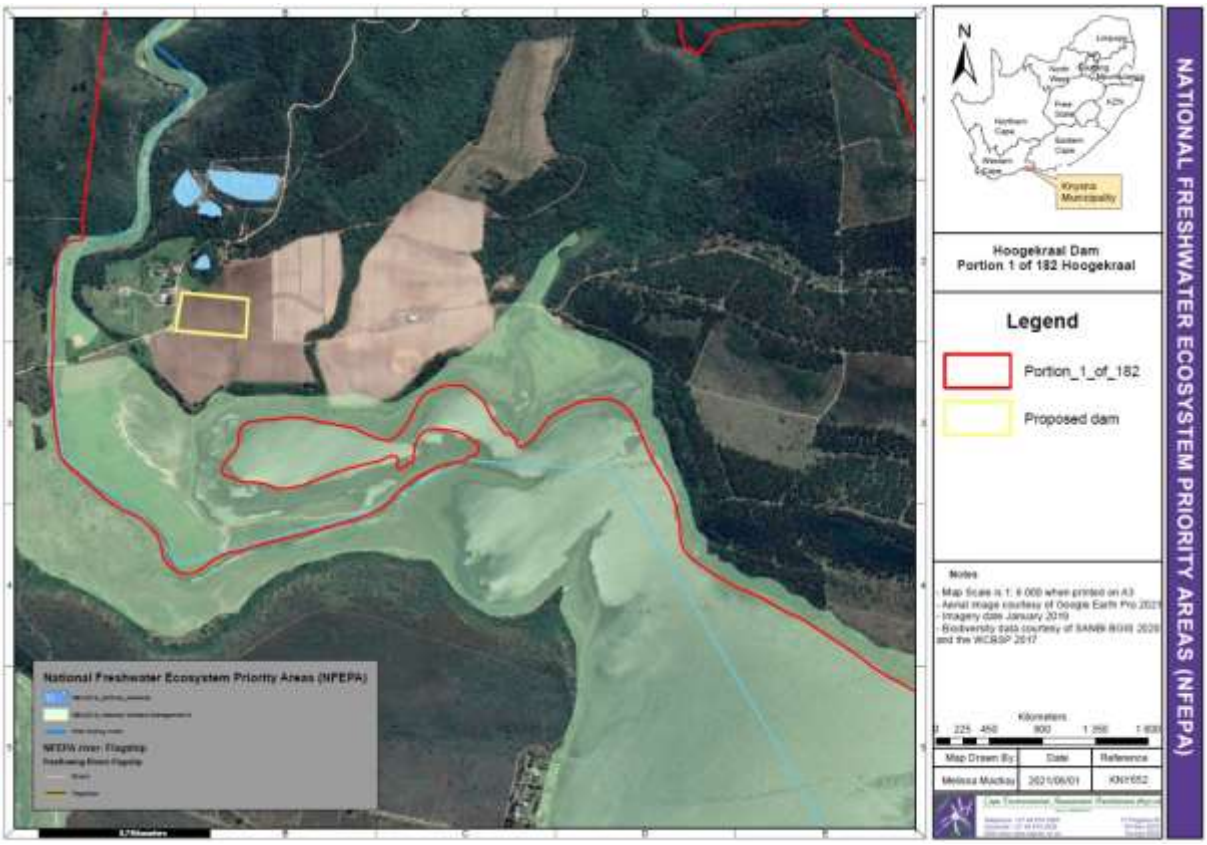


Figure 26: National Freshwater Ecosystem Priority Areas (NFEPA)

Aquatic biodiversity within the site has been identified as Very High on the basis that the site falls within the Outeniqua Strategic Water Source Area for surface water. SWSAs are defined as areas of land that supply a disproportionate (ie. Relatively large) quantity of mean annual runoff in relation to their size and are therefore considered nationally relevant (Le Maitre *et al*., 2018). A key objective in the management of SWSAs is to ensure the quantity and quality of water within and flowing from SWSAs is protected from developments that cause unacceptable and irreparable impacts. One of the relevant benefits identified with SWSAs is the provision of water for irrigation, particularly in low-lying areas below high relief features such as the Outeniqua Mountains. The property is located in the low-lying area of the SWSA, and as an agricultural operation (both historically and in the present) directly benefits from the supply of good quality and quantities of water from the catchment.

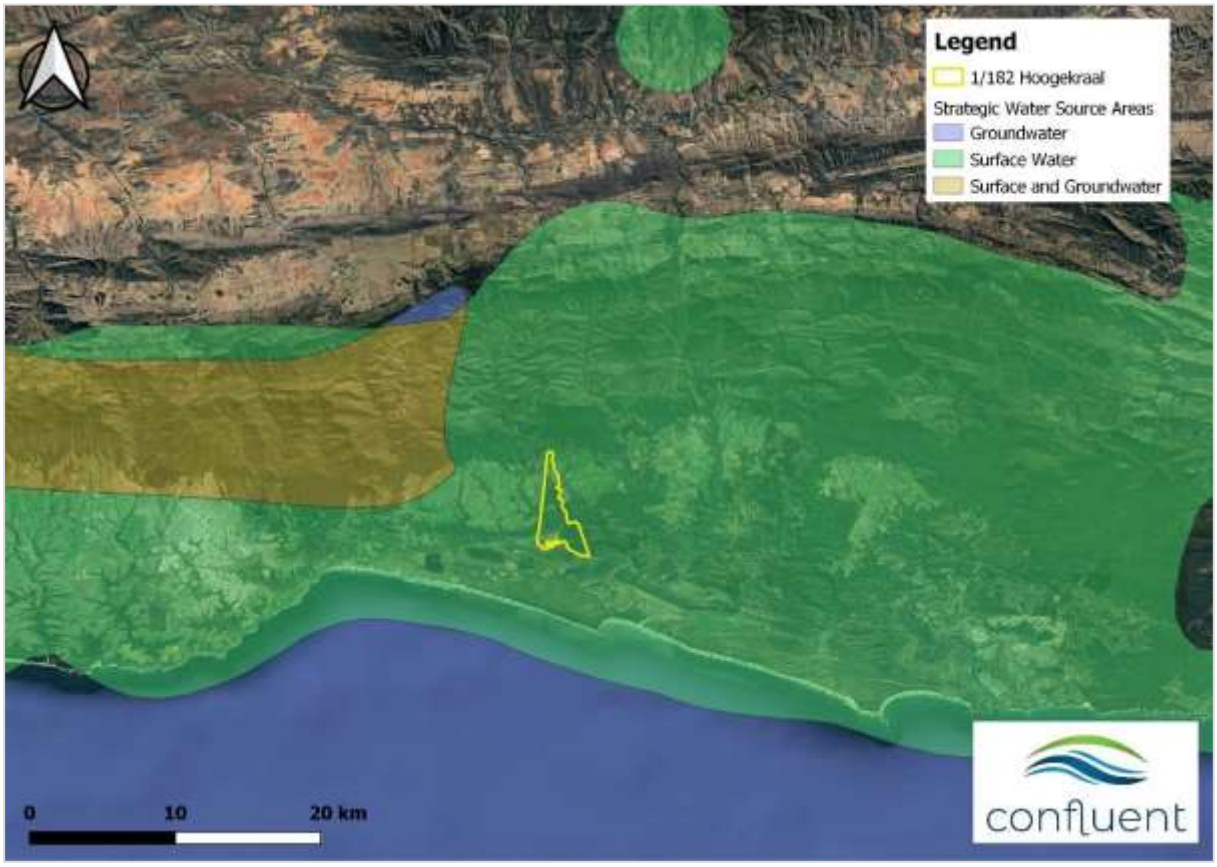


Figure 27: Strategic Water Source Areas (Confluent, 2021)

An Aquatic Compliance Statement was undertaken for this development.

Confluent Environmental concluded as follows:

- As the site of the proposed off-stream dam is not physically located within any part of a watercourse, it cannot have any impact on the quantity or quality of water flowing from the SWSA. As this was the basis of the Very High aquatic biodiversity finding in the screening tool, it is concluded that the site-specific assessment does not support this finding. Aquatic biodiversity and sensitivity within the footprint of the dam is Very Low and no further aquatic studies would be recommended for construction of the off-stream dam. The only regulated area of a watercourse potentially affected by the proposed development is the wetland, as it is located within 500m of the development footprint.

A full copy of the report is included as Appendix E of this report.

5.6 AGRICULTURE

The property is zoned as Agriculture Zone I and has been actively utilise for crop production, animal production and pine plantations for many decades.

The original farm, measuring 4830 morgen 220 square roods (± 4,160 ha) and situated within the fieldcornetcy of The Lakes, Division George was surveyed during 19081. However, the farm clearly existed well before this date as confirmed through inter alia early (1880) SG mapping of the area.

From broader archival research it is known that early (colonial) occupation of this landscape occurred well before formal surveying of the original farm Hoogekraal in 1908 as early lands grants date back to as early as the late 18th century. Taken in conjunction with available primary archival sources (e.g. 1908, 908 diagrams) and more recent historic aerial imagery it is therefore evident that the farm, and more specifically farmlands along the valley east of Rondevlei hamlet, form part of a rural landscape that has been subject to transformation through agriculture/ cultivation over an extended period of time. This pattern of land use continues to present day.

5.7 SOCIO ECONOMIC CONTEXT

The area is characterised by large scale commercial agriculture, agricultural uses, small holding lifestyle uses, the Swartvlei. Garden Route National Park and tourism related land uses and education/recreation areas.

The area is also characterised by tourism related land uses. These include a large proliferation of accommodation establishments, including the 'Knysna Hollow', 'Tonquani Lodge', and 'Badger's Lodge'.

Western Cape Provincial SDF (2014)

The Western Cape Provincial SDF was approved in 2014 by the Western Cape Parliament and serves as a strategic spatial planning tool that "communicates the provinces spatial planning agenda"

The PSDF puts in place a coherent framework for the Province's urban and rural areas that:

- Gives spatial expression to National and provincial development agendas.
- Serves as basis for coordinated and integrated planning alignment on National and Provincial Departmental Programmes.
- Supports municipalities to fulfil their mandates in line with national and provincial Agendas.
- Communicates government's spatial development agenda.

The Western Cape Province's Strategic objectives include:

- **Educating Cape:** Everyone has access to a good education, and the cities, towns and rural villages are places of innovation and learning
- **Working Cape:** There are livelihood prospects available to urban and rural residents, and opportunities for them to find employment and develop enterprises in these markets.
- **Green Cape:** All households can access basic services that are delivered resource efficiently, residents use land and finite resources prudently, and safeguard their ecosystems.
- **Connecting Cape:** Urban and rural communities are inclusive, integrated, connected and collaborate.
- **Living Cape:** Living and working environments are healthy, safe, enabling and accessible, and all have access to the region's unique lifestyle offering.
- **Leading Cape:** Urban and rural areas are effectively managed.
- **Resources:** Sustainable use of Spatial Assets and Resources
- **Space Economy:** Opening up opportunities in the Space Economy
- **Settlement:** Developing Integrated and Sustainable Settlements

The Western Cape's agenda for spatial transformation and improved efficiencies in the use of natural resources are closely linked. The PSDF states that the paradigm that economic growth implies the on-going depletion of the Province's natural capital needs to be broken. This is the rationale for the PSDF embracing a transition to a Green Economy. The so-called 'decoupling' of economic growth strived for, requires reductions/substitutions and/or replacements in the use of limited resources, while avoiding negative environmental impacts.

The recent shift in legislative and policy frameworks have clearly outlined the roles and responsibility of provincial and municipal spatial planning and should be integrated towards the overall spatial structuring plan for the province to create and preserve the resources of the province more effectively through sustainable urban environments for future generations. This shift in spatial planning meant that provincial inputs are in general limited to provincial scale planning.

The proposed development compliments the SDF's spatial goals that aim to take the Western Cape on a path towards:

i Greater productivity, competitiveness and opportunities within the spatial economy;

ii More inclusive development and strengthening the economy in rural areas;

iii Strengthening resilience and sustainable development.

Knysna Spatial Development Framework (2017)

The spatial vision for the considered SDF for Knysna Municipality is to establish an authentic place that works for its residents and continues to attract visitors. Equitable and inclusive access to spatial justice (improving access to opportunities, services and amenities) improving economic opportunities.

Invest in Smart Growth Settlements

To achieve the objectives of SPLUMA and align with regional planning policy frameworks, the establishment of a network of "complete towns and villages" is proposed. Each should have a strong and unique identity, retain and enhance the Knysna coast and forest character and feature:

- Balanced land use
- Densification
- Economic opportunity
- Accessibility
- A high-quality public environment
- Effective and sustainable social services

Knysna Integrated Development Plan (2017–2022)

The IDP is the planning instrument that drives the process to address the socio-economic challenges as well as the service delivery and infrastructure backlogs experienced by communities in the municipality's area of jurisdiction.

Knysna Municipality approved the 4th generation IDP during June 2017. According to this IDP, the municipality's vision is to:

- Encourage all members of society to participate in and support the municipal governance structure and to create opportunities for dialogue.
- Conserving and managing natural resources.
- Planning for the growth and development of quality municipal services to support the community.
- Creating an enabling environment to foster the development of our people and enabling them to contribute.
- Supporting and encouraging the development of investment, business and tourism and emerging industries.

The Knysna IDP identified seven Strategic Objectives that are aligned to the national strategic focus areas as well as the Provincial Strategic Goals of the Western Cape Government. These objectives applicable to the proposed development are:

STRATEGIC OBJECTIVE
▪ To create an enabling environment for social development and economic growth.
▪ To grow the revenue base of the municipality

The subject property is located in Ward 2 of the Knysna Municipality.

The issues raised in the community for Ward 2 and the weaknesses which were identified that apply to the proposed development is as follows:

- Implementation of an effective programme for the eradication of alien vegetation;
- Limited employment and business opportunities causes ambitious youth to leave the area.

6. IMPACT ASSESSMENT

According to the DFFE Screening Tool and the required specialist studies, the impacts of the dam on the identified area are none to very low and no typical impact assessment was undertaken.

The following specialists provided reports:

- Aquatic Compliance Statement (Confluent Environmental (Pty) Ltd, 2021) ;
- Terrestrial Biodiversity Compliance Statement (Chepri, 2021); and
- Heritage Notice of Intent to Develop (Perception Planning, 2021)

The findings will firstly be discussed per specialist discipline and then summarised in the impact summary and statement below[4].

6.1 ASSESSMENT METHODOLOGY

All possible impacts need to the assessed – the **direct, in-direct as well as cumulative impacts**. Impact criteria should include the following:

- **Nature of the impact:** impacts associated with the proposed development have been described in terms of whether they are negative or positive and to what extent.
- **Duration of impacts: Impact were assessed in terms of their anticipated duration:**
    - Short term (e.g. during the construction phase)
    - Medium term (e.g. during part or all of the operational phase)
    - Permanent (e.g. where the impact is for all intents and purposes irreversible)
    - Discontinuous or intermittent (e.g. where the impact may only occur during specific climatic conditions or during a particular season of the year)
- **Intensity or magnitude: The size of the impact (if positive) or its severity (if negative):**
    - Low, where the receiving environment (biophysical, social, economic, cultural etc) is negligibly affected or where the impact is so low that the remedial action is not required;
    - Medium, where the receiving environment (biophysical, social, economic, cultural etc) is altered, but not severely affected, and the impact can be remedied successfully; and
    - High, where the receiving environment (biophysical, social, economic, cultural etc) would be substantially (i.e. to a very large degree) affected. If a negative impact, could lead to irreplaceable loss of a resource and/or unacceptable consequences for human wellbeing.
- **Probability: Should describe the likelihood of the impact actually occurring indicated as:**
    - Improbable, where the possibility of the impact is very low either because of design or historic experience;
    - Probable, where there is a distinct possibility that the impact will occur;
    - Highly probable, where it is most likely that the impact will occur; or
    - Definite, where the impact will occur regardless of any prevention measures.
- **Significance: The significance of impacts can be determined through a synthesis of the assessment criteria. Significance can be described as:**
    - Low, where it would have negligible effect on the receiving environment (biophysical, social, economic, cultural etc), and on the decision;

[4] The assessment tables reflected in this section are those of the preferred site alternative.

- Medium, where it would have a moderate effect on the receiving environment (biophysical, social, economic, cultural etc), and should influence the decision;
- High, where it would have, or there would be a high risk of, a large effect on the receiving environment (biophysical, social, economic, cultural etc). These impacts should have a major influence on the decision;
- Very high, where it would have, or there would be a high risk of, an irreversible negative impact on the receiving environment (biophysical, social, economic, cultural etc) and irreplaceable loss of natural capital/resources or a major positive effect on human well-being. Impacts of very high significance should be a central factor in decision-making.
- Provision should be made for with and without mitigation scenarios.

- **Confidence: The level of confidence in predicting the impact can be described as:**
  - Low, where there is little confidence in the prediction, due to inherent uncertainty about the likely response of the receiving ecosystem, or inadequate information;
  - Medium, where there is a moderate level of confidence in the prediction, or
  - High, where the impact can be predicted with a high level of confidence
- **Consequence**: **What will happen if the impact occurs**
  - Insignificant, where the potential consequence of an identified impact will not cause detrimental impact to the receiving environment;
  - Significant, where the potential consequence of an identified impact will cause detrimental impact to the receiving environment.
  - Provision must be made for with and without mitigation scenarios.

The impacts should also be assessed in terms of the following aspects:

- **Status of the impact**

  The specialist should determine whether the impacts are negative, positive or neutral ("cost – benefit" analysis). The impacts are to be assessed in terms of their effect on the project and the environment. For example, an impact that is positive for the proposed development may be negative for the environment. It is important that this distinction is made in the analysis.

- **Cumulative impact**

  Consideration must be given to the extent of any accumulative impact that may occur due to the proposed development. Such impacts must be evaluated with an assessment of similar developments planned and already in the environment. Such impacts will be either positive or negative, and will be graded as being of negligible, low, medium or high impact.

  Care must be taken to ensure that where cumulative impacts can occur that these impacts are considered and categorised as **additive** (incremental or accumulative); **interactive**, **sequential** or **synergistic**.

Based on a synthesis of the information contained in the above-described procedure, the specialists assessed the potential impacts in terms of the following significance criteria:

- **No significance**: The impacts do not influence the proposed development and/or environment in any way.
- **Low significance**: The impacts will have a minor influence on the proposed development and/or environment. These impacts require some attention to modification of the project design where possible, or alternative mitigation.
- **Moderate significance**: The impacts will have a moderate influence on the proposed development and/or environment. The impact can be ameliorated by a modification in the project design or implementation of effective mitigation measures.
- **High significance**: The impacts will have a major influence on the proposed development and/or environment.

6.2 IDENTIFICATION OF IMPACTS

This section simply identifies the potential key impacts associated with the listed activity triggering this Environmental Impact Assessment (EIA) process. The activity relates to the **construction of an off-stream dam of ± 106 000m³ with a wall height of less than 5m and covering an area of ±3ha**.

The property and study area according to the Biodiversity Spatial Plan is mapped as sensitive for having Vulnerable Garden Route Shale Fynbos, and adjacent protected areas to be conserved. The site area for the dam has been extensively utilised for agricultural activities for many decades and is completely transformed.

According to the specialists (aquatic, terrestrial biodiversity / botanical and heritage), the construction of the dam in this area will not have any negative impacts on the environment.

6.2.1 Aquatic Biodiversity Compliance Statement

As the site of the proposed off-stream dam is not physically located within any part of a watercourse, it cannot have any impact on the quantity or quality of water flowing from the SWSA. As this was the basis of the Very High aquatic biodiversity finding in the screening tool, it is concluded that the site-specific assessment does not support this finding. Aquatic biodiversity and sensitivity within the footprint of the dam is Very Low and no further aquatic studies would be recommended for construction of the off-stream dam.

The abstraction of water from the Diep (Wolwe) River to sustain the dam must be assessed according to the National Water Act to ensure that water abstracted does not compromise the quantity and quality of water in terms of the Ecological Reserve for both the river itself, and the Swartvlei Estuary. This type of information should be incorporated in the application for a Water Use License (WUL) which is currently in progress by the applicant. The recently determined Resource Quality Objectives (RQOs) for Swartvlei Estuary (quaternary catchment K40D) acknowledge that demands for freshwater supply will increase, but that these should be carefully managed to ensure that the estuary remains in a 'B' ecological category (DWS, 2018; Appendix 1). Should groundwater abstraction from a borehole be a consideration, then the RQOs for groundwater will also need to be considered.

While not the direct subject of this assessment, it is recommended that all recently converted fields (from pasture to Macadamia nut trees) include a naturally vegetated buffer of at least 15 m from the edge of Swartvlei Lake to protect water quality from agricultural land use.

Although recently planted Macadamia trees are within the footprint of historical fields, these did not historically include an adequate riparian buffer to protect Swartvlei Lake. This is current best practice.

6.2.2 Terrestrial Biodiversity Compliance Statement

From a terrestrial biodiversity perspective, there are no identified constraints for the proposed development of the dam as shown in the layout provided (Figure 1), assuming that all standard construction and subsequent operational environmental health and safety guidelines be strictly followed. Because the site lies within a FEPA River Corridor (WCBSP, 2017) and is a sub-catchment or upstream management area (NFEPA, 2011) [4], important for the downstream FEPA (Swartvlei Estuary), it is important that the proposed dam be built accordingly as to maintain the ecosystem integrity of the FEPA. The site in and around the proposed dam construction area is completely transformed and if the dam is constructed according to criteria that will ensure that it does not negatively impact downstream ecological processes then the dam will not put any further pressure on ecosystem than already exist. The location of the proposed site and its surrounding landuse lends itself to this type of development.

The proposed activity has the potential to contribute to biodiversity restoration on a small scale around the edges of the dam and it is highly recommended that the natural vegetation be allowed to regenerate or assisted with regeneration through revegetation or seeding after the completion of the dam. The highly sensitive areas around the dam should not be impacted by the dam construction activities.

6.2.3 Heritage

The original farm, measuring 4830 morgen 220 square roods (± 4,160 ha) and situated within the fieldcornetcy of The Lakes, Division George was surveyed during 19081. However, the farm clearly existed well before this date as confirmed through inter alia early (1880) SG mapping of the area.

While unfortunately, the 1908 survey diagram does not allude to initial ownership associated with the quitrent grant it does highlight the location of a farmstead and at least three rectangular outbuildings to its western flank. The siting and orientation of these buildings correspond with that of the historic farmstead and two remaining historic outbuildings mentioned in Section 2 of this report. The diagram denotes forested areas along steeper slopes and higher-lying river tributaries as well as several tracks – notably along the northern banks of Swartvlei as well as a single road leading northward toward the higher-lying plateau.

An unreferenced secondary source suggests that the farm Hoogekraal was owned by Georg Sebastian Gericke during the period 1810-1884 (Sedgefield History Tree, 2021). Confirmation of the ownership timeline would however have to be confirmed through a deed search in the Cape Town Deeds Office (not readily accessible at present due to continued covid-19 related restrictions). A year after the 1908 survey the farm was subdivided and transferred to the "Estate of late Alfred G Robertson" thereby effectively creating portion one of the farm Hoogekraal 182 as it exists in its present form. As with the previous survey, the 1909 diagram (not shown here due to similarity to 1908 survey image) also records the location of the farmstead and associated historic outbuildings.

Basic historical background research did not identify or highlight significant heritage-related aspects or themes pertaining to the farm that would be impacted negatively through construction of the proposed off stream dam. While it is likely that detailed archival research would provide further insights into former use and/or understanding of heritage-related themes pertaining to the property such research is not considered necessary for the purposes of the current proposal.

Having regard to the above assessment it is our view that the proposed construction of an off-stream dam would not negatively impact on heritage resources of cultural significance, and it is therefore recommended that no future heritage-related studies be required in this instance. A protocol for potential palaeontological finds should however be included.

6.3 SITE SENSITIVITY CONSTRAINTS AND POTENTIAL RISKS & IMPACTS

The following spatial site-specific constraints were identified by various specialists and the EAP during the initial stage of the environmental process.

Table 7: Summary of potential site

Specialist Discipline	Site Constraints
Aquatic	None
Terrestrial Biodiversity	None
Botanical	None
Fauna	None
Heritage	None

All high and very-high sensitive features were avoided and excluded from the preferred layout. The specialist did not identify any impacts that could be considered as significant, and some recommendations have been made in terms of Best Practise Principles (See section 7 for detailed mitigation measures).

6.4 AQUATIC IMPACTS

An Aquatic Compliance Statement was undertaken by Confluent Environmental (Pty) Ltd in response to the sensitivity rating provided in the DFFE Screening Tool. A copy of this report is attached in **Annexure E1.** The following concluding statement was provided by the specialist:

As the site of the proposed off-stream dam is not physically located within any part of a watercourse, it cannot have any impact on the quantity or quality of water flowing from the SWSA. As this was the basis of the Very High aquatic biodiversity finding in the screening tool, it is concluded that the site-specific assessment does not support this finding. Aquatic biodiversity and sensitivity within the footprint of the dam is Very Low and no further aquatic studies would be recommended for construction of the off-stream dam.

The abstraction of water from the Diep (Wolwe) River to sustain the dam must be assessed according to the National Water Act to ensure that water abstracted does not compromise the quantity and quality of water in terms of the Ecological Reserve for both the river itself, and the Swartvlei Estuary. This type of information should be incorporated in the application for a Water Use License (WUL) which is currently in progress by the applicant. The recently determined Resource Quality Objectives (RQOs) for Swartvlei Estuary (quaternary catchment K40D) acknowledge that demands for freshwater supply will increase, but that these should be carefully managed to ensure that the estuary remains in a 'B' ecological category (DWS, 2018; Appendix 1). Should groundwater abstraction from a borehole be a consideration, then the RQOs for groundwater will also need to be considered.

While not the direct subject of this assessment, it is recommended that all recently converted fields (from pasture to Macadamia nut trees) include a naturally vegetated buffer of at least 15 m from the edge of Swartvlei Lake to protect water quality from agricultural land use.

Although recently planted Macadamia trees are within the footprint of historical fields, these did not historically include an adequate riparian buffer to protect Swartvlei Lake. This is current best practice.

6.5 TERRESTRIAL BIODIVERSITY IMPACTS

A Terrestrial Biodiversity Compliance Statement (encompassing Terrestrial Fauna and Botany) was undertaken by Chepri. A copy of this assessment is attached in **Annexure E3.** The following concluding statement was provided by the specialist:

From a terrestrial biodiversity perspective, there are no identified constraints for the proposed development of the dam as shown in the layout provided, assuming that all standard construction and subsequent operational environmental health and safety guidelines be strictly followed. Because the site lies within a FEPA River Corridor (WCBSP, 2017) and is a sub-catchment or upstream management area (NFEPA, 2011) [4], important for the downstream FEPA (Swartvlei Estuary), it is important that the proposed dam be built accordingly as to maintain the ecosystem integrity of the FEPA. The site in and around the proposed dam construction area is completely transformed and if the dam is constructed according to criteria that will ensure that it does not negatively impact downstream ecological processes then the dam will not put any further pressure on ecosystem than already exist. The location of the proposed site and its surrounding landuse lends itself to this type of development.

The proposed activity has the potential to contribute to biodiversity restoration on a small scale around the edges of the dam and it is highly recommended that the natural vegetation be allowed to regenerate or assisted with regeneration through revegetation or seeding after the completion of the dam. The highly sensitive areas around the dam should not be impacted by the dam construction activities.

6.6 HERITAGE IMPACTS

A Notice of Intent to Develop (NID) was compiled by Perception Planning and submitted to Heritage Western Cape (HWC). A copy of this document is included as **Annexure E2** and is summarised below.

The following concluding statement was provided by the specialist:

Basic historical background research did not identify or highlight significant heritage-related aspects or themes pertaining to the farm that would be impacted negatively through construction of the proposed off stream dam. While it is likely that detailed archival research would provide further insights into former use and/or understanding of heritage-related themes pertaining to the property such research is not considered necessary for the purposes of the current proposal.

Having regard to the above assessment it is our view that the proposed construction of an off-stream dam would not negatively impact on heritage resources of cultural significance, and it is therefore

recommended that no future heritage-related studies be required in this instance. A protocol for potential palaeontological finds should however be included.

6.7 ASSESSMENT OF SIGNIFICANCE OF IMPACTS

Impacts are grouped into planning, design & construction, operation, decommissioning and any other impacts. The tables have been colour coded for ease of reference.

(a) **Impacts that resulted from the planning, design and construction phases (briefly describe and compare the impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that occurred as a result of the planning, design and construction phases.**

Impacts on geographical and physical aspects:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	Impacts on natural environment such as slopes, watercourses and indigenous vegetation.	None
Extent and duration of impact:	Site specific	None
Probability of occurrence:	Unlikely	None
Degree to which the impact can be reversed:	High	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	Negligible	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	High	None
Proposed mitigation:	Adhere to the site selection to avoid any sensitive areas.	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Impact on biological aspects:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	Impacts on biological processes and patterns.	None

Extent and duration of impact:	Site specific	None
Probability of occurrence:	Unlikely	None
Degree to which the impact can be reversed:	High	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	Negligible	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	High	None
Proposed mitigation:	Adhere to the site selection to avoid any sensitive areas.	- None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Impacts on socio-economic aspects:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	None	None
Extent and duration of impact:	None	None
Probability of occurrence:	None	None
Degree to which the impact can be reversed:	None	None

Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Impacts on cultural-historical aspects:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	None	None
Extent and duration of impact:	None	None
Probability of occurrence:	None	None
Degree to which the impact can be reversed:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	None	None

Proposed mitigation:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Noise impacts:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	Construction noise during construction	None
Extent and duration of impact:	Site specific, temporary	None
Probability of occurrence:	Negligible	None
Degree to which the impact can be reversed:	High	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Negligible	None
Degree to which the impact can be mitigated:	High	None
Proposed mitigation:	The isolation of the site and the normal level of noise associated with the farming operation means that there are no noise mitigations proposed.	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Visual impacts / Sense of Place:	Alternative 1 (Preferred)	No Go Option
Nature of impact:	Possible visual disturbance during construction.	None
Extent and duration of impact:	Site specific, temporary	None
Probability of occurrence:	Likely	None
Degree to which the impact can be reversed:	Low	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	Visual disturbance will not be applicable once the dam is complete and has water in it.	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Negligible	None

(b) **Impacts that result from the operational phase (briefly describe and compare impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the operational phase.**

Impacts on geographical and physical aspects:	Alternative 1 (Preferred)	No Go Option
Nature of impact:	None	None
Extent and duration of impact:	None	None

Probability of occurrence:	None	None
Degree to which the impact can be reversed:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Impact on biological aspects::	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	None	None
Extent and duration of impact:	None	None
Probability of occurrence:	None	None
Degree to which the impact can be reversed:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None

Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Impacts on the socio-economic aspects:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	Additional employment opportunities and economic security for the agricultural business	None
Extent and duration of impact:	Regional, long term	None
Probability of occurrence:	Highly probable	None
Degree to which the impact can be reversed:	Impact is positive	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	Medium	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High positive	None
Degree to which the impact can be mitigated:	None	None

Proposed mitigation:	Implement environmental mitigation to improve overall ratings.	None
Cumulative impact post mitigation:	High positive	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium positive	None

Impacts on the cultural-historical aspects:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	None	None
Extent and duration of impact:	None	None
Probability of occurrence:	None	None
Degree to which the impact can be reversed:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Noise impacts:	Alternative 1 (Preferred)	No Go Option
Nature of impact:	Noise impacts related to machinery on site for maintenance.	None
Extent and duration of impact:	Site specific, Short Term	None
Probability of occurrence:	Highly improbable	None
Degree to which the impact can be reversed:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Unlikely	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Visual impacts / Sense of Place:	Alternative 1 (Preferred)	No Go Option
Nature of impact:	None	None
Extent and duration of impact:	None	None
Probability of occurrence:	None	None

Degree to which the impact can be reversed:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

(c) Impacts that may result from the decommissioning and closure phase (briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase.

Farming, and in particular crop farming is a long term projected use of the property Thus in terms of decommissioning, it is not possible to foresee the closure of the facility in the near future. The requirements for closure must comply with any legislative mechanisms in place at the time of closure as a minimum.

Potential impacts on the geographical and physical aspects:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	None	None
Extent and duration of impact:	None	None
Probability of occurrence:	None	None

Degree to which the impact can be reversed:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Potential impact on biological aspects:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	None	None
Extent and duration of impact:	None	None
Probability of occurrence:	None	None
Degree to which the impact can be reversed:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Potential impacts on the socio-economic aspects:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	None	None
Extent and duration of impact:	None	None
Probability of occurrence:	None	None
Degree to which the impact can be reversed:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Cumulative impact post mitigation:	None	None

Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Potential impacts on the cultural-historical aspects:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	None	None
Extent and duration of impact:	None	None
Probability of occurrence:	None	None
Degree to which the impact can be reversed:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Potential noise impacts:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	None	None
Extent and duration of impact:	None	None

Probability of occurrence:	None	None
Degree to which the impact can be reversed:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

Potential visual impacts:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	None	None
Extent and duration of impact:	None	None
Probability of occurrence:	None	None
Degree to which the impact can be reversed:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None

Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None
Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

(d) Any other impacts:

Potential impact:	**Alternative 1 (Preferred)**	**No Go Option**
Nature of impact:	None	None
Extent and duration of impact:	None	None
Probability of occurrence:	None	None
Degree to which the impact can be reversed:	None	None
Degree to which the impact may cause irreplaceable loss of resources:	None	None
Cumulative impact prior to mitigation:	None	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None
Degree to which the impact can be mitigated:	None	None
Proposed mitigation:	None	None

Cumulative impact post mitigation:	None	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None	None

6.8 IMPACT SUMMARY

The table below summarises the significance (with mitigation) of all impacts assessed in the sections above[5].

For ease of easy references, impacts are visually reflected using the following colour scheme[6].

All positive impacts (regardless of their significance)

Neutral or Negligible negative impacts

Very Low and Low negative impacts

Medium negative impacts

Medium – High, High and Very High negative impacts

Table 8: Summary of the significance of impacts[7].

Impact	Significance (with mitigation)
Aquatic Impacts	
Loss and/or fragmentation of indigenous natural vegetation due to clearing	Very Low
Terrestrial Biodiversity Impacts	
Loss and/or fragmentation of indigenous natural vegetation due to clearing	None
Heritage Impacts	
Loss of heritage resources	None

The specialists have determined that the negative impacts are either not anticipated or only Very Low. There are no high or very high impacts associated with the proposed development.

6.9 IMPACT STATEMENT

None of the participating specialists identified any impacts that would be considered high after mitigation. Because of the risk adverse approach followed for the development of the preferred layout, all the main sensitive features, (most notably steep lopes and sensitive areas) were avoided.

The affected area is considered suitable for development and there are no impacts associated with the activity that rate higher than Very Low. Mitigation measures proposed are Best Practise which will aid in the overall management of the property achieving some conservation outcomes. There are no fatal flaws or high post-mitigation impacts that should prevent the development from proceeding. .

As required by the EMPr, all areas outside of the proposed development footprint, as identified in the Site Development Plan (SDP) presented by Confluent Environmental should be no go areas and efforts should be implemented to ensure that the proposed 15m buffer of indigenous vegetation along the Swartvlei is implemented on the site.. The implementation of the Alien Invasive Vegetation Control Plan must be ongoing.

7. MITIGATION MEASURES

Please refer to the table below, which summarises the mitigation measures recommended by both the Specialists and Cape EAPrac, in terms of Best Practise. This table summarises the mitigations, and details whether they should be included as conditions of approval, or whether they have been included as actions in the EMPr. The table furthermore reflects to which stage of the development the proposed mitigation measures are applicable. In instances where suggested mitigations have already been incorporated into the design phase, they have been reflected as such.

[5] In order to attain these outcomes, the mitigation measures reflected in section 7 of the report need to be implemented.

[6] Where specialist ratings fall across 2 of the groups, the worst case is reflected in the quick reference.

[7] This includes cumulative impacts associated with the development

Table 9: Recommended mitigation measures required for the construction, operation and decommissioning

Mitigation	Condition of Approval	Included in EMPr	Construction Phase	Operational Phase	Decomissioning Phase
Aquatic & Terrestrial Ecology					
All Invasive Alien Plant species must be controlled as new and re-emerging plants continue to appear or spread. Continue with the implementation of an Alien Invasive Control Plan.	✓	✓	✓	✓	
Construction and operational management of the development must ensure that no encroachment by agriculture or edge effects impacts upon the remaining undisturbed natural areas, as identified in the Confluent SDP.		✓	✓	✓	
Undertake regular monitoring to detect erosion features early so that they can be controlled.		✓	✓		
Implement the 15m vegetated buffer along the Swartvlei.	✓	✓	✓	✓	
Excavation and earthworks proposed to be conducted for the dam must remain within the development footprint, and be demarcated from the remaining natural area. No materials may be excavated from any areas identifed as natural in the Confluent SDP. Exposed surfaces and slopes may be covered with stack pile mulch and debris, hessian cloth and / or "sausage rolls" to prevent loss of soil by natural wind and water erosion during construction.		✓	✓		
Dust management during construction		✓	✓		
Access to sensitive areas outside of development footprint should not be permitted during construction.		✓	✓		
Undertake regular monitoring to detect alien invasions early so that they can be controlled.		✓	✓	✓	
Proper waste management must be implemented, ensuring no toxic or dangerous substances are accessible to wildlife. This should also apply to stockpiles of new and used materials to ensure that they do not become a hazard.		✓	✓		

8. MONITORING & AUDITING REQUIREMENTS

Monitoring is an important tool in determining the effectiveness of management actions by measuring changes in the environment. These could be in the form of fixed point photography where an area is photographed on a regular / seasonal basis to ascertain changes, monitoring of a particular aspect such as water quality parameters, recordings of animal movement from fixed point etc. The most important aspect of any monitoring programme is **consistency and continuity**. This will ensure a level of scientific accuracy to determine baselines / thresholds and measure changes / deviations, which then drive management reactions.

Any required monitoring reports must be made available to the competent authority as required.

The type and frequency of monitoring must include:

- During construction photographs must be taken from pre identified fixed points and a comprehensive record maintained;
- Incident Reports.

8.1 MONITORING TIMEFRAMES SUMMARY

Table 10: Monitoring Timeframe Summary

MONITORING TIMEFRAMES		
Type	Frequency	Criteria
Management team record keeping	Monthly	Site photographs, method statements
	6 month post construction	Completion Statement
Auditing	One year post construction	Compliance with the EA, EMPr, municipal permits, DAFF requirements and any other approvals

8.2 ENVIRONMENTAL AUDITS

A final construction phase Completion Statement must be submitted within 6 months of completion of the dam. This Completion Statement must include the monitoring results as above, where applicable to construction.

An Environmental Audit should be undertaken one (1) year post construction.

8.3 AUDIT REPORTS FREQUENCIES AND FORMAT

The table below provides a summary of the timeframes for the various Audit Reports specified in the EA.

Table 11: Audit Reports Timeframe Summary

ENVIRONMENTAL AUDIT TIMEFRAMES		
Type	Frequency	Criteria
Final Construction Audit	One year post construction	Audit on operational aspects of the EA and EMPr

In terms of the 2014 EIA Regulations, Audit Reports must be submitted to the registered Interested & Affected Parties within 7 days of submission to the competent authority.

In order to comply with the 2014 EIA Regulations, any audits must be undertaken using the following format:

Table 12: Environmental Audit Requirements

Appendix 7 of Regulation 326 of the 2014 EIA Regulations, as amended contains the required contents of an Environmental Audit Report. The checklist below serves as a summary of how these objectives & requirements were incorporated into this Audit Report.	
Objective	**Description**
The objective of the environmental audit report is to -	
(a) Report on – (i) the level of compliance with the conditions of the environmental authorisation and the EMPr, and where applicable, the closure plan; and	

Appendix 7 of Regulation 326 of the 2014 EIA Regulations, as amended contains the required contents of an Environmental Audit Report. The checklist below serves as a summary of how these objectives & requirements were incorporated into this Audit Report.	
Objective	**Description**
(ii) the extent to which the avoidance, management and mitigation measures provided for in the EMPr, and where applicable, the closure plan achieve the objectives and outcomes of the EMPr, and closure plan.	
(b) Identify and assess any new impacts and risks as a result of undertaking the activity.	
(c) Evaluate the effectiveness of the EMPr, and where applicable, the closure plan.	
(d) Identify shortcomings in the EMPr, and where applicable, the closure plan.	
(e) Identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr, and where applicable, the closure plan.	
Requirement	**Description**
(1) An Environmental audit report prepared in terms of these Regulations must contain -	
(a) Details of – (i) The independent person who prepared the environmental audit report; and (ii) The expertise of independent person that compiled the environmental audit report.	
(b) A declaration that the independent auditor is independent in a form as may be specified by the competent authority.	
(c) An indication of the scope of, and the purpose for which, the environmental audit report was prepared.	
(d) A description of the methodology adopted in preparing the environmental audit report.	
(e) An indication of the ability of the EMPr, and where applicable the closure plan to – (i) Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an on-going basis; (ii) Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the closure of the facility; and	

Appendix 7 of Regulation 326 of the 2014 EIA Regulations, as amended contains the required contents of an Environmental Audit Report. The checklist below serves as a summary of how these objectives & requirements were incorporated into this Audit Report.	
Objective	**Description**
(iii) Ensure compliance with the provisions of environmental authorisation, EMPr, and where applicable, the closure plan.	
(f) A description of any assumptions made, and any uncertainties or gaps in knowledge.	
(g) A description of an consultation process that was undertaken during the course of carrying out the environmental audit report.	
(h) A summary and copies of any comments that were received during any consultation process.	
(i) Any other information requested by the competent authority.	

Any other requirements of the EA or any other authorisations must be incorporated into an Audit where necessary.

9. PUBLIC PARTICIPATION PROCESS

Section 41 in Chapter 6 of regulation 982 details the public participation process that has to take place as part of an environmental process. The table below provides a quick reference to show how this environmental process has or intends to comply with these legislated requirements relating to public participation.

Please refer to **Appendix F**, where all evidence of public participation is included.

Table 13: Public participation requirements in terms of S41 of R982

Regulated Requirement	**Proposed Actions**
(1) If the proponent is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorisation in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake such activity on that land. (2) Subregulation (1) does not apply in respect of-. (a) linear activities;	The landowner is the applicant therefore this item is not applicable. No deviation or additional actions in terms of regulation 660 are required.
The person conducting a public participation process must take into account any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of an application or proposed application which is subjected to public participation by -	
(a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of - (i) the site where the activity to which the application or proposed application relates is or is to be undertaken; and (ii) any alternative site;	A site notice has been placed at the boundary of the property and at the entrance to the shared access with the neighbouring property. No deviation or additional actions in terms of regulation 660 are required.
(b) giving written notice, in any of the manners provided for in section 47D of the Act, to -	
(i) the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control	The landowner is directly involved in the tourism facility on the site and there are no other tenants on the affected

Regulated Requirement	Proposed Actions
of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;	property. No deviation or additional actions in terms of regulation 660 are required.
(ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;	Owners of adjacent properties will be notified of this environmental process and will be provided with digital copies of the documents via postal or courier services (where available), if they do not have access to online platforms. Such owners have been requested to inform the occupiers of the land of this environmental process and the process to obtain copies of the relevant reports.
(iii) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;	The ward councillor will be notified of this environmental process and will be provided with a digital copy of the documentation via postal or courier services.
(iv) the municipality which has jurisdiction in the area;	The Knysna Municipality (Planning and Technical Services & Environmental) will be notified of this environmental process and will be provided with digital copies of all documentation via postal or courier service.
(v) any organ of state having jurisdiction in respect of any aspect of the activity; and	All organs of state that have jurisdiction in respect of the activity will be notified of this environmental process and will be provided with digital copies of all documentation via postal or courier service (where available).
(vi) any other party as required by the competent authority;	DFFE will be given an opportunity to comment on the Draft BAR and EMPr. Should they identify additional parties that need to provide comment, copies of the documentation and opportunity to comment will be provided to such parties.
(c) placing an advertisement in - (i) one local newspaper; or (ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;	An advert calling for registration of I&APs will be placed in the Knysna / Plett Herald local newspaper. There is currently no official Gazette that has been published specifically for the purpose of providing public notice of applications.
(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in paragraph (c)(ii);and	Adverts will not be placed in provincial or national newspapers, as the potential impacts will not extend beyond the borders of the municipal area.
(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to - (i) illiteracy; (ii) disability; or (iii) any other disadvantage.	Notifications will include provision for alternative engagement in the event of illiteracy, disability or any other disadvantage. In such instances, Cape EAPrac will engage with such individuals in such a manner as agreed on with the competent authority. Virtual meetings / telephone calls as reasonable alternative methods of public participation will be utilised, where I&APs request such, because they are unable to utilise some of the methods provided.
(3) A notice, notice board or advertisement referred to in subregulation (2) must - (a) give details of the application or proposed application which is subjected to public participation; and (b) state - (i) whether basic assessment or S&EIR procedures are being applied to the application; (ii) the nature and location of the activity to which the application relates;	All notification and adverts will comply with this requirement. No deviation or additional actions in terms of regulation 660 are required.

Regulated Requirement	Proposed Actions
(iii) where further information on the application or proposed application can be obtained; and (iv) the manner in which and the person to whom representations in respect of the application or proposed application may be made.	
(4) A notice board referred to in subregulation (2) must - (a) be of a size at least 60cm by 42cm; and (b) display the required information in lettering and in a format as may be determined by the competent authority.	The notice board which has been placed on the site boundary will comply with this requirement.
(5) Where public participation is conducted in terms of this regulation for an application or proposed application, subregulation (2)(a), (b), (c) and (d) need not be complied with again during the additional public participation process contemplated in regulations 19(1)(b) or 23(1)(b) or the public participation process contemplated in regulation 21(2)(d), on condition that - (a) such process has been preceded by a public participation process which included compliance with subregulation (2)(a), (b), (c) and (d); and (b) written notice is given to registered interested and affected parties regarding where the - (i) revised basic assessment report or, EMPr or closure plan, as contemplated in regulation 19(1)(b); (ii) revised environmental impact report or EMPr as contemplated in regulation 23(1)(b);or (iii) environmental impact report and EMPr as contemplated in regulation 21(2)(d); may be obtained, the manner in which and the person to whom representations on these reports or plans may be made and the date on which such representations are due.	This will be complied with if final reports are produced later in the environmental process.
(6) When complying with this regulation, the person conducting the public participation process must ensure that - (a) information containing all relevant facts in respect of the application or proposed application is made available to potential interested and affected parties; and (b) participation by potential or registered interested and affected parties is facilitated in such a manner that all potential or registered interested and affected parties are provided with a reasonable opportunity to comment on the application or proposed application. (7) Where an environmental authorisation is required in terms of these Regulations and an authorisation, permit or licence is required in terms of a specific environmental management Act, the public participation process contemplated in this Chapter may be combined with any public participation processes prescribed in terms of a specific environmental management Act, on condition that all relevant authorities agree to such combination of processes.	All reports that are submitted to the competent authority will be subject to a public participation process. These include: - Draft BAR - Draft EMPr - All specialist reports that form part of this environmental process.

9.1 REGISTRATION OF KEY STAKEHOLDERS

A number of key stakeholders were automatically registered and are being given an opportunity to comment on the Draft BAR. Copies and proof of these notifications are included in **Annexure F4**. A list of key stakeholders registered for this process included in the table below.

Table 14: Key Stakeholders automatically registered as part of the Environmental Process

Stakeholders Registered		
Neighbouring property owners	Department of Environmental Affairs and Development Planning (DEA&DP)	Breede Gouritz Catchment Management Agency (BGCMA)
All parties registered	Knysna Municipality: Municipal Manager	Heritage Western Cape
Knysna Ward 2 Councillor	SANParks	WC Department of Agriculture

9.1 SUMMARY OF PUBLIC PARTICIPATION PROCESS

The draft BAR will be circulated for a period of 30 days to registered I&APs, identified authorities and neighbouring property owners. The list of stakeholders is included as Appendix F1. Copies of the comments received will be included in the Comments & Responses Report, and summarised in this document.

10. CONCLUSION AND RECOMMENDATIONS

This environmental process presents the development proposal to the public and potential I&APs and identifies and assesses environmental impacts, issues and concerns raised as a result of the proposed development alternatives. The preferred Alternative 1 will result in no to very low environmental impacts and supports the development of agriculture on the property and in the area.

Cape EAPrac is of the opinion that the information contained in this Basic Assessment Report and the documentation attached hereto is sufficient to allow the I&APs and the competent authority to apply their minds to the potential negative and/or positive impacts associated with the development, in respect of the activities applied for. This environmental process has not identified any fatal flaws with the proposal and as such it is our reasoned view that the project can be considered for Environmental Authorisation. All specialists concur that the development as proposed (Alternative 1 (preferred)) can be considered for approval and that there are no reasons why the development should not be implemented. All impacts range from low to negligible and all high and medium - high negative impacts have been avoided by the risk adverse approach to the development of this facility.

All stakeholders are being requested to review the Draft BAR and the associated appendices, and provide comment, or raise issues of concern, directly to *Cape EAPrac* within the specified 30-day comment period. All comments received during this comment period will be included in the Final BAR submitted to DFFE for decision making.

It is the recommendation of this office that the development proposal, Alternative 1 (preferred)) be considered for approval by the competent Authority on condition that all other legislative approvals be obtained, and that the final EMPr be adhered to.

11. ABBREVIATIONS

AIA	Archaeological Impact Assessment
BGIS LUDS	Biodiversity Geographic Information System Land Use Decision Support
CBA	Critical Biodiversity Area
CDSM	Chief Directorate Surveys and Mapping
CEMPr	Construction Environmental Management Programme
DFFEE	Department of Forestry, Fisheries and the Environment
EAP	Environmental Impact Practitioner
EHS	Environmental, Health & Safety
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMPr	Environmental Management Programme
ESA	Ecological Support Area
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
LUDS	Land Use Decision Support
LUPO	Land Use Planning Ordinance
NEMA	National Environmental Management Act
NEMBA	National Environmental Management: Biodiversity Act
NHRA	National Heritage Resources Act
NPAES	National Protected Area Expansion Strategy
NSBA	National Spatial Biodiversity Assessment
NWA	National Water Act
PM	Post Meridiem; “Afternoon”
PSDF	Provincial Spatial Development Framework
S.A.	South Africa
SACAA / CAA	South African Civil Aviation Authority
SANBI	South Africa National Biodiversity Institute

SANS	South Africa National Standards
SDF	Spatial Development Framework