

BASIC ASSESSMENT REPORT

**THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998)
AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.**

NOVEMBER 2019

(note that this is the date of the latest template)

(For official use only)	
Pre-application Reference Number (if applicable):	
EIA Application Reference Number:	
NEAS Reference Number:	
Exemption Reference Number (if applicable):	
Date BAR received by Department:	
Date BAR received by Directorate:	
Date BAR received by Case Officer:	

GENERAL PROJECT DESCRIPTION

(This must Include an overview of the project including the Farm name/Portion/Erf number)

**THE PROPOSED DEVELOPMENT OF A NEW RETREAT AND ASSOCIATED
INFRASTRUCTURE AND MAINTENANCE MANAGEMENT PLAN ON A PORTION OF
PORTION 11 OF FARM 1674, PAARL**

APPLICATION REF NO.: 16/3/3/1/B4/12/1068/21

February 2022

Note that this is the FINAL Basic Assessment Report.

The post-application draft BAR has been subject to public review and only minor, non-substantive updates have been made to the draft, to produce a final report which includes a synopsis of the public participation process undertaken during the public review of the post-application draft BAR and some minor additional notes or points of clarity. Where changes have been made to the draft BAR, these have been underlined for ease of reference.

IMPORTANT INFORMATION TO BE READ PRIOR TO COMPLETING THIS BASIC ASSESSMENT REPORT

1. **The purpose** of this template is to provide a format for the Basic Assessment report as set out in Appendix 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) in order to ultimately obtain Environmental Authorisation.
2. The Environmental Impact Assessment ("EIA") Regulations is defined in terms of Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") hereinafter referred to as the "NEMA EIA Regulations".
3. The required information must be typed within the spaces provided in this Basic Assessment Report ("BAR"). The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided.
4. All applicable sections of this BAR must be completed.
5. Unless protected by law, all information contained in, and attached to this BAR, will become public information on receipt by the Competent Authority. If information is not submitted with this BAR due to such information being protected by law, the applicant and/or Environmental Assessment Practitioner ("EAP") must declare such non-disclosure and provide the reasons for believing that the information is protected.
6. This BAR is current as of **November 2019**. It is the responsibility of the Applicant/ EAP to ascertain whether subsequent versions of the BAR have been released by the Department. Visit this Department's website at <http://www.westerncape.gov.za/eadp> to check for the latest version of this BAR.
7. This BAR is the standard format, which must be used in all instances when preparing a BAR for Basic Assessment applications for an environmental authorisation in terms of the NEMA EIA Regulations when the Western Cape Government Department of Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority.
8. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this BAR must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this Report must be provided to the relevant Organs of State for consultation purposes, which may, if so, indicated by the Department, include providing a printed copy to a specific Organ of State.
9. This BAR must be duly dated and originally signed by the Applicant, EAP (if applicable) and Specialist(s) and must be submitted to the Department at the details provided below.
10. The Department's latest Circulars pertaining to the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must be taken into account when completing this BAR.
11. Should a water use licence application be required in terms of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"), the "One Environmental System" is applicable, specifically in terms of the synchronisation of the consideration of the application in terms of the NEMA and the NWA. Refer to this Department's Circular EADP 0028/2014: One Environmental Management System.
12. Where Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA") is triggered, a copy of Heritage Western Cape's final comment must be attached to the BAR.
13. The Screening Tool developed by the National Department of Environmental Affairs must be used to generate a screening report. Please use the Screening Tool link

<https://screening.environment.gov.za/screeningtool> to generate the Screening Tool Report. The screening tool report must be attached to this BAR.

14. Where this Department is also identified as the Licencing Authority to decide on applications under the National Environmental Management: Air Quality Act (Act No. 29 of 2004) ("NEM: AQA"), the submission of the Report must also be made as follows, for-
Waste Management Licence Applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (Tel: 021-483-2728/2705 and Fax: 021-483-4425) at the same postal address as the Cape Town Office.

Atmospheric Emissions Licence Applications, this report must also be (i.e., another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (Tel: 021 483 2888 and Fax: 021 483 4368) at the same postal address as the Cape Town Office.

DEPARTMENTAL DETAILS

<p align="center">CAPE TOWN OFFICE: REGION 1 and REGION 2</p> <p align="center">(Region 1: City of Cape Town, West Coast District) (Region 2: Cape Winelands District & Overberg District)</p>	<p align="center">GEORGE OFFICE: REGION 3</p> <p align="center">(Central Karoo District & Garden Route District)</p>
<p>BAR must be sent to the following details:</p> <p>Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1 or 2) Private Bag X 9086 Cape Town, 8000</p> <p>Registry Office 1st Floor Utilitas Building 1 Dorp Street, Cape Town</p> <p>Queries should be directed to the Directorate: Development Management (Region 1 and 2) at: Tel: (021) 483-5829 Fax (021) 483-4372</p>	<p>BAR must be sent to the following details:</p> <p>Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530</p> <p>Registry Office 4th Floor, York Park Building 93 York Street George</p> <p>Queries should be directed to the Directorate: Development Management (Region 3) at: Tel: (044) 805-8600 Fax (044) 805 8650</p>

MAPS

<p>Provide a location map (see below) as Appendix A1 to this BAR that shows the location of the proposed development and associated structures and infrastructure on the property.</p>	
<p>Locality Map:</p>	<p>The scale of the locality map must be at least 1:50 000. For linear activities or development proposals of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map. The map must indicate the following:</p> <ul style="list-style-type: none"> • an accurate indication of the project site position as well as the positions of the alternative sites, if any; • road names or numbers of all the major roads as well as the roads that provide access to the site(s) • a north arrow; • a legend; and • a linear scale. <p>For ocean based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken.</p>

	Where comment from the Western Cape Government: Transport and Public Works is required, a map illustrating the properties (owned by the Western Cape Government: Transport and Public Works) that will be affected by the proposed development must be included in the Report.
Provide a detailed site development plan / site map (see below) as Appendix B1 to this BAR; and if applicable, all alternative properties and locations.	
Site Plan:	<p>Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following:</p> <ul style="list-style-type: none"> • The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be clearly indicated on the plan, preferably together with a linear scale. • The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan. • On land where the property has not been defined, the co-ordinates of the area in which the proposed activity or development is proposed must be provided. • The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be clearly indicated on the site plan. • The position of each component of the proposed activity or development as well as any other structures on the site must be indicated on the site plan. • Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the proposed development must be clearly indicated on the site plan. • Servitudes and an indication of the purpose of each servitude must be indicated on the site plan. • Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): <ul style="list-style-type: none"> ○ Watercourses / Rivers / Wetlands ○ Flood lines (i.e., 1:100 year, 1:50 year and 1:10 year where applicable); ○ Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&DP"); ○ Ridges; ○ Cultural and historical features/landscapes; ○ Areas with indigenous vegetation (even if degraded or infested with alien species). • Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted. • North arrow <p>A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas.</p>
Site photographs	Colour photographs of the site that shows the overall condition of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached to this BAR as Appendix C . The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.
Biodiversity Overlay Map:	A map of the relevant biodiversity information and conditions must be provided as an overlay map on the property/site plan. The Map must be attached to this BAR as Appendix D .
Linear activities or development and multiple properties	<p>GPS co-ordinates must be provided in degrees, minutes and seconds using the Hartebeeshoek 94 WGS84 co-ordinate system.</p> <p>Where numerous properties/sites are involved (linear activities) you must attach a list of the Farm Name(s)/Portion(s)/Erf number(s) to this BAR as an Appendix.</p> <p>For linear activities that are longer than 500 m, please provide a map with the co-ordinates taken every 100m along the route to this BAR as Appendix A3.</p>

ACRONYMS

BAR:	Basic Assessment Report
CBA:	Critical Biodiversity Area
CF:	Conceptual Framework
CWCL:	Cape Winelands Cultural Landscape
CWD:	Cape Winelands District
DEA:	Department of Environmental Affairs
DEA& DP:	Department of Environmental Affairs and Development Planning
DEFF:	Department of Environment, Forestry and Fisheries
DWS:	Department of Water and Sanitation
DoA:	Department of Agriculture
DoH:	Department of Health
EA:	Environmental Authorisation
EAP:	Environmental Assessment Practitioner
EIA:	Environmental Impact Assessment
EIS	Ecological Integrity and Sensitivity
EMF:	Environmental Management Framework
EMPr:	Environmental Management Programme
ESA:	Ecological Support Area
GA:	General Authorisation
HDI:	Human Development Index
HIA:	Heritage Impact Assessment
HWC:	Heritage Western Cape
I&AP:	Interested & Affected Party
IBA:	Important Bird Area
IDP:	Integrated Development Plan
LOS	Level of Service
LU:	Land Unit
NEMA:	National Environmental Management Act
NFEPA:	National Freshwater Ecosystem Protection Assessment
NGO:	Non-governmental Organisation (a non-profit)
NID:	Notification of Intent to Develop
NMT:	Non-Motorised Transport
NSBA:	National Spatial Biodiversity Assessment
NSSD:	National Strategy for Sustainable Development
NWA:	National Water Act
PA:	Protected Area
PES:	Present Ecological State
PPP:	Public Participation Process
PSDF:	Provincial Spatial Development Framework
SANBI:	South African National Botanical Institute
SCC:	Species of Conservation Concern
SDF:	Spatial Development Framework
SMA:	Stellenbosch Municipal Area
SMZSBL:	Stellenbosch Municipal Zoning Scheme By-Law
SOP:	Standard Operating Procedure
TOR:	Terms of Reference
WCBSP:	Western Cape Biodiversity Spatial Plan
WCG:	Western Cape Government
WUL:	Water Use License
WULA:	Water Use License Application

ATTACHMENTS

Note: The Appendices must be attached to the BAR as per the list below. Please use a ✓ (tick) or a x (cross) to indicate whether the Appendix is attached to the BAR.

The following checklist of attachments must be completed.

APPENDIX		✓ (Tick) or x (cross)
Appendix A:	Maps	
	Appendix A1:	Locality Map ✓
	Appendix A2:	Coastal Risk Zones as delineated in terms of ICMA for the Western Cape by the Department of Environmental Affairs and Development Planning Not Applicable
	Appendix A3:	Map with the GPS co-ordinates for linear activities Not Applicable
Appendix B:	Appendix B1:	(a) Site development plan(s) (b) Alternative 3_Preferred Services Layout including proposed flood protection and river rehabilitation measures (c) Alternative 2_Not Preferred Services Layout ✓ (d) Alternative 1_Not preferred services layout
	Appendix B2	A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas; ✓
Appendix C:	Photographs	✓
Appendix D:	Biodiversity overlay map	✓
Appendix E:	Permit(s) / license(s) / exemption notice, agreements, comments from State Department/Organs of state and service letters from the municipality.	
	Appendix E1:	Final comment/ROD from HWC 2x RNID & interim comment on HIA available Final ROD will only be available after 9 March and will be provided to DEA&DP then.
	Appendix E2:	Copy of comment from Cape Nature ✓
	Appendix E3:	Final Comment from the DWS ✓
	Appendix E4:	Comment from the DEA: Oceans and Coast Not Applicable

	Appendix E5:	Comment from the DAFF	<u>No comment received despite notification</u>
	Appendix E6:	Comment from WCG: Transport and Public Works	✓
	Appendix E7:	Comment from WCG: DoA	<u>No comment received despite notification</u>
	Appendix E8:	Comment from WCG: DHS	<u>No comment received despite notification</u>
	Appendix E9:	Comment from WCG: DoH	<u>No comment received despite notification</u>
	Appendix E10:	Comment from DEA&DP: Pollution Management	✓
	Appendix E11:	Comment from DEA&DP: Waste Management	✓
	Appendix E12:	Comment from DEA&DP: Biodiversity	<u>Pre-app DBAR and post-app DBAR provided to them but no comment received</u>
	Appendix E13:	Comment from DEA&DP: Air Quality	✓
	Appendix E14:	Comment from DEA&DP: Coastal Management	Not Applicable
	Appendix E15:	Comment from the local authority	<u>Comment received from Stellenbosch Municipality Community & Protection Services.</u> Comment regarding potable water line to Lanquedoc is included. <u>No other comments received despite follow-up</u>
	Appendix E16:	Confirmation of refuse/waste removal and capacity for other services	✓ <u>Additional letters and updated comment added</u>
	Appendix E17:	Comment from the District Municipality	<u>No comment received despite notification</u>
	Appendix E18:	Copy of an exemption notice	Not Applicable
	Appendix E19:	Pre-approval for the reclamation of land	Not Applicable
	Appendix E20:	Proof of agreement/TOR of the specialist studies conducted.	TOR is contained in each specialist report

	Appendix E21:	Proof of land use rights	✓
	Appendix E22:	Proof of public participation agreement for linear activities	Not applicable
Appendix F:	Public participation information: including a copy of the register of I&APs, the comments and responses Report, proof of notices, advertisements, and any other public participation information as is required.		✓
Appendix G:	Specialist Report(s) a) Transport Impact Assessment b) Engineering Services Reports i. Initial services report with pre app draft BAR ii. Civil Services Report c) Terrestrial biodiversity compliance statement d) Agricultural Site Sensitivity Verification and Agricultural Compliance Statement e) Freshwater report f) <u>Final</u> Heritage Impact Assessment & NID for New Retreat Main Site g) Tree survey h) Structural Inspection i) Flood Report j) NID Report for permanent pipeline to Lanquedoc		✓
Appendix H:	EMPr		✓
Appendix I:	Screening tool report & <u>Site Sensitivity Verification Report</u>		✓
Appendix J:	Environmental Assessment methodology for determining impacts		✓
Appendix K:	Need and desirability for the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013)/DEA Integrated Environmental Management Guideline		In the body of the report
Appendix L:	Landscape Plan		✓
Appendix M:	Application for General Authorisation in terms of the National Water Act <u>and Acknowledgement of receipt</u>		✓
Appendix N:	Application Form for Environmental Authorisation		✓
Appendix O:	Power of Attorney from Stellenbosch Municipality		✓

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EXECUTIVE SUMMARY

Introduction

Following the circulation of the post-application Draft BAR for public review in December 2021/January 2022, the report has been updated. This is the Final Basic Assessment Report (BAR) (which has the final Heritage Impact Assessment Report appended to it) which is being submitted to the Competent Authority, namely the Department of Environmental Affairs and Development Planning (DEA&DP). This report has been compiled as part of the integrated Basic Assessment process for the application for Environmental Authorisation in terms of the National Environmental Management Act (No. 107 of 1999) (NEMA) and the associated Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) for a proposed "New Retreat" on a portion of Portion 11 of Farm 1674, Paarl.

It provides information on the proposed development, Listed Activities triggered (which determines the need for an Environmental Authorisation), the site and various natural, built, cultural, and social environmental considerations, as well as specialist studies undertaken, their findings and recommendations. The BAR has been updated with comments received during the public review period of the post-application Draft BAR. These changes constitute minor updates which have been underlined for ease of reference.

Proposed Development

The proposed development entails the development of a "New Retreat", for the Bertha Foundation which would have the capacity to accommodate up to approximately 34 overnight guests/attendees.

For the preferred Alternative (Alternative 3), the existing building footprints of the remnant cottages on site would be used, where possible and the proposed development would comprise of the following buildings:

- Accommodation buildings to accommodate up to approximately 34 overnight guests/attendees, which include bedrooms, bathrooms, a lounge/communal living area and covered outdoor areas/deck space;
- A conference facility which includes a small conference venue and up to approximately two breakaway areas;
- A communal dining and lounge area;
- An administration building with a reception and waiting lounge / library;
- Meeting room(s) for community programmes and a communal library; and
- A kitchen area, with space for staff dining, lockers, and ablution facilities.

Up to approximately 24 parking bays (which includes 7 visitors parking bays) would be included. Refer to the site plan for the proposed development below.



There would be a combination of hard and soft landscaping measures applied. Hard landscaping would include an open courtyard and a network of boardwalks, as well as an outdoor landscaped amphitheatre (which would be grassed). Proposed parking areas would also be landscaped, but these would be tucked within further planting to soften the entrance and interface with the Ou Wa-pad. Soft landscaping would also be used to bridge scale with the proposed buildings and break-away areas as well as to provide screening and synergy with the surrounding landscape. Tree lines as well as rehabilitated fynbos corridors would be implemented to provide strong connections to the broader landscape (*pers comms*, A. Bormans, 29/05/2020). There would be peripheral areas to connect to nature through the provision of a continuous footpath through the rehabilitated fynbos and productive kitchen garden (*pers comms*, A. Bormans, 29/05/2020). The interface with the historic "Ou Wa-pad" would be softened with extensive planting. The intention would be for the site to be as self-sufficient as possible, and so a vegetable garden is a major component of the landscape plan. The landscaping would also make use of permeable surfaces as much as possible and so the source of water for the landscaping would be a combination of municipal supply, rainfall and stormwater run-off (infiltration).

The site would be accessed from the existing Ou Wa-pad, noting that the main access-controlled gate to Boschendal along that road would remain. Refer to the landscape plan below.



Duplication of Figure 2

Stormwater would be managed primarily by infiltration through permeable surfaces. Surface flow that may be generated by high rainfall events would be allowed to pass through the development by surface escape, without causing flow concentration. Flood management measures to protect the development from flooding of the adjacent watercourse would be required. These measures comprise the conversion of the existing culvert crossing on Hoof Road to an engineered low-level road crossing to contain flood flow safely under and over the new culverts, within the river corridor. The existing berm on the development side of the watercourse would also be formalised to be continuous, reprofiled and raised. The existing head-cut within the stream would be "flooded" (i.e., water would be allowed to pool therein) so that the erosive cut is less likely to move upstream and there would be some low retaining of the channel side embankments in gabions, as well as floor armouring throughout the structure.

For the preferred alternative, potable water supply would come from the Stellenbosch Municipality via a connection to their Lanquedoc pump station. The connection would entail a new, underground 160mm diameter uPVC link to be installed within the road on Boschendal Estate and within the road reserve along Hoof Road. The routing of the western segment of the proposed water line would be determined on site but would be limited to the northern side of the roadway. It would either be routed within the northern half of the road (i.e. hard/blacktop) or between the existing hard top and row of gum trees alongside it (there is currently compacted, bare ground presently between the gum trees and hard/blacktop). Capacity for this has been confirmed by the Stellenbosch Municipality.

While the above solution is pursued, the proposed interim connection would involve tying into the existing York Dam 300 mm diameter irrigation supply line that currently feeds a part of the Boschendal Estate irrigation reticulation. There is an existing "take-off" for water supply to existing houses just off Hoof Road within the York Farm boundary. The existing connection would be upgraded to a 160 mm connection and a new 160 mm diameter uPVC Class 12 pipe would be laid to the Retreat. The new pipe route would extend 282 m and be installed within the road/ road reserve on Hoof Road (Middelmann & Hurworth, 2021). The pipe would cross a perennial stream where approximately 20 m would be fastened to the existing culvert. The pipeline will terminate at the entrance of the Retreat. In the interim, a holding tank and combination sand filter and Ultra-violet water treatment plant will be installed to treat the "irrigation water" to the required quality and standard for potable water.

For the preferred alternative, the site would be equipped with a conservancy tank of maximum 30 m³ capacity in order to temporarily hold/store the sewage and wash-water on site until off-site disposal occurs. The wastewater from this tank would be pumped out by a honeysucker as required for off-site disposal. The siting of these components has been intentionally devised in order to pose the least risk possible on freshwater systems on and around the site. Note that in the long-term, the intention is to connect to municipal supply, but this would be done when capacity is available and approved by the Municipality and would be the subject of a separate application for Environmental Authorisation, should there be any Listed Activities triggered. The proposed development would be supplied with a 200 KVA (300 Amp three phase) low voltage connection to the new site reticulation (pers comms, R. Clark, TRAC, 25/03/2021). The new supply would be taken from the existing Kylemore Farmers 1 Eskom 11 kV line via a new 11 kV Tee-off. This would be installed to run across the gravel farm road from the existing Eskom 11 Kv overhead line (pers comms, R. Clark, TRAC, 25/03/2021). The new line would feed a new 1 1kV/420 Volt 200 Kva pole-mounted transformer, installed on the site and connected to a new 300Amp (200Kva) three-phase low voltage Eskom bulk supply meter point (pers comms, R. Clark, TRAC, 25/03/2021). It is also the intention to supplement power from the grid with rooftop solar panels in the future (pers comms, R. Clark, TRAC, 25/03/2021).

Refuse generated by the operational phase of the proposed development would be incorporated into existing systems at Boschendal which includes use of an existing private service provider who would dispose of non-recyclable waste at the Vissershok landfill.

A fibre spine is proposed to be installed along Hoof Road in the future, and the development would be equipped with a duct and drawpit system to provide connectivity to all units (pers comms, M. Middelmann, MH&A Consulting Engineers, 18/03/2021). Refer to the proposed services plan below.



Duplication of Figure 6

Rehabilitation to the stream to the north of the site (i.e. stream 10) would also take place. There is a detailed rehabilitation plan included in the EMPr (refer to Appendix H) and the Aquatic Biodiversity Impact Assessment Report (refer to Appendix G(e)), but Snaddon (2021) indicates the following necessary rehabilitation requirements:

- Bed (head-cut) Stabilisation;
- Bank (lateral) stabilisation);
- Removal of invasive alien plant species; and
- Replanting of rehabilitated areas.

Regular maintenance would also be required, hence the Maintenance Management Plan in the EMPr.

Legal Triggers

The proposed development triggers Listed Activities 19 and 48 of Listing Notice 1 and Listed Activities 6 and 12 of Listing Notice 3 in terms of NEMA and the associated EIA regulations, 2014 (as amended). Note that the potable water line from the site to Lanquedoc does not trigger Listed Activities in terms of the EIA Regulations, 2014 (as amended), but is included in the project description as it is necessary to service the site. The proposed development also triggers activities in terms of Section 21 of the National Water Act (No. 36 of 1998) (NWA), particularly S21(c) & (i). The aspects of the proposed development that would trigger these activities include partial infilling of wetlands, working nearby and in a stream (including for rehabilitation and flood stabilisation measures) and wetlands, as well as the proposed placement of a conservancy tank of up to 30m³ in capacity and associated lines nearby a stream and wetlands. This also covers the potable water lines given that these would be nearby wetlands and cross watercourses (over them, with the line being attached to existing roads). It should, however, be noted that with mitigation, development Alternative 3 (i.e. the preferred alternative) poses at worst a low risk to the characteristics of the inland aquatic ecosystems affected by the development, and it is recommended that the development be generally authorised in terms of a Section 21 (i) water uses (Snaddon, 2021). Off-site disposal of effluent and on-site containment and infiltration of stormwater would also avoid the need for Section 21 (e) and (g) water uses (Snaddon, 2021). This has been confirmed by the Department of Water and Sanitation (DWS) who have indicated that the proposed development can be authorised under a General Authorisation. An application has been submitted in this regard and acknowledged by the DWS.

The proposed development also triggers Section 38 of the National Heritage Resources Act (No. 25 of 1999), noting that the proposed temporary and permanent potable water lines do not. The proposal and nature of the proposed development relative to the current context and sense of place trigger constitute a change of character to a site greater than 5000 m². The cultural landscape surrounding the site is of such high significance that it forms part of the grade I Cape Winelands Cultural Landscape (CWCL) and has been put forward for inscription on the UNESCO tentative world Heritage Site list. The Ou Wa-pad adjacent to the site is also a key component of the tangible heritage on site and in the context thereof. The social heritage of the site lies within the story thereof and use of the site as homes for the former farm workers.

Baseline

Visual

Although located along an important historic connection route, the site itself is not highly visible (Smuts & Scurr, 2020). From the north it is obscured from view by trees planted around the York Farm managers' cottages which are located just north of the site and from the south it is visible at the Boschendal property gate on the road to Lanquedoc, but not further than that as the road curves towards Lanquedoc (Smuts & Scurr, 2020). As such, the site is not visible for most of the alignment of the wapid and the cluster of cottages (also then the proposed cottages as the footprint and massing would be very similar) is not visible either from the R310 or the R45, both of which are scenic routes (Smuts & Scurr, 2020). The site is further not visible from Boschendal werf or much visible from any parts of the farm west of the R310 due to the undulating topography across the area, the mature plantings across much of Boschendal and the modest scale of the structures (Smuts & Scurr, 2020).

The most significant view corridor for the proposed development is that from the Rhone werf and to the Rhone werf (Smuts & Scurr, 2020). Both sites are visible to the other, however the views from the werf, which obscure views of the cottages, to the proposed development is of low significance because of the mature trees surrounding the werf as well as the north-facing orientation of the Rhone werf (Smuts & Scurr, 2020). Furthermore, Smuts & Scurr (2020) conclude that the proposed redevelopment of the cottages (with mitigation) would not result in any further visual impacts on Rhone than are already affected by the existing settlement. The views of Rhone from York Farm would also serve to embed the settlement in the Boschendal cultural landscape and would not be occluded or crowded by any of the proposed development interventions (Smuts & Scurr, 2020).

Heritage

The site does not have any apparent archaeological sensitivity (Smuts & Scurr, 2020) as a result of the pasturage history and location of the site far from historic werfs. A possibility remains, however, that intact, below ground archaeological remains of high significance could occur at the site.

Smuts & Scurr (2020) confirm that there is a tangible heritage resources in the wider study area which forms a vital component of, and inform, the site and these include the Ou Wa-pad (an historic route which runs from the R45 in the north to Lanquedoc, Pniel and Kylemore in the south).

The cultural landscape is also highly significant, and different than the rest of the farm, and comprises an exposed, less tended, wilderness which also forms part of the very important Grade I CWCL.

In terms of intangible heritage, while the derelict cottages themselves have been confirmed to hold no architectural or aesthetic significance, Smuts & Scurr (2020) state that they are representative of a social layer of history which imprints significant memory on the site. The site was once lived on by farm workers who enjoyed various aspects of the site itself and the farm and natura context it is situated within, a life which was disrupted and truncated by the removal of workers off Boschendal in the early 2000s (Smuts & Scurr, 2020). The social significance of the farm and the site is high given its long history of use, and the particular sensitivities arising from the unequal and discriminatory labour practices from the time of slavery to the recent past (Smuts & Scurr, 2020).

The road along which the permanent potable water line runs links the historic workers' village of Lanquedoc with the R310 (Smuts & Scurr, 2021). Lanquedoc consists of its historic core of cottages designed by Sir Herbert Baker for Rhodes' workers at the turn of the C20th, and more recent RDP and low-cost workers' accommodation (Smuts & Scurr, 2021). The historic settlement of Lanquedoc carries high significance in terms of architectural and landscape significance, as well as social significance (Smuts & Scurr, 2021). In terms of archaeology, historic material from the c20th is likely to be found within the settlement of Lanquedoc itself, but significant material beyond the limits of the village, and within the road reserve, are not anticipated (Smuts & Scurr, 2021).

Aquatic Biodiversity/ Freshwater

Snaddon (2021) confirmed five freshwater resources on/near the site, namely the perennial stream 10 which runs along the eastern edge of the site, the Dwars River valley-bottom wetland and the seep wetland to the west of the site, stream 11 which would be crossed by the permanent water supply pipeline and its associated wetland, and a seep wetland associated with the York Dam. The upper reaches of stream 10 has a high ecological importance and sensitivity, while the lower river is of moderate ecological importance and sensitivity (EIS) (Snaddon, 2021). Both wetlands are transformed from the natural state, as a result of the long history of cultivation of the Estate and there is evidence of excavations and berms in both wetlands, as well as roads and tracks (Snaddon, 2021). The "New Retreat seep" wetland was assessed to be in a Category D – largely modified – while the Dwars River valley-bottom wetland lies in a category C – moderately modified (Snaddon, 2021). Overall, the Dwars River valley-bottom wetland was placed in the High EIS category, and the seep wetland in the Moderate category (Snaddon, 2021).

Two Ecological Corridors pass through the New Retreat site, one along Stream 10 and the other following the Dwars River (Snaddon, 2021).

The route for the proposed water supply line would cross stream 11 as well as its associated seep. Stream 11 is an earth-lined channel with cobble and fine sediments and the watercourse has been heavily invaded by invasive alien plants, with few indigenous riparian plants remaining in the riparian area (Snaddon, 2021). Stream 11 is surrounded by a seep wetland that extends uphill towards Lanquedoc and the diversion channel, with the seep having approximately 10% invasive alien plants and the remainder as indigenous vegetation (Snaddon, 2021). Stream 11 and its associated seep both hold a moderate ecological importance and sensitivity and in terms of Present Ecological Status (PES), they are both category D (largely modified) watercourses (Snaddon, 2021).

The interim water supply line which would connect to an existing irrigation supply, would cross stream 10 as well as run very close to a seep below the York Dam. The York Dam seep wetland has been assessed as being in a PES category C – this seep has also been transformed by the presence of the road and the dam, and a few farm buildings. The wetland vegetation persists, however, including palmiet, *Prionium serratum* (Snaddon, 2021). In terms of EIS, the seep lies in the Moderate category (Snaddon, 2021).

The impact of the proposed development has been assessed, with the assessment covering three layout/servicing alternatives, as well as two versions of the no-go alternative (all within the existing rights currently permitted, but split out because certain of those land uses would have different impacts on the freshwater system). Note also that the freshwater impact assessment for the two development alternatives that are not preferred covers the potential water line and reservoirs required for one of the municipal bulk water connections proposed and it covers the proposed (and preferred) potable water line to Lanquedoc of the preferred alternative. It also covers the proposed flood remediation and rehabilitation works to stream 10.

In general, the impacts anticipated would be similar for all alternatives assessed (including the existing rights/ no-go alternative), but the severity/ significance would differ among alternatives. Construction phase impacts of freshwater resources are anticipated to include compaction and damage of soil structures, pollution of the wetlands or stream, disturbance of aquatic and terrestrial fauna, loss of natural vegetation cover and subsequent loss of biodiversity, erosion and sedimentation and the introduction of alien or invasive seedbanks which adversely affects natural biodiversity (Snaddon (2021)). The operational impacts anticipated include decreased water quality as a result of stormwater run-off, changes to water quantity through additional run-off and increased frequency of flood peaks and volume entering the freshwater systems, contamination of soils, groundwater and aquatic ecosystems from leaks in the sewage package plant, disturbance of fauna and flora, as well as compromised biodiversity through import of alien or invasive seeds and seedlings (Snaddon, 2021).

Terrestrial Biodiversity / Botanical

The site and potable water pipeline routes are of Low botanical and faunal diversity and sensitivity, and presents no faunal or botanical constraints to the proposed development, other than the seasonal drainage line on the eastern edge of the site (to be addressed by freshwater specialist), where development planning should be in line with what is recommended by the freshwater specialist.

The overall ecological significance of the development of the site (excluding the seasonal drainage line on the eastern edge of the site) and installation of the potable water pipeline would be Low negative (before mitigation) on a regional scale.

The proposed development could actually enhance the ecological status of the site and surrounding area, by means of increasing the current indigenous plant diversity and cover (as proposed in development layouts) and making it more attractive to a wider range of birds and insects.

Agricultural Sensitivity

An Agricultural Sensitivity verification and compliance statement has been conducted and the findings indicate that detailed soil mapping identifies the soil map unit, on which the site and potable water pipeline route is located, as being of medium-low soil potential and not recommended for cultivation (Lanz, 2021).

The soil on site is a poorly drained, 80cm deep, sandy soil of the Kroonstad 2000 soil family with a high rock content and a soil potential rating of 3.5 (Lanz, 2021). The soil potential rating is in a category that is not recommended for crop production. Further evidence of the soil being unsuitable for crop production is the fact that this soil map unit has not been cultivated within at least the last 17 years (which is the limit of Google Earth historical imagery), while the surrounding map units, with higher potential rating, are under cultivation (Lanz, 2021).

Because of the poor soils, the site and potable water pipeline routes do not deserve a land capability of more than 7 and the correct agricultural sensitivity, in terms of the four screening tool sensitivity categories (low; medium; high; very high), should therefore be medium (Lanz, 2021).

Transport and Access

The Transport Impact Assessment confirmed the following existing roadways in the vicinity of the site:

- **R45 (MR 191):** Provincial Main Road: One lane per direction, with paved narrow shoulders and no sidewalks.
- **Helshoogte Road (MR 172/R301):** Provincial Main Road: One lane per direction, with paved sidewalk located on the eastern side of the road.
- **Lanquedoc Main Road:** One lane per direction, no shoulder, and no sidewalks. This reduces to one travel lane over the Dwars River Bridge. One directional traffic flow is maintained over the Dwars River following a first-come, first-cross principle. Speed humps on either side of the bridge.
- **Ou Wapad:** It is a gravel road, located within a 6 m wide servitude, which traverses over Boschendal owned property, gated at both ends

The assessment focused on the above roads and the Helshoogte Road/Lanquedoc Main Road and Lanquedoc Main Road/Ou Wapad intersections (Pretorius & Sequeira, 2020). Pretorius & Sequeira (2020) confirm that all the intersections are operating satisfactorily with no capacity conditions being experienced and, while the Dwars River Bridge acts as a pinch-point, the delay is only 2.2 seconds per vehicle. When considering the traffic growth, background traffic conditions as well as the additional trips (28 during the morning peak hour) that would result from the proposed development and their distribution, it was found that impact would have a low impact and no capacity upgrades would be required. No non-motorised transport (NMT) interventions are recommended. Recommendations have been made regarding parking capacity and resurfacing of the bellmouth at the Lanquedoc Main Road/ Ou Wapad intersection.

It is noted that there are plans by the Stellenbosch Municipality to upgrade the Dwars River Bridge in the near future, funding permitting.

Fauna

The site is largely located within a low sensitivity faunal area, however the high-sensitivity faunal areas and the association faunal corridors correlate with the wetlands and river (and associated ecological buffers) associated with the site (refer to Figure 35). The proposed development is consistent with the goals for low and high sensitivity areas indicated in Jackson *et al* (2019). Helme (2021) states that the faunal diversity of the site is low, and typical of disturbed, remnant habitat in the region. No animal Species of Conservation Concern (SCC) were recorded in the study area, and none are expected to survive in this disturbed area. Faunal sensitivity is Low on a regional scale (Helme, 2021). Fauna noted in the stream included the Cape River Crab, *Potomonautes perlatus*, blackfly larvae, *Simulium* spp., and numerous mayfly nymphs of the family *Baetidae*. These species are all hardy taxa, tolerant of impacted water quality (Snaddon, 2021).

Ecological sensitivity has also been considered relative to the proposed water supply lines and the reservoir at the end for Alternative 2 and this is either adjacent to, or at times encroaching into a faunal corridor. The potable water line along Hoof Road to Lanquedoc pump station for the preferred alternative has also been considered from a faunal sensitivity perspective. Given that the line would be underground and located within the existing farm road and then within existing tarred road or the compacted ground between the edge of the black top and the gum trees, this would not provide any constraints during operation and would, therefore, only require careful management during construction, particularly regarding trenching and measures to limit faunal from getting trapped in the trenches.

Overall impacts on fauna would be low during construction, if mitigation is implemented, and would be positive during operation as the ecological status of the site would be improved upon and more, better quality habitat would be provided in a habitat which is currently transformed (i.e. some of it would become fynbos habitat, which is significant in the area).

Alternatives and Comparison

Three development layout/servicing alternatives are formally assessed in this process, namely the preferred alternative (i.e. Alternative 3) and Alternatives 1 and Alternative 2. The alternatives assessed are the same with respect to the building layouts, use of the site and landscape intentions, as well as flood risk mitigation, stream rehabilitation and services for refuse and telecommunications. The alternatives differ with respect to sewer, stormwater, and potable water services. These are summarised in the duplication of Table 6.

Duplication of Table 6

Alternative	Project Scope	Sewer	Water	Stormwater	Layout
1	<p>Redevelopment of the cottages for the "New Retreat" to accommodate up to 34 overnight guests with supporting conferencing facility, communal lounge and dining area, administration buildings, meeting rooms, outdoor patios and spaces and kitchen and staff areas. Up to 24 parking bays. Hard and soft landscaping to include grassed amphitheatre, parking area planting, central courtyard, tree lines, fynbos gardens and kitchen gardens all in synergy with surrounding landscape.</p>	<p>Siting of the pumpstation, wastewater treatment tank/treatment package plant (i.e. a tank which would employ a low energy biological treatment process to treat the wastewater/sewage) of 40 m³ and associated access track all on the north-western "corner" of the site. Treated wastewater would be used for toilet flushing and irrigation of the landscaping on road verges.</p>	<p>Several supply alternatives were considered (municipal, borehole, and farm dam), but the final supply had yet to be confirmed. The services layout indicated pumping water to a reservoir (comprising approximately three 10 000 L storage tanks) further south of the site, with the proposed line being located within the existing road limits. No further detail is available for this alternative as feedback from Stellenbosch Municipality in this regard was outstanding at the time of assessment.</p>	<p>Siting of vegetated swale to the north of the proposed parking area and for a short stretch along the stream.</p>	<p>Refer to Figure 45</p>
2	<p>Flood mitigation measures including conversion of the existing culvert on the Ou wapad to an an engineered low level road crossing and reinstatement of berms along riverbanks. River rehabilitation works. 200KVA low voltage electrical connection to the existing Kylemore Farmers 1 Eskom 11kV line. Refuse would be incorporated into the existing system. Telecommunications ducts and drawpit for all units, to connect to future fibre spine along Hoof Road.</p>	<p>Siting of the pumpstation, wastewater treatment tank/ treatment package plant (i.e. a tank which would employ a low energy biological treatment process to treat the wastewater/sewage) of 40 m³ and associated access track to locate the treatment tank/package plant (i.e. the SOG trickling filter component) further from the stream by placing it on the opposite side of the ou wapad, to the south-west of the site. The siting of these components has been intentionally devised in order to pose the least risk possible on freshwater systems on and around the site. Treated wastewater would be used for toilet flushing and irrigation of the landscaping on road verges.</p>		<p>Siting of vegetated swale to the north of the proposed parking area and pulling it away from the stream, which reduces the risk to the watercourse</p>	<p>Refer to Figure 46.</p>
3 (preferred)		<p>Siting of the pumpstation, pipelines,</p>	<p>Following confirmation of requirements of Stellenbosch Municipality</p>	<p>Large areas of permeable surfaces in the</p>	<p>Refer to Figure 5 and Figure 6.</p>

		<p>conservancy tank to locate the conservancy tank further from the stream by placing it on the opposite side of the ou wapad, to the south-west of the site. A conservancy tank of 30m3 capacity would be utilised to temporarily hold/store the sewage and wash-water until off-site disposal occurs. The wastewater from this tank would be pumped out by a honeysucker as required for off-site disposal. The siting of these components has been intentionally devised in order to pose the least risk possible on freshwater systems on and around the site. Note that in the long-term, the intention is to connect to municipal supply, but this would be done when capacity is available and approved by the Municipality and would be the subject of a separate application for Environmental Authorisation, should there be any Listed Activities triggered.</p>	<p>Bulk water would be sourced from the external municipal network in Lanquedoc. An underground 160 mm diameter uPVC link main is proposed to be constructed from a connection point on the Lanquedoc PRV water distribution zone, on the fringe of the Lanquedoc estate, along Hoof Road and into Boschendal (refer to Figure 5). The routing of the western segment of the proposed water line would be determined on site, but would be limited to the northern side of the roadway. It would either be routed within the northern half of the road (i.e. hard/blacktop) or between the existing hard top and row of gum trees alongside it (there is currently compacted, bare ground presently between the gum trees and hard/blacktop). A bulk meter would be required at the Boschendal boundary, proposed at a convenient location outside the security gate and to the approval of the local authority, and the pipeline would continue as a private main up to the Retreat development, on Ptn 11 of Farm 1674. The pipeline would bridge various stormwater culverts by surface fixing. This link main is in principle in accordance with the alignment proposed in the GLS capacity analysis report and accompanying schematics for the development, dated 5 December 2020, and has been formally endorsed by confirmation of capacity by the local authority. The GLS report proposes a demand of approximately 13 kL per day for the development, and this capacity is available in the network. The main would terminate at the development, and a supply off this main would provide potable and fire water to the Retreat. This supply would be managed through a private sub-meter and would separate on-site into a 110 mm uPVC Class 16 fire ring and a 50 mm uPVC Class 12 domestic system.</p>	<p>parking areas to such a degree that a vegetated swale is not required. The preferred alternative has a larger extent of grassed area (i.e. Grass fix) to improve infiltration.</p>	
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			<p>While the above option is pursued, a temporary pipeline would be constructed to connect into the existing York Dam 300 mm diameter irrigation supply line that currently feeds a part of the Boschendal Estate irrigation reticulation. There is an existing "take-off" for water supply to existing houses just off Hoof Road within the York Farm boundary (north-east of the site). The existing connection would be upgraded, and a new 160 mm diameter pipe would be laid to the Retreat. The new pipe route would extend 282 m and be installed within the road reserve on the northern side of Hoof Road and turn north towards the connection point while continuing within the road reserve. The pipeline will terminate at the entrance of the Retreat. A holding tank and combination sand filter and Ultra-violet water treatment plant will be installed to treat the "irrigation water" to the required quality and standard for Municipal potable water. The internal reticulation would be the same as for the permanent supply.</p>	
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The no-go alternative has also been assessed and considered as "no development", with retention of the derelict old worker cottages, but with the possibility of farming activities on the site, in line with existing rights. With respect to existing rights, the site is zoned Agriculture and Rural Zone in terms of the Stellenbosch Municipality Zoning Scheme By-law. This could then include primary uses permitted in terms of its Agricultural and Rural Zoning in the Stellenbosch Municipality Zoning Scheme By-law, including:

- Agricultural building ($\leq 200\text{ 0m}^2$)
- Agriculture
- Dwelling house
- Forestry
- Natural environment
- Occasional use (one event/year)
- Private road
- Polytunnel ($\leq 2000\text{ m}^2$)
- Second dwelling
- Employee housing (one unit)

Therefore, when considering land use planning legislation as well as the EIA Regulations, as amended, the no-go alternative may include any combination of the following activities on site:

- Use of the existing cottages (in their current footprint) as farm accommodation or any other farm-related use like storage or administration;
- Use of the site for cultivation (which does not involve the release of GMOs);
- Use of the site for breeding of animals (which does not involve the release of GMOs), below the following thresholds:
 - 20 square metres per large stock (i.e. horses) and less than 500 in total;
 - 30square metres per crocodile and less than 20;
 - 8 square metres per small stock unit (e.g. pigs, chickens, etc.) and less than 1000 in total, unless pigs are kept which would then be less than 250;
 - 3 square metres per rabbit and less than 500;

- 250 square metres per ostrich/emu and less than 50.

Given that there are different implications of the which existing rights use is implemented for the freshwater ecosystem, two scenarios have been assessed by Snaddon (2021) (i.e. from an aquatic biodiversity perspective), namely:

- **No-go Alternative 1:** this is the best case scenario, which would entail renovation of four of the eight buildings (those that lie outside the 32m NEMA buffer for the stream) for farm worker accommodation, and the remaining land is left as is (the remaining cottages would not be demolished); and
- **No-go Alternative 2:** this is the worst-case scenario, which would involve the cultivation of the full site and removal (demolition) of all buildings. It must be noted that this alternative is unlikely, due to the poor quality of the soil on site.

Comparison of Alternatives

Layout/servicing alternatives have been assessed in the form of the preferred development alternative (i.e. Alternative 3), as well as development Alternative 1 and Alternative 2, and the no-go or "existing rights" alternative (i.e. whereby the Applicant may continue with development which does not require approval and is aligned with existing rights whereby rights for agricultural use are presently in place for the farm portion within which the site is located). In addition, alternative design/ layout solutions, sewage disposal/treatment solutions and development approach (i.e. demolish and rebuild, vs refurbish, vs redevelop) have been considered within the preferred development alternative, although they have not been formally assessed. In general, the impact of the proposed development is anticipated to be a combination of medium and low positive impacts and low to very low negative impacts, while the impact of the existing rights alternative would largely be very low, low and medium negative, with no positive impacts and possible positive impacts of the proposed development in terms of heritage and terrestrial biodiversity which would be foregone. While the no-go alternative (the best case scenario where no intensive crops are intended) is preferred from an aquatic ecology perspective, the preferred development alternative can be mitigated to acceptable levels presenting low risk to freshwater systems and the preferred alternative proposed is also preferred from a freshwater ecology perspective, over the other development alternatives assessed. Note also that there are existing rights for the site, which allows for development without the need for Environmental Authorisation and, therefore, the aforementioned impacts indicated for the existing rights alternative are "with mitigation" however mitigation would not be monitored or controlled by any external parties (such as would be the obligation in terms of an Environmental Authorisation).

The proposed development is preferred over the existing rights alternative for the following reasons:

- The baseline conditions of the site are such that there are limited terrestrial environmental/ecological sensitivities on site and that aquatic ecological sensitivities can be avoided to acceptable levels. Heritage/cultural conditions are also conducive to the proposed development and would yield positive impacts if implemented with care (and as per the mitigation measures prescribed by Smuts & Scurr (2020)). In general, adverse impacts associated with either development would be low and there would be positive impacts from an architecture, landscape and social perspective, as well as from a terrestrial ecology perspective, and even an aquatic ecology perspective with regard to the landscaping component which includes fynbos rehabilitation.
- There are derelict buildings on site already which would better serve the farm in the form of tourism accommodation and socially beneficial uses (which is located nearby the local community), rather than having support buildings located well within the farm, far from other such operational infrastructure and separated from those hubs by a river which prevents easy access thereto.
- The preferred alternative would be better than using the site for farming as the agricultural sensitivity of the site has been found to be Medium and not recommended for crop production (Lanz, 2021). The employment opportunities created would likely have some minor benefit to the local communities. The cost of establishing the cottages would be relatively lower on the site, given the existing cottages, when compared to any other site. The existing rights alternative would likely not result in any new employment opportunities and unsuitable crop yields or greater expenses to make the land better suited for crop production.
- The anticipated social benefits of providing a space for human rights and environmental activist groups as well as to provide space for local community groups that aim at improving the lives of the people in the area would be positive and this would not be possible with the existing rights alternative. The location of the site is also meaningful as it lies along the Ou Wa-pad and in close proximity to the local community which would use it.
- Use of the site for typical agricultural activities could potentially require the demolition of the existing cottages to make space for grazing or crops, which is not desirable given that they provide an opportunity for tourism and community use.
- The principle of 're-use' and rehabilitation and/or refurbishment of existing derelict structures is a primary planning and design principle.

Impacts

Generally, the construction phase impacts for the proposed development (preferred alternative), with mitigation implementation, are anticipated to be Low (-) and Very Low (-) and the operational phase impacts, also with mitigation implementation, are anticipated to be similar with most impacts being Low (-) and one very low (-) and negligible. The negative impacts associated with the proposed development are anticipated to be either very low, low or negligible, while the positive impacts are anticipated to be low and medium. On balance, the positive impacts are greater and would outweigh the negative impacts during the operational phase, while the construction phase impacts would present more negative impacts. However, the construction phase impacts are related to construction activities which are short-term, and generally easily managed and mitigated and would also need to be independently audited throughout the construction phase. There is no single aspect or impact which stands out; however, it is important that the mitigation measures indicated in this report and in the Environmental Management Programme (EMPr) are followed as the significance of the impacts is contingent thereon.

Refer to the summary table below, noting that these are duplications of Tables 6 and 7.

Phase	Impact	Alternative 1, 2 and 3 (preferred)		No- Go Alternative 1		No- Go Alternative 2	
		Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Planning, design, and development	Physical: Altering the surface drainage regime	Low (-)	Neutral	N/A	N/A	N/A	N/A
	Socio-economic: Generation of local economic stimulus	Medium (+)	Medium (+)	N/A	N/A	N/A	N/A
	Nuisance Impacts: Noise and Dust	Low (-)	Very Low (-)	Low (-)	Very Low (-)	Low (-)	Very Low (-)
	Visual: Adverse visual/ aesthetic impacts	Low (-)	Very Low (-)	N/A	N/A	N/A	N/A
	Natural Resources: Depletion of Natural Resources through use as material in the development/construction phase	Low (-)	Very low (-)	Low (-)	Very low (-)	Low (-)	Very low (-)
	Traffic: Effect on LOS of local road network during the operational phase (Some minor congestion could be experienced during morning peak along the local road network, or a slightly longer waiting period to cross the Dwars River Bridge in the morning peak)	Low (-)	Low (-)	N/A	N/A	N/A	N/A
	Traffic: Traffic Congestion on local road network during construction	Low (-)	Very Low (-)	N/A	N/A	N/A	N/A
	Freshwater: Storage of building or demolition materials (sand, soil, bricks etc) in or close to sensitive areas – this would damage the soil structure and would destroy or shade out plants growing in and around these ecosystems. Dump areas frequently lead to the compaction of soils, which can influence re-growth of plants.	Low (-)	No impact	Low (-) to no impact	Low (-) to no impact	Low (-)	Low (-)
	Freshwater: Leakage or spillage of fuels, oils, etc. from construction / demolition machinery – this would lead to pollution of the wetlands or stream.	Low to medium (-)	Low (-)	Low (-)	Low (-)	Low (-) to medium (-)	Low (-) to medium (-)
	Freshwater: Foot and vehicular traffic across the site, leading to destruction or deterioration of freshwater habitat.	Low (-)	No impact	Low (-)	Low (-)	Low (-) to medium (-)	Low (-) to medium (-)
	Freshwater: Presence of construction / demolition teams and their machinery on site – this may lead to noise and light pollution in the area, which will disturb aquatic and terrestrial fauna and flora.	Low (-)	Low (-)	Low (-)	Low (-)	Low (-) to medium (-)	Low (-) to medium (-)
	Freshwater: Construction or demolition activities close to the wetlands or stream will lead to the loss of natural vegetation cover, and subsequent loss of biodiversity.	Low to medium (-)	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)
	Freshwater: Construction or demolition activities close to the wetlands or stream may lead to an increased input of mobile sediments, especially during the wet winter months when rain and runoff may cause erosion and sedimentation.	Low to medium (-)	Low (-)	Low (-)	Low (-)	Low (-) to medium (-)	Low (-) to medium (-)
Freshwater: Topsoil or sand brought onto the site, for filling and landscaping can lead to the introduction of alien or invasive seedbanks.	Low to medium (-)	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)	
Heritage- Archaeology: Impacts are possible to subsurface remains, should these occur, during developmental stage through trenching and earthmoving activities related to construction activities.	Medium (-)	Medium (-) or minor Low (+) if it contributes to site identification	None	None	None	None	
Heritage- Architecture: The cottages hold no architectural significance and no impacts will arise. Unsympathetic alteration could, however, result in the loss of a layer of the farm's history as expressed in the variety of architectural styles present on the farm.	Medium (-)	Low (+)	Medium (-)	Low (-)	Medium (-)	Low (-)	

	Heritage- Landscape: Inappropriate landscaping interventions will interfere with the ability of the new development to sit in the landscape in an authentic, sympathetic manner, which is crucial to retaining the significance of the cultural landscape.	Medium (-)	Low (+)	Medium (neutral, slightly negative)	Low (neutral, slightly negative)	Medium (neutral, slightly negative)	Low (neutral, slightly negative)
	Heritage- Social: Redevelopment of former workers' cottages risks erasing traces of those people's lives and labour from the Boschendal landscape, negatively affecting the authenticity of the farm as a heritage site.	High (-)	Medium (+)	High (neutral, slightly negative)	Very High (neutral, slightly negative)	High (neutral, slightly negative)	Very High (neutral, slightly negative)
Operational Phase	Fauna: Impacts on faunal movement through the site (Restriction of passage of fauna through the site)	Medium (-)	Low (-)	Medium (-)	Low (-)	Medium (-)	Low (-)
	Heritage-Archaeology: No impacts are anticipated to archaeological heritage during the operational phase	N/A	N/A	N/A	N/A	N/A	N/A
	Heritage- Architecture: The cottages hold no architectural significance and no impacts will arise. Unsympathetic alteration could, however, result in the loss of a layer of the farm's history as expressed in the variety of architectural styles present on the farm.	Medium (-)	Low (+)	Loss of the cottages through either demolition or dereliction would constitute a loss of a layer of the farm's history as expressed in the variety of architectural styles present on the farm. Medium (-)	Low (-)	Medium (-)	Low (-)
	Heritage- Landscape: Inappropriate landscaping interventions will interfere with the ability of the new development to sit in the landscape in an authentic, sympathetic manner, which is crucial to retaining the significance of the cultural landscape.	Medium (-)	Low (+)	Loss of built fabric illustrative of different periods of Boschendal history will reduce the heritage significance of the farm as a whole Medium (neutral, slightly negative)	Low (neutral, slightly negative)	Medium (neutral, slightly negative)	Low (neutral, slightly negative)
	Heritage- Social: Redevelopment of former workers' cottages risks erasing traces of those people's lives and labour from the Boschendal landscape, negatively affecting the authenticity of the farm as a heritage site.	High (-)	Medium (+)	The loss of these cottages through either demolition or	Very High (neutral, slightly negative)	High (neutral, slightly negative)	Very High (neutral, slightly negative)

					dereliction represents the loss of representative samples of recent labour practices and worker's lives on the farm High (neutral, slightly negative)				
	Socio-economic: Generation of local economic stimulus in perpetuity (Creation of employment opportunities as a result of operation of the proposed development. Note that additional indirect stimulus as a result of attracting more tourists to the area would also result.)	Medium (+)	Medium (+)	N/A	N/A	N/A	N/A	N/A	N/A
	Resource- use: Depletion of resources through use of resources such as energy and water and production of waste as a result of domestic activities	Low (-)	Very low (-)	Low (-)	Very low (-)	Low (-)	Very low (-)	Low (-)	Very low (-)
	Nuisance Impacts- Dust: The cultivation or used of the site for grazing would result in the generation of dust which may be a nuisance to surrounding land users, in perpetuity.	N/A	N/A	Low (-)	Very Low (-)	Low (-)	Very Low (-)	Low (-)	Very Low (-)
	Terrestrial Biodiversity	Low (+)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Phase	Impact	Alternative 1		Alternative 2		Alternative 3 (Preferred)		No-Go Alternative 1		No-Go Alternative 2		
		Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Operational Phase	Freshwater: Stormwater discharge into natural areas – water quality impacts.	Medium (-)	Low (-)	Medium (-)	Low (-)	Low (-)	Negligible	Low (-)	Low (-)	Medium (-)	Medium (-)	
	Freshwater: Stormwater discharge into natural areas – water quantity impacts.	Low to medium (-)	Low (-)	Low to medium (-)	Low (-)	Low (-)	Negligible	Low (-)	Low (-)	Low (-) to medium (-)	Low (-) to medium (-)	
	Freshwater: Proximity of buildings and human activity to the wetlands and Dwars River. This may lead to local disturbance of fauna and flora, through noise, light, trampling, etc. Fauna may move away from the site.	Low to medium (-)	Low (-)	Low to medium (-)	Low (-)	Low to medium (-)	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)
	Freshwater: Disturbance of soils for landscaping / maintenance of gardens/agricultural activities. Alien or invasive seeds and seedlings may be transported onto site. Alien vegetation is well adapted to establishing on previously disturbed soils and road verges.	Low (-)	Low (+)	Low (-)	Low (+)	Low (-)	Low (+)	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)
	Ecological- Freshwater: On-site treatment of wastewater – impacts on water quality	Medium (-)	Low to medium (-)	Medium (-)	Low (-)	Low (-)	Negligible/ Low (-)	Low (-)	Low (-)	Low (-)	N/A	N/A

Mitigation and Response

The findings and recommendations of the specialist studies have been recorded in the EMPr to ensure effective planning, design, development, and operational management of the proposed development.

The mitigation measures from heritage specialists are planning and design-related and have either been incorporated into the proposed layout (e.g. low key design, tight building footprint, hybrid approach to retention vs demolish and rebuild, etc) or landscaping intent (e.g. proposed wilderness feeling.), or they would be considered in detail design, with certain measures being incorporated into the EMPr. This would guide development in such a way that the sense of place would be in synergy with the surrounding social heritage and landscape context and be respectful of the current sense of place through appropriate use of architecture for the existing buildings. The location of the site itself is along an historic route and the proposed development, if carried out sensitively, would serve to reconnect the farm with the communities in a positive way. The potable pipe routing has not been found to have any impact on heritage resources, but there would be archaeological monitoring required (as well as for work on the New Retreat site) in the unlikely event that archaeological material is unearthed during construction activities. This is included in the EMPr.

Many of the mitigation measures from the freshwater ecologist are already included in the proposed layout, and the preferred layout has been guided by the freshwater impacts and ecological buffers (i.e. the layout has been devised to reach a preferred alternative that located the sewage lines and conservancy tank beyond ecologically sensitive areas and also maximises on permeable surfaces for stormwater management), landscape plan (e.g. treatment of the ecological corridors and inclusion of less invasive structures therein) and stormwater management plan, while the remaining conditions are more management based and would be implemented through the EMPr (noting that all mitigation measures are nonetheless included in the EMPr as it covers the planning and design phase as well). These measures have been included to ensure low adverse impacts on the freshwater system and to provide a positive impact thereon as well.

The recommendations from the terrestrial compliance statement are minimal, only requiring that some species on the landscape list be included, and this has been done in the Landscape Plan.

The remaining specialists such as structural engineers, civil services engineers and transport engineers and geotechnical engineers have also made recommendations in terms of design and planning to adequately service and develop the site in such a way that does not have significant adverse impacts off-site. The transport measures are included in the proposed layout (i.e. parking area, access points) and also in the EMPr, while the stormwater management plan is incorporated into the proposed services layout and has included the high-level mitigation measures of the freshwater ecologist (noting that there are additional mitigation measures that must be included in detail design). Water and electricity are available on the existing network, as per confirmation from the Stellenbosch Municipality and Eskom, respectively. The flood line analysis has also been considered in the civil services report and design.

Overall, all the mitigation measure recommended by the team of specialists involved in this project and assessment are considered important and have been included in the EMPr. There are no measures which have been excluded from the EMPr and only one that was edited by the EAP to add clarity when extracted from the specialist report (within which the context serves to clarify the point).

Public Participation

Given the triggers in terms of the NEMA and the NHRA, the public participation process has been integrated.

The PPP Plan approved by the DEA&DP on 13 October 2020 and the updated PPP Plan approved on 29 November 2021, exceed the minimum legislative requirements prescribed in regulation 41 of the EIA Regulations, 2014 (as amended), but have been aligned with the requirements of the Standard Operating Procedure agreed between the DEA&DP and Heritage Western Cape (HWC) on December 2015. The PPP has included the following pre-application activities (noting that no alternative sites have been considered in this impact assessment process):

- A pre-application draft BAR was circulated for public comment for a period of 35 days from 6 November 2020 to 10 December 2020 with the notification (in the form of a letter) to the preliminary I&AP database being done by email and regular post (for those I&APs who do not have email addresses)
- Hard copies of the documentation, as well as the executive summary, were made available at the Pniel Public Library, the Pniel Museum and the Stellenbosch Public Library and the availability at these locations was advertised to the community through placement of notices in this regard at several key locations throughout the community;
- The executive summary and a comment box were also left at the Pniel Museum and Pniel Public Library for I&APs who cannot access the internet;
- The pre-application Draft BAR was available for download from Chand's website, the English and Afrikaans Executive Summaries were also made available for separate download (to limit data use) from Chand's website;
- Written notice to the municipal councillor of the ward in which the site is located was done and a site meeting was held with the Ward Councillor of Lanquedoc (noting that the Ward Councillor for Pniel was also invited, but did not attend) on 1 February 2021;
- Written notice to the municipality (Local and District Municipality) which has jurisdiction in the area was done as part of the notification above;
- Written notice to any organ of state having jurisdiction in respect of any aspect of the activity was done as part of the written notification of the availability of the pre-application draft BAR;
- A Focus Group Meeting with key community representatives was held on 22 February 2021.

The PPP has included the following post-application activities:

- The I&AP database has been updated to include registrations received to-date;

- The public review period for the post-application Draft BAR was undertaken for a period of 30 days from 23 November 2021 – 13 January 2022;
- Notification of the availability of the post-application Draft BAR (in the form of a letter) was provided to registered I&APs via email and regular post (for those I&APs who do not have email addresses);
- Hard copies of the documentation were made available at the Pniel Public Library and the Protea Bookstore in Stellenbosch;
- The executive summary (in English and Afrikaans) and a comment box were also left at the Pniel Public Library for I&APs who cannot access the internet;
- The post-application Draft BAR was made available for download from Chand's website, and the executive summaries made available for download as separate documents (to limit data requirements for I&APs who do not have access to much data).
- Advertisements of the availability of the post-application draft BAR were placed in the Cape Times and the Eikestad Nuus, noting the proposed development, Basic Assessment, Heritage Impact Assessment and MMP submission;
- Site notices providing the information required in terms of Regulations 41 (3) and (4) of the EIA Regulations, 2014 (as amended) were placed on the site boundary, at the main entrance to the farm, as well as at the approximate mid- and end-points of the proposed potable water line routes;
- With respect to the written notice to the owners and persons in control of the site, note that the Applicant is the landowner of the site and the Stellenbosch Municipality owns the road for the line (and Stellenbosch Municipality has provided power of attorney for approval processes to the Applicant);
- Note that there are no legitimate "occupiers" on the site, but users of the site would have been able to see the site notices;
- Written notice to the municipal councillor of the ward in which the site is located was done;
- Written notice to the municipality (Local and District Municipality) which has jurisdiction in the area was done as part of the notification and advertisement above;
- Written notice to any organ of state having jurisdiction in respect of any aspect of the activity has been done as part of the written notification of the availability of this post-application draft BAR.

Following the public review of the post-application Draft BAR, the report was updated with I&AP comments/issues raised and submitted to the DEA&DP for decision-making. Once the DEA&DP has issued their decision (a statutory timeframe of 107 days is allowed for this), registered I&APs will receive notification of the final decision on the application from Chand.

Synopsis and Conclusion

Through this impact assessment investigation, which entailed inputs from the design and engineering team as well as specialists and Bertha grantees (as well as staff and management), a number of environmental impacts were identified and considered.

Those aspects that influenced the opinion of the Environmental Assessment Practitioner (EAP) are primarily related to the following points:

- The baseline conditions of the site are such that there are sensitive freshwater areas and faunal/ ecological corridors on portions of the site and along the edges thereof which require protection and careful consideration in development;
- The baseline conditions of the proposed potable water line routes are not sensitive, given that these are located within existing roadway, or would be within transformed areas within the road reserve.
- The preferred development alternative has been designed to keep the sewage servicing components away from the sensitive freshwater aspects of the site, to maximise surface permeability for stormwater, and to provide a stable supply of potable water to the site;
- The site and potable water line routings have no apparent archaeological or agricultural sensitivities thereon;
- The fact that there are already buildings on the site as well as access routes and capacity for services;
- The fact that Stellenbosch Municipality has confirmed capacity for potable water from the existing network and that Eskom has confirmed available capacity for electrical supply;
- The need and desirability of the proposal with regard to the establishment of a community activist enterprise which would provide space for local community upliftment organisations in a venue that is close to the communities that would use it as well as one that is meaningfully located along a historic connection route (namely, the Ou Wa-pad). The additional aspect of creating a small number of permanent employment opportunities that would benefit the local community which also provide some direct social benefits to these areas and some limited indirect financial benefits;
- The positive social heritage impact anticipated through re-establishing connectivity between the communities and the farm along the Ou Wa-pad;
- The understanding, based on specialist assessment, that adverse impacts can be mitigated to Low, Very Low, and even Negligible levels for both construction and operation, and that there would be low and medium positive impacts for both the construction and operational phase (for the preferred alternative);
- A portion of the site is proposed for fynbos rehabilitation, which would improve the ecological condition of the site as currently the site has low terrestrial ecological value;
- The alignment of the intentions of the proposed development (with implementation of mitigation) with the WCBSPP; and
- The zoning of the site for agricultural purposes as well as the designation of the area in the Stellenbosch Municipality EMF which indicates that it falls beyond conservation zones.
- The intentional routing of the permanent potable water line within the road (and road reserve) and along the northern edge where there are no sensitivities.
- The routing of the temporary pipeline within existing roadway and on the side of the road where wetlands are not located.

With respect to environmental sensitivities, the site and potable water line routes are of Low botanical and faunal diversity and sensitivity and presents no faunal or botanical constraints to the proposed development, other than the seasonal drainage line on the eastern edge of the site. About 500 m² of low-diversity indigenous vegetation would need to be cleared from the site in total. Snaddon (2021) confirmed five freshwater resources on/near the site and potable water line route, namely the perennial stream 10 which runs along the eastern edge of the site, the Dwars River valley-bottom wetland and the seep wetland to the west of the site, as well as seasonal stream 11 (which would be crossed on existing road by the potable water supply line) and its associated almost perennial hillslope seep. Two Ecological Corridors pass through the New Retreat site, one along Stream 10 and the other following the Dwars River (Snaddon, 2021). Adverse impacts on the freshwater system are anticipated, and these can be mitigated to Low and very low levels of significance. The impacts of greatest severity are linked to the construction activities proposed for the flood protection measures, footpaths, service track (alternatives 1 and 2), amphitheatre, and water pipelines. However, these impacts can be mitigated against, which would reduce the significance of these impacts to, at worst, low negative/negligible, for all three development alternatives (noting that the preferred alternative would have comparatively more negligible impacts). With the implementation of all mitigation measures, specifically including implementation of the rehabilitation plan, effective site monitoring, the conservation of all mature riparian trees, use of compacted earth for pathways in the buffers, and the removal of invasive alien plants from the site, there may ultimately be a positive impact on the environment (Snaddon, 2021). The proposed development could actually enhance the ecological status of this area, by means of increasing the current indigenous plant diversity and cover (as proposed in development layouts) and making it more attractive to a wider range of birds and insects (Helme, 2021).

Service capacity for electricity and refuse is available on the farm already as the proposed development would be incorporated into existing systems and processes. Non-recyclable waste would be removed by an existing private service provider who would dispose thereof at the Vliessershok landfill. There is also confirmed capacity for potable water within municipal supply, as confirmed by the Stellenbosch Municipality. The sewage resulting from the proposed development would be temporarily held/stored *in situ* through the inclusion of a conservancy tank of 30 m³ capacity in the proposed development and the sewage would be removed as required through the existing system on the farm (i.e. by a private contractor who has confirmed capacity to provide the service). Stormwater would also be appropriately accommodated. Stormwater and sewage would be managed in a way that presents low risk to the freshwater systems on and nearby the site and the preferred alternative is the preferred development alternative from a freshwater perspective for this reason.

There would also be limited traffic impacts anticipated and minimal interventions are required. These requirements are included in the EMPr.

Generally, the construction phase impacts for the proposed development (preferred alternative), with mitigation implementation, are anticipated to be Low (-) and Very Low (-) and the operational phase impacts, also with mitigation implementation, are anticipated to be similar with most impacts being Low (-) and one very low (-) and negligible. The negative impacts associated with the proposed development are anticipated to be either very low, low or negligible, while the positive impacts are anticipated to be low and medium. On balance, the positive impacts are greater and would outweigh the negative impacts during the operational phase, while the construction phase impacts would present more negative impacts. However, the construction phase impacts are related to construction activities which are short-term, and generally easily managed and mitigated and would also need to be independently audited throughout the construction phase. There is no single aspect or impact which stands out; however, it is important that the mitigation measures indicated in this report and in the EMPr are followed as the significance of the impacts is contingent thereon.

Layout/servicing alternatives have been assessed in the form of the preferred development alternative (i.e. Alternative 3), development Alternative 1 and development Alternative 2, and the no-go or "existing rights" alternative (i.e. whereby the Applicant may continue with development which does not require approval and is aligned with existing rights whereby rights for agricultural use are presently in place for the farm portion within which the site is located). In addition, alternative design/layout solutions, sewage disposal/treatment solutions and development approach (i.e. demolish and rebuild, vs refurbish, vs redevelop) have been considered within the preferred development alternative, although they have not been formally assessed. In general, the impact of the proposed development is anticipated to be a combination of Medium and Low positive impacts and low to very low negative impacts, while the impact of the existing rights alternative would largely be very low, low and medium negative, with no positive impacts and possible positive impacts of the proposed development in terms of heritage and terrestrial biodiversity which would be foregone. While the no-go alternative (the best case scenario where no intensive crops are intended) is preferred from an aquatic ecology perspective, the preferred development alternative can be mitigated to acceptable levels presenting low risk to freshwater systems and is preferred in this regard over the other two development alternatives assessed. Note also that there are existing rights for the site, which allows for development without the need for Environmental Authorisation and, therefore, the aforementioned impacts indicated for the existing rights alternative are "with mitigation" however mitigation would not be monitored or controlled by any external parties (such as would be the obligation in terms of an Environmental Authorisation).

Therefore, the selection of the preferred alternative has been based on the needs of the Applicant in terms of the easiest way to support social and environmental activism (and also to create a small number of jobs for the local community) through the utilisation of existing, unused and derelict infrastructure and servicing it most efficiently, effectively and reliably in a manner which responds sensitively to the cultural and social landscape in such a way that contributes to redress in a meaningful way and that does not unacceptably compromise the quality of the natural environment. An additional preference for this alternative is also that it is largely supported from a spatial planning perspective, particularly on the basis of 're-use' and rehabilitation of existing derelict structures as a primary planning and design principle, and there is a fynbos rehabilitation component which would have a low positive impact on the aquatic and terrestrial ecology of the site. There is also rehabilitation for the stream to the north-east of the site (i.e. stream 10).

It is believed that the impacts that have been identified have been adequately addressed through the proposed development plan, landscape plan and services plans or would be mitigated to acceptable levels through the final design and the strict implementation of the EMPr (which incorporates all specialist recommendations and the river rehabilitation plan), as well as suggested conditions of authorisation (if the DEA&DP grants authorisation and includes those suggestions therein). A number of specialists have been involved in order to inform the investigation which provided rigour, independence, and transparency in the process as well as appropriate skills and expertise.

The EAP has been encouraged by the fact that the applicant and design team have been receptive to the issues raised by specialists and other commenting parties (such as DWS, DEA&DP, etc.) and appropriate mitigation and rehabilitation has been put in place. In short, the design and mitigation measures have been a co-operative and iterative process between all parties concerned.

Comments received from I&APs during the pre-application and post-application public review period of the Draft BAR have been included and responded to in this final report. The proposed development and specialist assessments were subject to stakeholder engagement with feedback received from I&APs during the pre-application and post-application Draft BAR public review period. All comments received have been incorporated into this final iteration of the BAR, which has been submitted to the DEA&DP for their decision-making.

The decision for the authorisation lies with the Competent Authority and should be taken based on the information provided. The decision should be taken by considering all impacts and the way they weigh up against one another, as well as the I&AP comments and the responses provided thereto.

In conclusion, it is believed that the preferred alternative represents responsible development which would be suited to the site. It is therefore believed that the preferred alternative (i.e. Alternative 3/ the proposed development) as described in this report, subject to the implementation of the mitigation measures included in this report and the EMPr could be developed.

Should the DEA&DP grant Environmental Authorisation for the proposed development, it is also critical that mitigation measures required by specialists and specifications documented in the EMPr are adhered to. The remaining recommended conditions of authorisation are listed in Section J 2.2. of the BAR. The report for final decision-making has been provided to the DEA&DP since the public participation process has been concluded.

SECTION A: ADMINISTRATIVE DETAILS

Highlight the Departmental Region in which the intended application will fall	CAPE TOWN OFFICE:		GEORGE OFFICE
	REGION 1 (City of Cape Town, West Coast District)	REGION 2 (Cape Winelands District & Overberg District)	REGION 3 (Central Karoo District & Garden Route District)
Duplicate this section where there is more than one Proponent	Boschendal (Pty) Ltd represented by Mr. William George		
Name of Applicant/Proponent:	Boschendal (Pty) Ltd		
Name of contact person for Applicant/Proponent (if other):	Mr. William George		
Company/ Trading name/State Department/Organ of State:	Boschendal (Pty) Ltd		
Company Registration Number:	2002/023534/07		
Postal address:	P.O Box 35		
	Pniel Main Road	Postal code: 7681	
Telephone:	(021) 870 4249	Cell: 082 559 9100	
E-mail:	specialproject1@boschendal.co.za	Fax: Not Applicable	
	(Note that this email address has been updated since submission of the application form.)		
Company of EAP:	Chand Environmental Consultants cc		
EAP name:	Marielle Penwarden		
Postal address:	PO Box 238		
	Plumstead	Postal code: 7801	
Telephone:	(021) 762 3050	Cell: -	
E-mail:	marielle@chand.co.za	Fax: 086 665 7430	
Qualifications:	Marielle Penwarden: BSc Hons Environmental Management (UNISA), BSc Environmental Management (UNISA)		
EAPASA registration no:	Marielle Penwarden SACNASP Registration: 600001/15, EAPASA Registration: 2019/1988		
Landowner	Boschendal (Pty) Ltd represented by Mr. William George		
Portion 11 of farm 1674, Paarl:	As above		
Name of landowner:	As above		
Name of contact person for landowner (if other):	As above		
Postal address:	As above		
	As above	Postal code: 8000	
Telephone:	As above	Cell: -	
E-mail:	As above	Fax: -	
Name of Person in control of the land:	Mr. William George		
Name of contact person for person in control of the land:	As above		
Postal address:	As above		
		Postal code:	
Telephone:	As above	Cell: As above	
E-mail:	As above	Fax: ()	
Landowner	Stellenbosch Municipality (refer to Appendix O for Power of Attorney in this regard)		
Road and Road Reserve for water pipelines: Name of landowner:	Stellenbosch Municipality (refer to Appendix O for Power of Attorney in this regard)		
Name of contact person for landowner (if other):	Anthony Barnes		
Postal address:	Plein Street		
	Stellenbosch	Postal code: 7600	
Telephone:	021 808 8111	Cell: Not applicable	

E-mail:	Anthony.barnes@stellenbosch.gov.za	Fax: Not applicable
Name of Person in control of the land:	Mr. William George	
Name of contact person for person in control of the land:	As above	
Postal address:	As above	
		Postal code:
Telephone:	As above	Cell: As above
E-mail:	As above	Fax: ()

Duplicate this section where there is more than one Municipal Jurisdiction Municipality in whose area of jurisdiction the proposed activity will fall: Contact person: Postal address: Telephone: E-mail:	Stellenbosch Municipality	
	Mr. Schalk van der Merwe	
	Plein Street	
	Stellenbosch	Postal code: 7600
	+27 21 808 8679	Cell: -
	schalk.vandermerwe@stellenbosch.gov.za	Fax: +27 21 886 6899

SECTION B: CONFIRMATION OF SPECIFIC PROJECT DETAILS AS INCLUDED IN THE APPLICATION FORM

1.	Is the proposed development (please tick: <input type="checkbox"/> New <input type="checkbox"/> Expansion <input checked="" type="checkbox"/>
2.	Is the proposed site(s) a brownfield of greenfield site? Please explain. The site is a brownfields site because it was previously used as worker accommodation. There are existing buildings on the site, and it is within an area which has been previously cleared. The proposed interim potable water supply route is also a brownfields site as it comprises a compacted dirt road. Similarly, the long-erm potable water pipeline route comprises a tarred road and compressed dirt adjacent to the black top.
3.	<p>For Linear activities or developments</p> <p>Although the proposal has certain linear components like service lines, these largely fall within the development footprint of the site of the proposed development as indicated in 4 below. None of these exceed the thresholds indicated in the Listed Activities, and therefore do not trigger the need for Environmental Authorisation.</p> <p>Note that there is are two potable water lines that would extend beyond the site. The interim (temporary solution) pipeline would extend east along Hoof Road and turn north to connect to an existing irrigation line north-west of the main site. The proposed long-term water line would extend along Hoof Road, to an existing municipal connection in Lanquedoc. Both of these solutions apply to the preferred servicing alternative. Both lines would be developed within the existing footprint of the road and/or road reserve/ within a compacted dirt pathway. The details indicated below pertain to these two segments of pipeline.</p>
3.1.	Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes: The temporary potable water pipeline would be located within the road/road reserve which crosses Farm 11/1674 (which is owned by the applicant). The proposed final potable water line to Lanquedoc is located within the road and road reserve either on the Boschendal Estate or within Municipal land (i.e the road and road reserve belongs to Stellenbosch Municipality). Lanquedoc Main Road, 2/1176 and 8/1173 and Ou Wa-pad, Farm 11/1674 and 1730, Dwars River Valley, Stellenbosch
3.2.	Development footprint of the proposed development for all alternatives. Approx. 141 m² + 398 m² = 539 m² <u>Only applicable to the preferred alternative (i.e. Alternative 3):</u> <ul style="list-style-type: none">Interim water supply pipeline: calculated as approx 282 m in length x 0.5 m wide for trenching.Long-term water supply pipeline: calculated as approx 796 m in length x 0.5 m wide for trenching. (note that both pipelines would be within existing roadway and/or road reserve)
3.3.	Provide a description of the proposed development (e.g. for roads the length, width and width of the road reserve in the case of pipelines indicate the length and diameter) for all alternatives. <u>Only applicable to the preferred alternative (i.e. Alternative 3):</u> Two potable water supply pipelines are proposed.

Following confirmation of requirements of Stellenbosch Municipality, the long-term plan is for bulk water to be sourced from the external municipal network in Lanquedoc (Middelmann & Hurworth, 2021). An underground 160 mm diameter uPVC link main is proposed to be constructed from a connection point on the Lanquedoc PRV water distribution zone, on the fringe of the Lanquedoc estate, along Hoof Road and into Boschendal (refer to Figure 5) (Middelmann & Hurworth, 2021). The routing of the western segment of the proposed water line would be determined on site but would be limited to the northern side of the roadway. It would either be routed within the northern half of the road (i.e. hard/blacktop) or between the existing hard top and row of gum trees alongside it (there is currently compacted, bare ground presently between the gum trees and hard/blacktop). Land-owner permission for this pipeline to traverse private property not owned by the applicant must still be obtained.

In the interim, it is proposed that potable water be sourced from an existing irrigation line which runs north-east of the site. The proposal involves tying into the existing York Dam 300 mm diameter private irrigation supply line that currently feeds a part of the Boschendal Estate irrigation reticulation. There is an existing "take-off" for water supply to existing houses just off Hoof Road within the York Farm boundary (refer to Figure 4). The existing connection would be upgraded to a 160 mm connection and a new 160 mm diameter uPVC Class 12 pipe would be laid to the Retreat. The new pipe route would extend 282m and be installed within the road reserve on Hoof Road (Middelmann & Hurworth, 2021). The pipe would cross a perennial stream where approximately 20m would be fastened to the existing culvert. The pipeline will terminate at the entrance of the Retreat. A 160 mm diameter uPVC Class 12 connection will be tied into the main line and feed the proposed meter chamber within the development boundary (Middelmann & Hurworth, 2021). The irrigation water would be treated to achieve drinking water to potable water standards.

3.4. Indicate how access to the proposed routes will be obtained for all alternatives.
The road already exists, and the potable water lines would be located within the black top area and/or the compacted dirt pathway alongside the road, within the road reserve.

3.5.	SG Digit codes of the Farms/Farm Portions/Erf numbers for all alternatives	Farm 11/1674, Paarl: C05500000000167400011Farm 1730, Paarl: C05500000000173000000 Farm 2/1176, Paarl: C05500000000117600002 Farm 8/1173, Paarl: C05500000000117300008
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3.6.	Starting point co-ordinates for all alternatives (only Applicable to Alternative 3)		
	Latitude (S)	33°	53'
	Longitude (E)	18°	58'
	Middle point co-ordinates for all alternatives (only Applicable to Alternative 3)		
	Latitude (S)	33°	53'
	Longitude (E)	18°	58'
	End point co-ordinates for all alternatives (only Applicable to Alternative 3)		
	Latitude (S)	33°	53'
	Longitude (E)	18°	58'

Note: For Linear activities or developments longer than 500m, a map indicating the co-ordinates for every 100m along the route must be attached to this BAR as Appendix A3.

4.	Other developments	
4.1.	Property size(s) of all proposed site(s): Note that this applies to Farm 1674/11	76.06Ha= 760,600m ²
4.2.	Developed footprint of the existing facility and associated infrastructure (if applicable): There are eight remnants of old worker cottages, each of which are approximately 147 m ² in extent. Refer to the Site Development Plan in Appendix B1 for the details for each.	1,182.9m ²
4.3.	Development footprint of the proposed development and associated infrastructure size(s) for all alternatives: This is calculated as follows: Existing buildings (1,182.9 m ²) + Additions to buildings (141 m ²) + External covered Areas (240 m ²) + hard landscaping (5,119 m ²) + soft landscaping (approx. 12,054 m ²) (noting that 6,560 m ² would be rehabilitation of the fynbos landscape) + structures for flood stabilisation and river rehabilitation measures (±2,550 m ²) Note that this applies to all three development alternatives assessed.	Approx. 21,286.9 m ² rounded to approx. 2.13 Ha
4.4.	Provide a detailed description of the proposed development and its associated infrastructure (This must include details of e.g. buildings, structures, infrastructure, storage facilities, sewage/effluent treatment and holding facilities). Note that the below is a description of the preferred Alternative (Alternative 3).	

In response to the DEADPs comment on the post-application Draft BAR, the preferred Alternative (Alternative 3) and how proposed development components relate to Listed Activities are clarified below:

Overall Description

The Site Development Plan proposed is indicated in Figure 1 with a more detailed image and set of documents included in Appendix B1 (a) and B1 (b).



Figure 1 Site Development Plan, existing building footprints indicated in red (source: Tsai Design Studio, 20 August 2020)

The proposed development entails the development of a “New Retreat”, for the Bertha Foundation which draws on the positive attributes as well as lessons learned from the current Retreat on the Boschendal Estate, located on a portion of Portion 3 of Farm 1674, The Retreat is a Bertha Foundation initiative and the overall intention is for the proposed development to provide a transformative space where people can gather, align and work to embolden the field for social justice. The space would provide sanctuary for organisations, movements, and individuals most marginalised within society. These could range from local community organisations or individuals to those from international origins. The New Retreat would be used to host any event which furthers the aims of social and environmental justice such as decision-focused meetings, training and capacity-building, strategic planning and reflection sessions, retreats and team-building activities, convenings and exchanges for partnership strengthening/development, film screenings and discussions, and community recreation/engagement programmes.

The proposed development would include internal and external spaces for convening and accommodation for attendees, as well as the ancillary areas which would support this such as kitchens and staff facilities.

It is presently anticipated that the proposed development would have the capacity to accommodate up to approximately up to 34 overnight guests/attendees.

Buildings

The existing building footprints of the remnant cottages on site would be used, where possible and the proposed development would comprise of the following buildings:

- Accommodation buildings to accommodate up to 34 overnight guests/attendees, which include bedrooms, bathrooms, a lounge/communal living area and covered outdoor areas/deck space;
- A conference facility which includes a small conference venue and up to approximately two breakaway areas;
- A communal dining and lounge area;
- An administration building with a reception and waiting lounge / library;
- Meeting room(s) for community programmes and a communal library; and
- A kitchen area, with space for staff dining, lockers, and ablution facilities.

Landscaping

The interventions would connect the site to the farm by opening up views to the surrounding landscape, watercourse, and mountains, and forming new paths that connect the site to the adjacent watercourse and the Dwars River. The overall design intent is to integrate the development in the landscape and provide a multitude of diverse spaces that are comfortable for a range of people. The landscape plan in **Error! Reference source not found.** indicates a variety of spaces from the large central gathering space, the point of arrival to more intimate spaces for solitary pursuits and isolation in areas such as the boardwalks along the stream. The use of peripheral areas for guests/attendees to connect to nature is facilitated using a continuous footpath through the rehabilitated fynbos and a productive kitchen garden (*pers comms, A. Bormans, 29/05/2020*). The interface with the historic Ou Wa-pad would be softened with extensive planting (*pers comms, A. Bormans, 29/05/2020*).

The intention is that all spaces, including the parking area, be multi-use spaces to accommodate varying functions such as occasional markets, grantee gatherings, community gatherings, and play activities (NMA, August 2020).

In terms of sustainable drainage, stormwater would be managed primarily by infiltration through permeable surfaces. Car parking areas would be constructed from permeable gravel-fix systems, or permeable grass blocks, and edge restraints would be low and/or have drainage gaps. Landscaped pedestrian areas and planting would also be permeable. Surface flow that may be generated by high rainfall events would be allowed to pass through the development by surface escape, without causing flow concentration. Therefore, the source of water for the landscaping would be a combination of municipal supply, rainfall and stormwater run-off (infiltration) Refer to the Stormwater Management description below for more information.

There would be a combination of hard and soft landscaping measures applied.

Hard landscaping would include an open courtyard and a network of boardwalks, as well as an outdoor landscaped amphitheatre (which would be grassed). Proposed parking areas would also be landscaped, but these would be tucked within further planting to soften the entrance and interface with the Ou Wa-pad.

Soft landscaping would also be used to bridge scale with the proposed buildings and break-away areas as well as to provide screening and synergy with the surrounding landscape. Tree lines as well as rehabilitated fynbos corridors would be implemented to provide strong connections to the broader landscape (*pers comms, A. Bormans, 29/05/2020*). There would be peripheral areas to connect to nature through the provision of a continuous footpath through the rehabilitated fynbos and productive kitchen garden (*pers comms, A. Bormans, 29/05/2020*). The interface with the historic "Ou Wa-pad" would be softened with extensive planting. The intention would be for the site to be as self-sufficient as possible, and so a vegetable garden is a major component of the landscape plan.

The Landscape Plan is indicated in Figure 2 as well as in Appendix L.



Figure 2: Landscape Plan (source: Terra+, 29 March 2021)

Transport (access and parking):

There is an existing road network which provides access to the site. Access to the site would be obtained via the Ou Wa-pad, a 6 m wide gravel servitude road that traverses Portion 2 of Farm 1176 (which is not part of the Boschendal Estate and Farm 1730 of the Boschendal Estate, and which takes access via a security gate (which is owned and managed by Boschendal) off the Lanquedoc Main Road (which is accessible via Helshoogte Road) (Pretorius & Sequeira, 2020). The access control will be retained (Pretorius & Sequeira, 2020).

A total of 24 parking bays (which includes 7 visitors parking bays) are proposed and confirmed as sufficient (Pretorius & Sequeira, 2020).

Internal access would be via a short, single new access road off the Ou Wa-pad, to a small parking area along the edge of the Ou Wapad (NMA, August 2020). This would serve to limit the movement of vehicles on and around the site (NMA, August 2020). Internal access to the various components of the proposed development would occur via a series of informal footpaths and landscaping interventions as described in the Landscaping section above.

Refer to Appendix G(a) for the Transport Impact Assessment.

Transport (public transport infrastructure):

There are public transport services in the form of mini-bus taxis available along the Helshoogte Road (Pretorius & Sequeira, 2020). A bus turning route (refer to Figure 3) for shuttle busses dropping off Retreat attendees is proposed south of the proposed development, making use of the existing dirt road, as the Ou Wapad is too narrow for a bus to turn around (Pretorius & Sequeira, 2020). The bus would need to alley dock by means of reversing into the gravel road and then driving out again (Pretorius & Sequeira, 2020).



Figure 3 Proposed Bus Turning Route (source: Pretorius & Sequeira, 2020)

Refer to Appendix G(a) for the Transport Impact Assessment.

Transport (NMT):

No additional pedestrian and cycling facilities are required for the proposed development (Pretorius & Sequeira, 2020). The Ou Wapad is a private, access-controlled gravel road and visitors to the farm could walk along the Ou Wa-pad under these local traffic volume conditions (Pretorius & Sequeira, 2020).

Refer to Appendix G(a) for the Transport Impact Assessment.

Stream Rehabilitation:

Rehabilitation to the stream to the north of the site (i.e. stream 10) would also take place. There is a detailed rehabilitation plan included in the EMPr (refer to Appendix H) and the Aquatic Biodiversity Impact Assessment Report (refer to Appendix G(e)), but Snaddon (2021) indicates the following necessary rehabilitation requirements:

- Bed (head-cut) Stabilisation;
- Bank (lateral) stabilisation);
- Removal of invasive alien plant species; and
- Replanting of rehabilitated areas.

A drawing of the required rehabilitation measures is included in Appendix B1.

Regular maintenance would also be required, hence the Maintenance Management Plan in the EMPr (refer to Appendix H).

Services:

Proposed services are indicated in Figure 4, Figure 5 & Figure 6 and are outlined below.

Water

There are no potable water networks in the vicinity of the proposed development (Schoonwinkel, 2020).

The total Average Annual Daily Demand (AADM) for the proposed development is estimated at 13 400 L/day (Schoonwinkel, 2020). The average estimated daily flow is 0.16L/s and a peak factor of 2.4, therefore the network would be designed for a flow of 0.38 L/s (Schoonwinkel, 2020). The internal reticulation network would have pipes of 110 mm in diameter and the services are depicted in Figure 6 (Schoonwinkel, 2020).

Two bulk water supply lines are proposed and are being applied for; 1) an interim private supply which will source from an existing private irrigation line and 2) a long-term solution which will source water from the municipal network in Lanquedoc. These two solutions are described below.

1) Interim bulk water supply:

The proposed interim solution involves tying into the existing York Dam 300 mm diameter irrigation supply line that currently feeds a part of the Boschendal Estate irrigation reticulation. There is an existing "take-off" for water supply to existing houses just off Hoof Road within the York Farm boundary (refer to Figure 4). The existing connection would be upgraded to a 160 mm connection and a new 160mm diameter uPVC Class 12 pipe would be laid to the Retreat. The new pipe route would extend 282m and be installed within the road reserve on Hoof Road (Middelmann & Hurworth, 2021). The pipe would cross a perennial stream where approximately 20 m would be fastened to the existing culvert. The pipeline will terminate at the entrance of the Retreat. A 160 mm diameter uPVC Class 12 connection will be tied into the main line and feed the proposed meter chamber within the development boundary (Middelmann & Hurworth, 2021). In the interim, a holding tank and combination sand filter and Ultra-violet water treatment plant will be installed to treat the "irrigation water" to the required quality and standard for Municipal potable water. The internal reticulation is described in the next paragraph and would be for both the interim and final potable water supply solutions.



Figure 4: Proposed temporary bulk water supply (source: MH&A DRG No. C5960/07) – updated to include freshwater ecological buffers

2) Long-term bulk water supply:

In the long-term and following permission from affected landowners, bulk water would be sourced from the external municipal network in Lanquedoc (Middelmann & Hurworth, 2021). An underground 160 mm diameter uPVC link main is proposed to be constructed from a

connection point on the Lanquedoc PRV water distribution zone, on the fringe of the Lanquedoc estate, along Hoof Road and into Boschendal (refer to Figure 5) (Middelmann & Hurworth, 2021). The routing of the western segment of the proposed water line would be determined on site but would be limited to the northern side of the roadway. It would either be routed within the northern half of the road (i.e. hard/blacktop) or between the existing hard top and row of gum trees alongside it (there is currently compacted, bare ground presently between the gum trees and hard/blacktop). A bulk meter would be required at the Boschendal boundary, proposed at a convenient location outside the security gate and to the approval of the local authority, and the pipeline would continue as a private main up to the Retreat development, on Portion 11 of Farm 1674 (Middelmann & Hurworth, 2021). The pipeline would bridge various stormwater culverts by surface fixing. This link main is in principle in accordance with the alignment proposed in the GLS capacity analysis report and accompanying schematics for the development, dated 5 December 2020, and has been formally endorsed by confirmation of capacity by the local authority.

The water demand for the New Retreat is estimated at 13.4 m³ per day, and this capacity is available in the network (refer to Appendix E16) (Middelmann & Hurworth, 2021). The main would terminate at the development, and a supply off this main would provide potable and fire water to the Retreat. This supply would be managed through a private sub-meter and would separate on-site into a 110 mm uPVC Class 16 fire ring and a 50 mm uPVC Class 12 domestic system (Middelmann & Hurworth, 2021).



Figure 5 Proposed Long-Term Bulk Water Line to Lanquedoc (source: MH&A, Drg No C5960/06, Rev C) - updated to include freshwater ecological buffers

Refer to Appendix G(b) for the Engineering Services Reports.

Sewer:

There is no existing functional sewer system for development and the historic pipe and septic tanks systems have been abandoned and will not be rehabilitated (Middelmann & Hurworth, 2021). These existing septic tanks are located in close proximity to the cottages, which is not ideal for future development, as this does not meet the requirements of section 133(2) of the Stellenbosch Municipality Water Services Bylaw (August 2017), which states that soakaways are not permitted within 5 metres of a dwelling (Nadeson, 2019). For this reason, the entire sewer infrastructure requires replacement.

Based on the water demand calculations, the Peak Day Dry Weather Flow (PDDWF) is calculated at 10kl/day (Middelmann & Hurworth, 2021).

A conservancy tank of 30m³ capacity would be utilised to temporarily hold/store the sewage and wash-water until off-site disposal occurs (Middelmann & Hurworth, 2021). The wastewater from this tank would be pumped out by a honeysucker as required for off-site disposal. The siting of the various components has been intentionally devised in order to pose the least risk possible on freshwater systems on and around the site. The siting of the proposed pumpstation, pipelines, and conservancy tank has been aimed at locating the conservancy tank further from the stream by placing it on the opposite side of the Ou Wa-pad, to the south-west of the site. Note that in the long-term, the intention is to connect to municipal supply, but this would be done when capacity is available and approved by the Municipality and would be the subject of a separate application for Environmental Authorisation, should there be any Listed Activities triggered. DWS has confirmed (via an email dated 18 May 2021) that the proposed development (Alternative 3) can be registered as a General Authorisation. Proof of the registration process is included in Appendix M.



Figure 6 Proposed Civil Engineering Services and Flood Protection Measures (source: MH&A, from drawing “General Arrangement”, DWG No C5960/03 Rev D) - updated to include freshwater ecological buffers

An existing private contractor who currently services the larger Boschendal farm would be used to remove sewage from the site and confirmation of this service is included in Appendix E16.

The proposed water infrastructure does not trigger any Listed Activities under NEMA as the various options are below the capacity thresholds contained in the Listed Activities pertaining to provision of sewage and water networks (particularly pipeline diameters). Water storage requirements are also below thresholds indicated in the Listed Activities.

Refer to Appendix G(b) for the Engineering Services Report.

Electricity:

The proposed development will be supplied with a 200 KVA (300 Amp three phase) low voltage connection to the new site reticulation (pers comms, R. Clark, TRAC, 25/03/2021). The new supply would be taken from the existing Kylemore Farmers 1 Eskom 11 kV line (refer to Figure 7) via a new 11kV Tee-off. This would be installed to run across the gravel farm road from the existing Eskom 11 Kv overhead line (pers comms, R. Clark, TRAC, 25/03/2021). The new line would feed a new 11 kV/420 Volt 200 Kva pole-mounted transformer, installed on

the site and connected to a new 300Amp (200kva) three-phase low voltage Eskom bulk supply meter point (pers comms, R. Clark, TRAC, 25/03/2021). It is also the intention to supplement power from the grid with rooftop solar panels in the future (pers comms, R. Clark, TRAC, 25/03/2021).



Figure 7 Existing Electrical Connection (source: Schoonwinkel, 2020)

Eskom have confirmed that sufficient capacity is available, and this letter is included in Appendix E16.

The reticulation network within the development boundary would be a private network and would be designed to comply with the standards and requirements of SANS 10142 (Schoonwinkel, 2020). An underground internal low voltage network would be installed from the Eskom bulk supply point to each of the buildings (Schoonwinkel, 2020). The operation and maintenance of the private internal reticulation services would be the responsibility of the Retreat management (Schoonwinkel, 2020). Energy efficient lighting technology would be used as far as possible to reduce the energy requirements of the proposed development (Schoonwinkel, 2020).

The proposed electrical infrastructure does not trigger any Listed Activities under NEMA as they are below the capacity thresholds contained in the Listed Activities pertaining to power. The rooftop solar is also an exclusion under the Listed Activities referring to renewable energy and solar power, and so, would not trigger Listed Activities in terms of NEMA.

Refer to Appendix G(b) for the Electrical Engineering Services Reports.

Refuse:

Refuse will be collected at the Retreat by the farm management and disposed of with the refuse generated on the farm (Schoonwinkel, 2020). Collection of refuse is currently done by a private company who dispose of the waste at a registered site (Schoonwinkel, 2020). Refer to Appendix E16 for evidence of the use of a private contractor who has confirmed capacity to service the Retreat.

These activities do not trigger any Listed Activities under NEMA and/or NEM: WA.

Refer to Appendix G(b) for the Engineering Services Report.

Telecommunications:

A fibre spine is proposed to be installed along Hoof Road in the future, and the development will be equipped with a duct and drawpit system to provide connectivity to all units (pers comms, M. Middelman, MH&A Consulting Engineers, 18/03/2021).

Refer to Appendix G(b) for the Engineering Services Report.

Stormwater:

Stormwater would be managed primarily by infiltration through existing soft or new landscaped or permeable surfaces (Middelmann & Hurworth, 2021). Car parking areas would be constructed from permeable gravel-fix systems, or permeable grass blocks, and edge restraints would be low and/or have drainage gaps. Landscaped pedestrian areas and planting would also be permeable (Middelmann & Hurworth, 2021).

Surface flow that may be generated by high rainfall events would be allowed to pass through the development by surface escape, without causing flow concentration (Middelmann & Hurworth, 2021).

Flood management measures to protect the development from flooding of the adjacent watercourse would be required (Middelmann & Hurworth, 2021). These measures comprise the conversion of the existing culvert crossing on Hoof Road to an engineered low level road crossing to contain flood flow safely under and over the new culverts, within the river corridor (Middelmann & Hurworth, 2021). The existing berm on the development side of the watercourse would also be formalised to be continuous, reprofiled and raised (Middelmann & Hurworth, 2021). The existing head-cut within the stream would be "flooded" (i.e., water would be allowed to pool therein) so that the erosive cut is less likely to move upstream and there would be some low retaining of the channel side embankments in gabions, as well as floor armouring throughout the structure. These measures are in accordance with the Flood Study by Mark Obree of 25 February 2021 and are indicated on the MH&A flood protection drawing C5960 / 05 / 01 ([Refer to Appendix B1](#)).

There would also be rehabilitation measures for the watercourse, as described above.

Refer to Appendix G(b) for the Engineering Services Report as well as to Appendix G(i) for the Flood Report.

DESCRIPTION OF PROJECT COMPONENTS ASSOCIATION WITH NEMA LISTED ACTIVITIES TRIGGERED

The listed activities triggered by the proposal relate to the infilling of the wetlands as well as clearing of approximately 500 m² indigenous vegetation and the expansion of the development footprint for tourism use to accommodate a maximum of 34 people. They also relate to development within wetlands and within 32 m of a watercourse.

The various aspects of the proposed development – [for the preferred Alternative \(Alternative 3\)](#) - related to the Listed Activities are included in Table 1.

Table 1 Development Components of the preferred Alternative relative to triggered Listed Activities

Proposed project component	Nature/ Description	Relevant Listed Activity
<p>Footpaths</p>	<p>Footpaths would be located within 32 m of the stream at the site (i.e., stream 10) and within the ecological buffer (15 m) of the stream. Refer to Figure 8 for the extent of the footpaths in proximity to the stream.</p>  <p>Figure 8: Extent of footpaths in proximity to Stream 10 (blue line) and ecological buffer (turquoise lines). The ecological buffer is 15m in extent. A distance approx. 32m from the stream is also indicated for scale.</p> <p>Footpaths will also be within 32 m of the Dwars River valley-bottom wetland and partial infilling of the wetland would occur. The extent of encroachment is depicted in Figure 9 below.</p>	<p>Listed Activity 12 & 19 of Listing Notice 1</p> <p>Listed Activity 14 of Listing Notice 3</p>

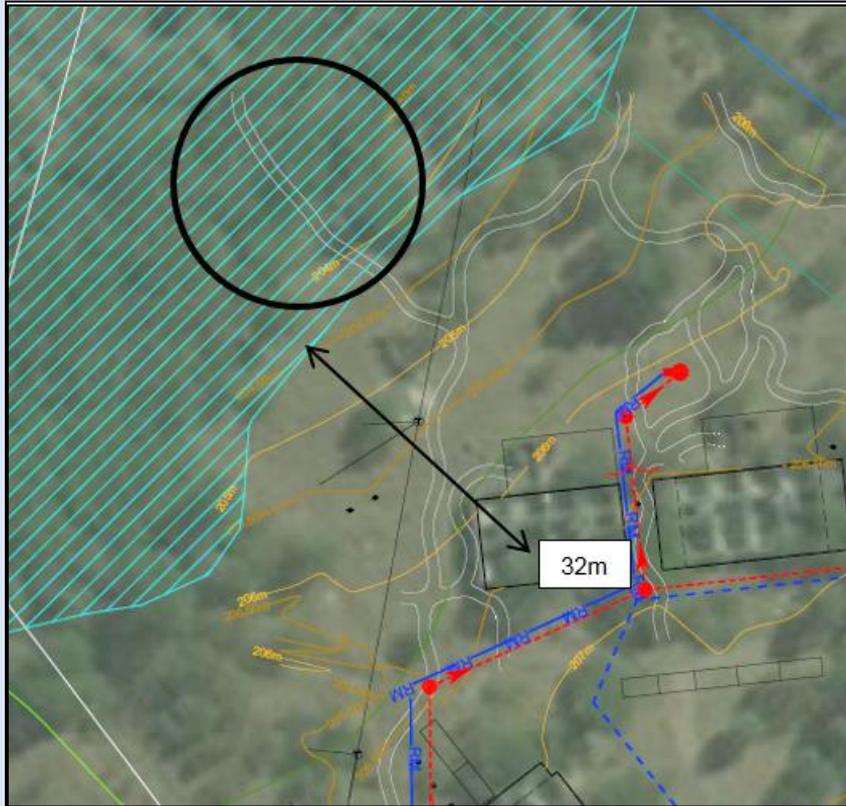


Figure 9: Extent of footpaths within approx. 32m of the Dwars River valley-bottom wetlands (light blue shade) and extent of encroachment into wetland (circled in black)

<p>Informal Amphitheatre</p>	<p>The proposed informal amphitheatre will be located within 32 m of the Dwars River valley-bottom wetland and will be partially located <u>within</u> the Dwars River valley-bottom wetland resulting in some encroachment into the edges of it which would entail the movement of >10 m³ of material.</p> <p>Refer to the Landscape Plan included in Appendix L for the proposed position of the amphitheatre.</p>	<p>Listed Activity 12 & 19 of Listing Notice 1</p> <p>Listed Activity 14 of Listing Notice 3</p>
<p>Additional building components and landscaping</p>	<p>All <u>development</u> components (as described above) would require clearing of indigenous vegetation which is located in patches distributed throughout the site. The total combined coverage of all indigenous plants is estimated to be about 500 m² (Helme, 2021) and this would be cleared.</p> <p>A significant component of <u>development</u> structures <u>exceeding 100 m² in total</u> would occur within 32 m of a stream (i.e. stream 10) and a wetland (i.e. the Dwars River valley-bottom wetland). These include:</p> <ul style="list-style-type: none"> • A portion of the outdoor spaces for the community space <u>will be located within 32 m of stream 10 (refer to Figure 10);</u> • A portion of the parking area – 13 parking bays (refer to Figure 11) – will <u>positioned within 32 of stream 10;</u> • The northward expansion of visitors' cottage 1 <u>will be located within 32 m of stream 10 (refer to Figure 12)</u> • The solitary reading/meditation spaces for the visitors' cottages <u>will be located 32 m from stream 10 and the Dwars River valley-bottom wetlands (refer to Figure 13)</u> <p><u>Soft landscaping would also occur within the Dwars River valley-bottom wetland (Refer to the Draft Landscaping Plan in Appendix L).</u></p>	<p>Listed Activity 12 & 48 of Listing Notice 1</p> <p>Listed Activity 14 of Listing Notice 3</p> <p>Listed Activity 12 of Listing Notice 3</p> <p>Listed Activity 19 of Listing Notice 1</p>

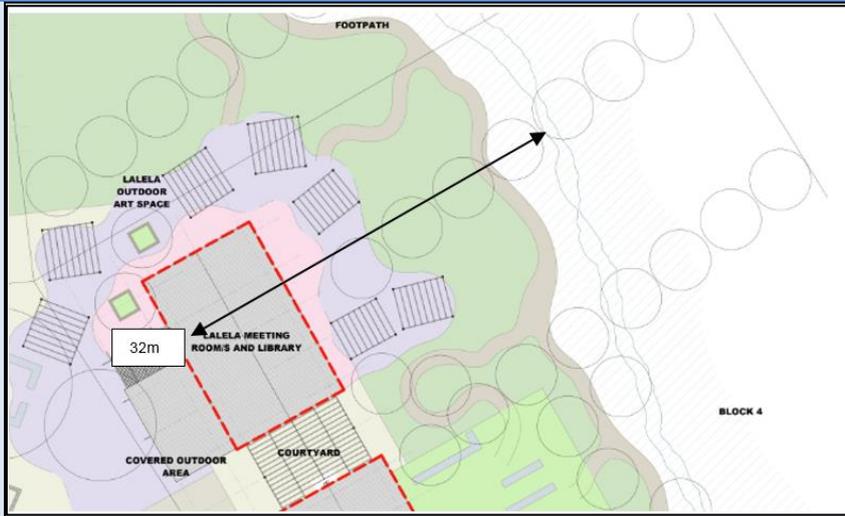


Figure 10: Position of outdoor space structures in proximity to stream 10. Portion of structures will be located within 32m of the stream



Figure 11: Extent of parking area within approx. 32m of Stream 10 (blue line) with ecological buffer in turquoise.

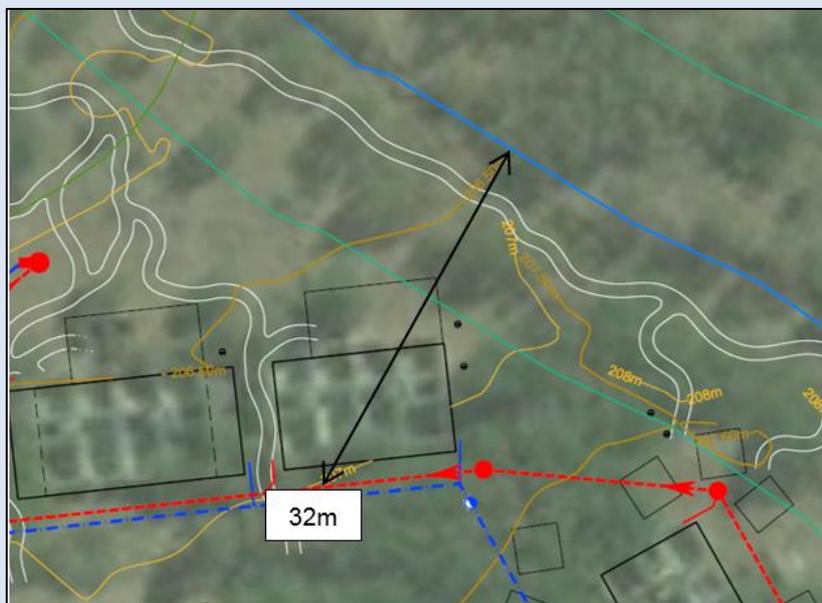


Figure 12: Location of Cottage 1 expansion in proximity to Stream 10. Entire expanded area will be within 32m of the stream.

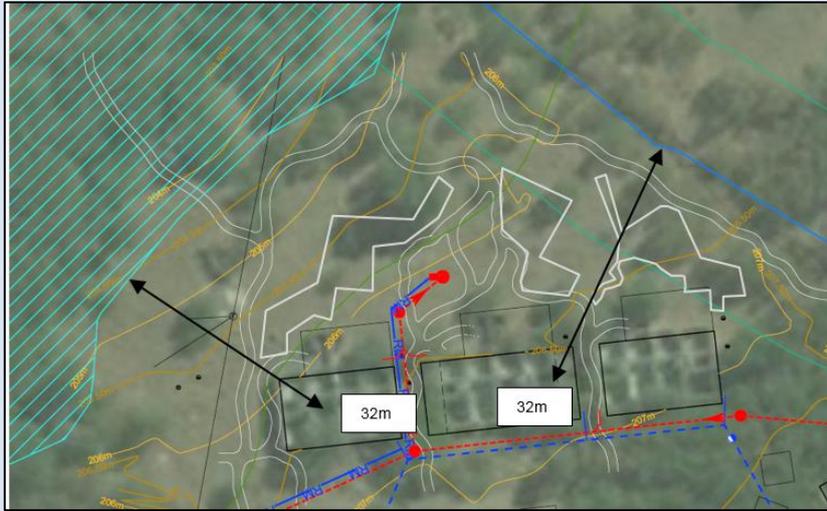
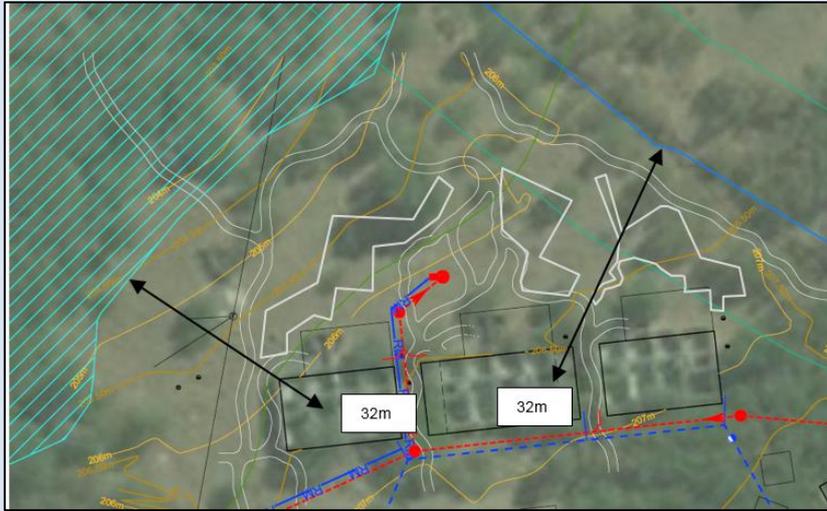


Figure 13: Solitary reading/meditation spaces (x3) in proximity to Stream 10 and the Dwars River valley-bottom wetland

	<p>Figure 12: Location of Cottage 1 expansion in proximity to Stream 10. Entire expanded area will be within 32m of the stream.</p>  <p>Figure 13: Solitary reading/meditation spaces (x3) in proximity to Stream 10 and the Dwars River valley-bottom wetland</p>	
<p>Proposed use and capacity</p>	<p>The use of the site for tourism facilities would accommodate up to approximately 34 people, and this requires expansion upon existing structures.</p>	<p>Listed Activity 6 of Listing Notice 3</p>
<p>Flood Protection Measures</p>	<p>Flood protection measures include:</p> <ul style="list-style-type: none"> • The proposed stabilisation of the berms adjacent to the site and across the Ou Wa-pad from the site. Refer to Figure 14; and • The flooding of the existing in-stream head-cut and conversion of the existing culvert along the Ou Wa-pad just to the north-east of the site to a low-level crossing. Refer to Figure 15.Figure 14 <p>Refer also to Appendix B1 for a detailed drawing of the proposed flood protection measures.</p> <p>This work would entail work <u>within</u> stream 10, relating to both the bed and banks and would require the movement of >10 m³ of material. The work would entail development of new structures and the expansion of existing structures.</p> <p>For maintenance, sediment may also need to be cleared where it could be causing blockage.</p>	<p>Listed Activity 12, 19, 48 of Listing Notice 1</p> <p>Listed Activity 14 & 23 of Listing Notice 3</p>

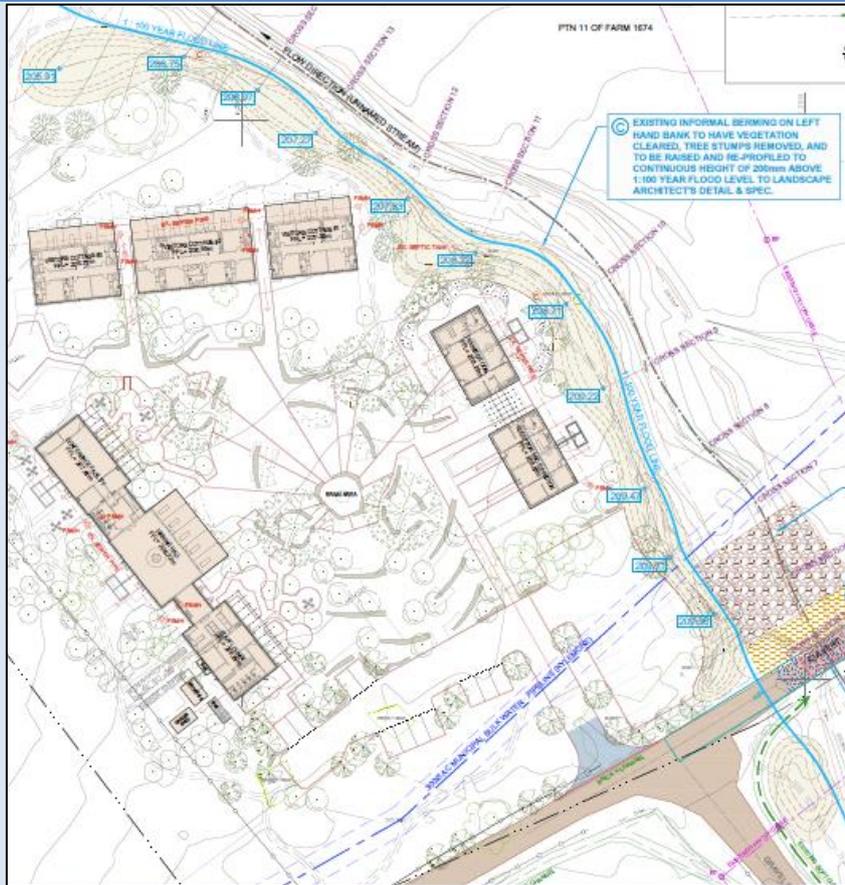


Figure 14: Position of berm to be formalised in relation to stream 10 (source: MH&A flood protection drawing C5960 / 05 / 01)

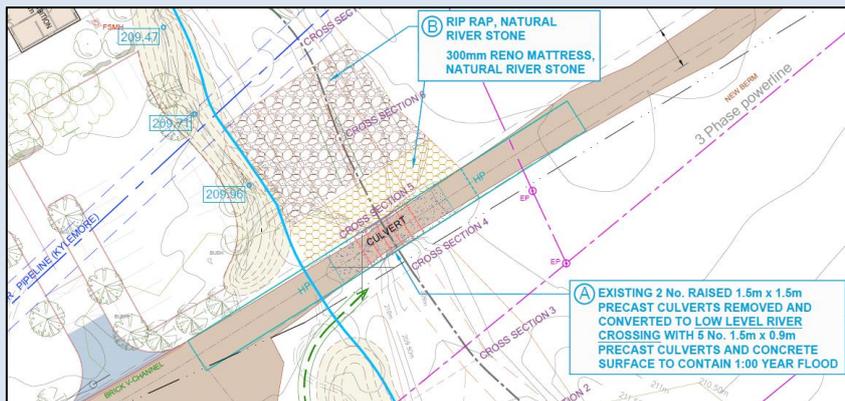


Figure 15: Proposed conversion of existing culverts to a low-level crossing (source: MH&A flood protection drawing C5960 / 05 / 01)

River rehabilitation measures

The river rehabilitation measures would require work within stream 10 (bed and banks), and would include the movement of >10m³ of material to allow for:

- Bed (head-cut) Stabilisation;
- Bank (lateral) stabilisation;
- Removal of invasive alien plant species; and
- Replanting of rehabilitated areas.

Areas identified for rehabilitation are depicted in drawing C5960/05/02 (by MH&A) included in Appendix B1 and detailed in the EMPr and Freshwater Impact Assessment Report.

The rehabilitation work would include removal/replanting of vegetation along the banks. The maintenance aspect would also require approval and a Maintenance Management Plan is incorporated into the EMPr in this regard. In some instances,

Listed Activity 12 & 19 of Listing Notice 1

Listed Activity 14 & 12 of Listing Notice 3

	indigenous vegetation may need to be cleared/cut back from culverts to prevent blockage.	
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Regarding the preferred alternative, even though certain components of the potable water pipelines (both the long-term and interim proposal) would be located within 32 m of a watercourse (streams and wetland seep), this does not trigger any related Listed Activities because the lines would be located within an existing road and/or road reserve, therefore, excluded. Listed Activities pertaining to clearing of indigenous vegetation also do not apply to the proposed lines because the area for clearing (next to the road or within the black-top) does not contain indigenous vegetation (Helme, 2021). Lastly, Listed Activities in terms of the proposed line capacity do not apply because the proposed line would fall below the thresholds indicated in the relevant Listed Activities.

DESIGN APPROACH/PHILOSOPHY

Some insight into the design approach is provided here in order to demonstrate the rationale behind the proposed development as proposed for Environmental Authorisation. The overall design objective is to alter the existing labourers' cottages as minimally as possible to ensure that past occupation of the site is remembered and acknowledged (NMA, August 2020). Another key objective is to improve the relationship between the present cottages and the landscape in which they are located (NMA, August 2020).

In order to retain the original form and character of the cottages, the roof construction would replace almost exactly what was there before (NMA, August 2020). The existing external walls and sizes of openings would also be retained where possible; however, the walls behind some of the verandas will be opened up to take advantage of the views (NMA, August 2020).

The existing external walls are currently constructed of a double layer of "hollow bricks" with no cavity and so technical solutions would be sought to counter the lack of thermal / sound insulation and protection from moisture penetration offered by the "hollow brick" walls as part of detail design (NMA, August 2020). The new interlinking spaces between the cottages would be constructed of conventional 280mm cavity walls, painted in a different colour to differentiate them from the existing cottages and due to the nature and scale of the accommodation, not many of the existing internal would be retained (NMA, August 2020). Structurally, it is not necessary to demolish the existing floor slabs, and so the slabs could be retained, and new concrete could be cast on top of the existing slabs (NMA, August 2020).

Passive design principles would inform the design of the existing buildings as far as possible in order to achieve a low carbon footprint that does not have a negative impact on the immediate surroundings or the surrounding environment (NMA, August 2020). Extensions to the current footprints have been limited in the proposed development as far as possible (NMA, August 2020). Where unavoidable due to functional and programmatic requirements, the additional footprint has been located contiguous to the existing buildings to keep the development as compact as possible (NMA, August 2020).

HOW THE RETREAT FUNCTIONS

Some context in terms of how the proposed Retreat would function and how it is not a typical tourist accommodation is provided herein to provide a sense of the activities that would occur on the site and how the proposal would be woven into the existing communities. The proposed Retreat would allow intentionally curated groups of people, as guests of the Bertha Foundation, to come together and reflect and share in their lived experiences (NMA, August 2020).

Guests/attendees who come from abroad, other parts of the country and locally, would typically stay on site for short periods as transient guests in the bedrooms provided while they are involved in facilitated programmes that utilise the conference facilities on the site (NMA, August 2020). Catering would be done on site using the kitchen and proposed vegetable garden (refer to the Landscaping explanation above) as a source of fresh produce (NMA, August 2020). Guests and visitors to the Retreat will arrive off the Ou Wapad, typically in shared transport and park or be dropped off in the informal parking area after which they would filter towards a reception area in the easternmost cottage (NMA, August 2020). From here they would be directed to their intended destination via the central space, in fair weather (NMA, August 2020). The rotating staff members arriving by foot or by organised shared transport would also come through the informal parking forecourt and proceed on to the kitchen block which they will use as their base (NMA, August 2020).

The reception area would be part of two cottages on the eastern part of the site, repurposed to house the centre's administration but also the classroom space that is to be used for community activities such as the existing Lalela programme, as well as other community training programmes (NMA, August 2020). The Lalela programme teaches school-going learners discipline using art as a tool (NMA, August 2020). The programme is designed to run from Grade 1 to Grade 12 and is currently offered from Monday to Thursday to 20 learners from Grades 1,2,3,4,6, and 7 and 40 learners from Grade 5, from Nondzame and Pniel Primary Schools (NMA, August 2020). The learners predominately come from Lanquedoc and Pniel, with others coming from Kylemore and Meerlust. The facilitators are also from the surrounding communities (NMA, August 2020).

The two cottages on the eastern part of the site, in addition to classroom space, would house a library and its own ablutions to allow it to be used independently from the conference facility (NMA, August 2020). These two cottages would look out over the seasonal stream and the northernmost cottage would have outdoor areas available for fair weather art activities or training programmes (NMA, August 2020).

The three northern cottages would house the overnight accommodation (NMA, August 2020). The cottages to the west and east would have five, two-person rooms in each. The central cottage would be demolished completely and rebuilt in a similar form to the eastern and western cottages to accommodate seven, two-person rooms (NMA, August 2020). Each cottage would have a covered outdoor area on the northern side overlooking the Dwars River (NMA, August 2020).

The three cottages on the western part of the site would be the focus of the Retreat's communal activities and house the conference facility / seminar space for no more than 50 people, a lounge, dining room, open plan kitchen, and service and staff support areas (NMA, August 2020). The dining and lounge area would have a covered outdoor area facing the internal courtyard (NMA, August 2020).

The parking area would also be used for a small informal market facility to be operated occasionally (at least once a month between October and April, in the summer season) only (NMA, August 2020). The market would primarily cater for traders and customers from the surrounding communities of Pniel, Lanquedoc, Kylemore, Meerlust, and Simondium, and perhaps also from as far afield as Stellenbosch (NMA, August 2020). They would access the market by foot and private vehicle (NMA, August 2020). The market would also cater to Retreat guests/attendees (NMA, August 2020). The market would offer locally produced products from the surrounding communities, with the intention to support local entrepreneurs (NMA, August 2020).

CLARIFICATION ON WHO BERTHA FOUNDATION IS

In order to clarify the position of Bertha Foundation, and the potential public perception of its relationship with Boschendal (noting that this was an issue raised during the Focus Group Meeting held on 23 February 2021- refer to Appendix F for the details thereof), it should be noted that there are three separate entities active in the area which may be confused with one another, namely the Bertha Foundation, Boschendal and the Community Advice Office (CAO). The Bertha Foundation is a philanthropic organization that provides funding to human rights and social justice organizations around the world. The CAO is one such grantee (of many others). The CAO is a community-based organization that offers basic legal advice and information to residents of the Valley that are unable to afford it. The CAO also offers legal advice to community development organisations that represent the interests of poorer individuals and groups. A diagram has been provided which demonstrates these entities, refer to Figure 16.

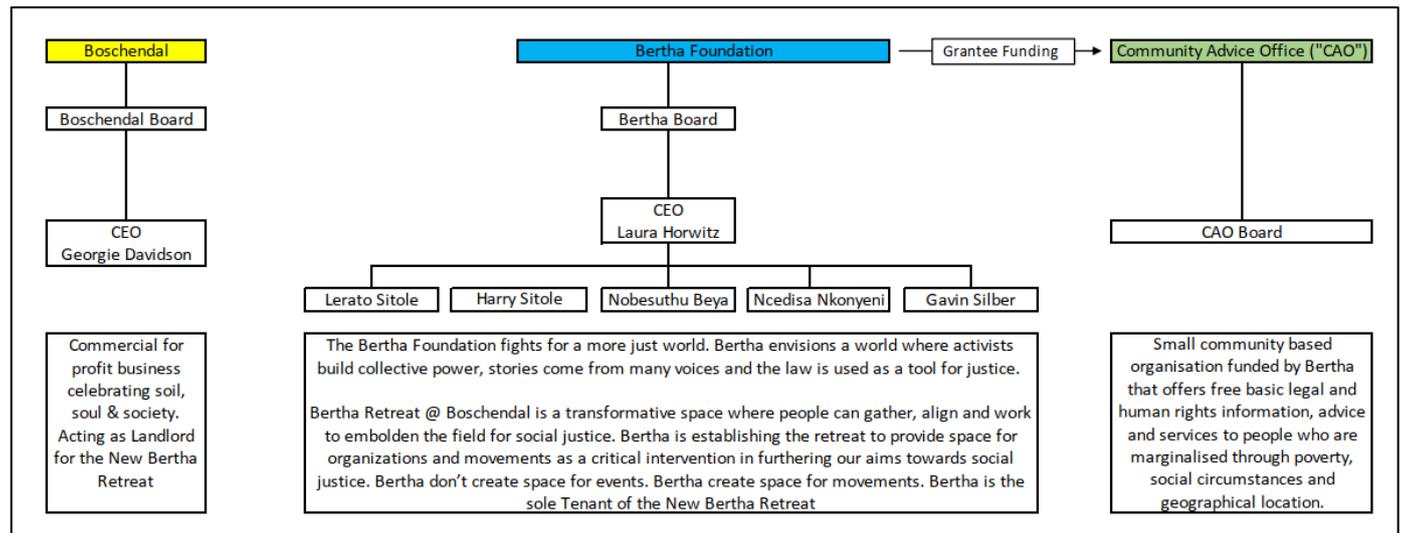


Figure 16 Organogram depicting Boschendal, Bertha Foundation and the Community Advice Office (source: The Bertha Foundation, April 2021)

4.5.	Indicate how access to the proposed site(s) will be obtained for all alternatives.																					
The site is currently accessible via a dirt road (i.e. Ou Wa-pad) and the same road would be used to access the proposed development. Therefore, no capacity road improvements would be required (Pretorius & Sequeira, 2020). Note however, that geometric improvements to the bell-mouth of the eastern leg of the current intersection bellmouth at the Lanquedoc Main Road/Ou Wapad, parking capacity and provision for a bus turning route have been recommended and these recommendations have been incorporated into the EMPr.																						
Note that no alternative site is being considered at this stage, given that there are already existing derelict cottages within a disturbed footprint that could be better utilised, rather than electing a greenfields site.																						
It should be noted that the Department of Transport and Public Works, in their comment on the pre-application draft Basic Assessment report, indicated their support for the proposed development.																						
4.6.	SG Digit code(s) of the proposed site(s) for all alternatives (note that these are the same for all three development alternatives):																					
	Portion 11 of Farm 1674	C	0	5	5	0	0	0	0	0	0	0	0	1	6	7	4	0	0	0	1	1
4.7.1	Coordinates of the proposed site(s) for all alternatives (note that these are the same for all development alternatives):																					
	Latitude (S)	33°					53'					17.94"										
	Longitude (E)	18°					58'					26.72"										
	Coordinates for proposed potable water line route (start, middle and end)																					
4.7.2	Start: Latitude (S)	33°					53'					19.41"										
	Longitude (E)	18°					58'					29.03"										

4.7.3	Middle: Latitude (S)	33°	53'	27.22"
	Longitude (E)	18°	58'	11.00"
4.7.4	End: Latitude (S)	33°	53'	34.77"
	Longitude (E)	18°	58'	3.84"

SECTION C: LEGISLATION/POLICIES AND/OR GUIDELINES/PROTOCOLS

1. Exemption applied for in terms of the NEMA and the NEMA EIA Regulations

Has exemption been applied for in terms of the NEMA and the NEMA EIA Regulations. If yes, include a copy of the exemption notice in Appendix E18.	YES	NO
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2. Is the following legislation applicable to the proposed activity or development.

The National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) ("ICMA"). If yes, attach a copy of the comment from the relevant competent authority as Appendix E4 and the pre-approval for the reclamation of land as Appendix E19.	YES	NO
<p>The National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA"). If yes, attach a copy of the comment from Heritage Western Cape as Appendix E1.</p> <p>The proposed development triggers S 38 of the NHRA because the proposal and nature of the proposed development relative to the current context and sense of place trigger constitute a change of character to a site greater than 5000 m². A Heritage Impact Assessment (HIA) has been conducted and the specialist recommendations contained therein have been incorporated into recommendations for conditions of Environmental Authorisation. <u>No further recommendations made by Registered Heritage Conservation Bodies or Heritage Western Cape (HWC) were made during the public review period of the post-application Draft BAR.</u></p> <p>A Notification of Intent to Develop (NID) was submitted to HWC and their comment thereon was also furnished on 14 April 2020 (refer to Appendix E1 for the HWC response). In their comment, HWC required that the HIA include special reference to the following:</p> <ul style="list-style-type: none"> • Impacts to archaeological heritage resources; • Visual impacts study of the proposed development; • Social study of the proposed development; and • Landscape study of the proposed development. <p>HWC also provided interim comment on the HIA in which the findings of the HIA are supported (refer to Appendix E1). <u>HWC indicated that they would only provide final comment on the final HIA once all required PPP is undertaken and incorporated. The final HIA was submitted to the HWC on 3 February 2022 in parallel to the final BAR submission. It is anticipated that the final comment will only be issued following the APM on 2 March, and IACom Meeting on 9 March (pers. comms. K Smuts, heritage practitioner, 27/02/2022). The final comment from HWC will be provided to the DEA&DP as soon as received and within the 107 days allocated for decision-making in order for this to be considered in the decision-making process.</u> It is important to note that <u>no major changes have been made to the HIA since the interim comment was received from HWC and that only the PPP section was updated, and related Annexures added. The final HIA is appended as Appendix G (f).</u></p> <p>Note that an NID <u>was</u> also submitted in terms of Section 38(8) of the NHRA for the proposed potable water line to Lanquedoc (refer to Appendix G (j)). The NID concludes that no further studies are required in terms of pipeline development <u>and the HWC agreed in response. The RNID is included in Appendix G (j).</u></p> <p>The interim water supply line to the existing irrigation line would be below 300 m and below ground (apart from a section at the culvert crossing). Thus, the NHRA does not need to be contemplated through a NID submission for this line (K Smuts pers. comms. 20/10/2021)</p>	YES	NO
The National Water Act, 1998 (Act No. 36 of 1998) ("NWA"). If yes, attach a copy of the comment from the DWS as Appendix E3.	YES	NO

<p>A pre-application submission was made via the DWS online "eWULAAAs" portal on 7 September 2020 (refer to Appendix M for evidence thereof) and pre-application meetings were held with the DWS on 2 December 2020, 16 February 2021 (refer to Appendix F for notes of these meetings).</p> <p><u>With</u> mitigation, development Alternative 2 poses, at worst, a low risk to the characteristics of the inland aquatic ecosystems affected by the development, and it is recommended that the development be generally authorised in terms of a Section 21 (i) water uses (Snaddon, 2021). Use of treated effluent for toilet flushing and on-site containment and infiltration of stormwater, would also avoid the need for Section 21 (e) and (g) water uses (Snaddon, 2021).</p> <p>For the preferred alternative (i.e. Alternative 3), the overall risk to all watercourses is low or negligible (Snaddon, 2021) and this alternative is also preferred from a freshwater ecology perspective over the other alternatives. Section 21 (e) would not apply, while Section 21 (g) could be issued for the conservancy tank and lines under a General Authorisation due to the design capacity and low risk to watercourses (Snaddon, 2021).</p> <p>It is also noteworthy that the site is located below the confluence of the Dwars and Berg Rivers, and so General Limits apply (K, Snaddon <i>pers comms</i>, 2 December 2020).</p> <p>A General Authorisation application for Section 21 (c) and (i) water uses <u>was</u> submitted to the DWS and the DWS confirmed that the proposed development can be authorised under a General Authorisation in terms of Section 40 of the NWA (refer to Appendix M). <u>A final decision on the application was still awaited at the time of submission of this Final BAR.</u></p>		
<p>The National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM: AQA"). If yes, attach a copy of the comment from the relevant authorities as Appendix E13. <u>Not Applicable</u></p>	YES	NO
<p>The National Environmental Management Waste Act (Act No. 59 of 2008) ("NEM: WA") <u>Not Applicable</u></p>	YES	NO
<p>The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004 ("NEMBA"). This act was considered in the determination of the ecosystem threat status on site as well as the threatened status of particular plant species on site, but no specific permits or approvals are required for the proposed development in terms of Section 87 of NEMBA.</p>	YES	NO
<p>The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) ("NEMPAA"). Although the site lies within 5km of a Protected Area in terms of NEMPAA, the site itself is not located in such an area. A terrestrial biodiversity compliance statement has, therefore, been completed in support of the Basic Assessment process (refer to Appendix G(c)).</p>	YES	NO
<p>The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) ("CARA"). If yes, attach comment from the relevant competent authority as Appendix E5. Lanz (2021) has confirmed that agricultural production potential would not be lost as a result of the proposed development and that all reasonable measures have been taken through micro-siting to avoid or minimise fragmentation and disturbance of agricultural activities and no conditions of authorisation would be necessary and no further agricultural assessment of any kind is required.</p> <p>Refer to Appendix G(d) for the Agricultural Site Sensitivity Verification and Agricultural Compliance Statement.</p> <p>Section 6 of the CARA allows for Prescription of control measures relating to the utilisation and protection of vleis, marshes, water sponges and water courses, and these have guided the freshwater/ aquatic biodiversity impact assessment and prescription of mitigation measures (Snaddon, 2021).</p>	YES	NO

3. Other legislation

<p>List any other legislation that is applicable to the proposed activity or development.</p> <p>The town planning/ land use legislation applicable to the proposed development includes the Western Cape Land Use Planning Act, No. 3 of 2014 and the applicable Zoning Scheme is the Stellenbosch Municipality Zoning Scheme By-law (ZSBL) of 2019 (<i>pers comms</i>, Ms. N Mammon, NMA, 07/04/2020). The land use application will be made in terms of this By-law and the Stellenbosch Municipality Land Use Planning By-law (2015) (<i>pers comms</i>, Ms. N Mammon, NMA, 07/04/2020).</p> <p>The proposed development is not permitted 'as of right' in terms of the primary and / or additional rights permitted in terms of the ZSBL, 2019 because it will exceed the permissible thresholds for the proposed tourist accommodation and tourist facilities within the proposed Retreat, to be located on a portion of Portion 11 of Farm 1674 (<i>pers comms</i>, Ms. N Mammon, NMA, 07/04/2020). However, the proposed development is also not in direct conflict with the land uses generally permitted within the Agriculture and Rural Zone, as the proposed development can be developed within this zone subject to a land use application to the Stellenbosch Municipality (SM) to grant its Consent for the establishment of the proposed development (<i>pers comms</i>, Ms. N Mammon, NMA, 07/04/2020). Note that the required potable water link to Lanquedoc also emanates from the town planning process as a condition imposed by the Stellenbosch Municipality (refer to Appendix E15).</p> <p><u>Note that since the compilation of the Draft BAR, the Stellenbosch Municipality approved the New Retreat application for Consent (refer to Appendix E21).</u></p> <p>Within the competency of the National Government, the Constitution (RSA 1996) guides the general conduct of the process and defines the rights of people and the environment. It has been considered in general in this Basic Assessment process and approach to impact assessment.</p>
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4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.

Although the Stellenbosch Municipality has not formal stormwater treatment policy, the requirement is that the 1:5 to 1:50 year flood must be detained (pers comms, R. Schoonwinkel, 02/09/2020) and the proposed engineering services responds to this by including a vegetated swale below the parking area.

5. Guidelines

List the guidelines which have been considered relevant to the proposed activity or development and explain how they have influenced the development proposal.

- Western Cape Provincial Spatial Development Framework ("PSDF"): Consulted to inform development of the site
- Stellenbosch Municipality Spatial Development Framework (2017): Consulted to inform development of the site from a town planning, transport, and general land use perspective
- Guidelines on EIA Regulations 2012: Guide and inform the Basic Assessment process
- Guidelines on Public Participation 2013 and Department of Environmental Affairs (DEA) Guidelines on Public Participation, 2017: These documents guided the development of this Basic Assessment process and Basic Assessment Report, noting that where relevant, allowance was made to align with the 2017 amended EIA regulations. Each aspect of the report (i.e. public participation, need and desirability, alternatives, etc.) was carefully considered and comprehensively addressed with a view to promoting sustainable development throughout the process.
- Guidelines on Need and Desirability 2013.
- Guidelines on Alternatives 2013.
- DWAF Resource Directed Measures for Water Resources: Wetland Ecosystems method (DWAF, 1999b): Used by the freshwater ecologist when assessing the Environmental Importance and Sensitivity (EIS) categories to the wetlands nearby. The full freshwater report can be found in Appendix G(e).
- Department of Water Affairs and Forestry. 2005. A practical field procedure for identification and delineation of wetland riparian areas. Department of Water Affairs and Forestry, Pretoria, South Africa: Used by the freshwater ecologist when identifying and delineating the wetlands nearby the sites. The full freshwater report can be found in Appendix G(e).
- Water Research Commission Buffer zone guidelines for rivers, wetlands, and estuaries. Part 1: Technical Manual. Used in the freshwater impact assessment report to assist in buffer determination (refer to Appendix G(e)).
- Water Research Commission Manual for the Rapid Ecological Reserve Determination of Inland Wetlands (Version 2.0)- applied in the freshwater impact assessment (refer to Appendix G(e)).
- Guideline for involving Heritage Specialists in EIA processes (2005): Applied in the VIA and HIA to guide the scope and requirements thereof
- South African Trip Data Manual (COTO TMH17, 2013): Considered in methodology employed in the TIA (e.g. trip generation calculations)
- Guidelines for Traffic Impact Studies: Considered in the TIA

6. Protocols

Explain how the proposed activity or development complies with the requirements of the protocols referred to in the NOI and/or application form

The following assessments/sensitivities were raised in the Screening Tool Report:

- Landscape/ Visual Assessment;
- Archaeological and Cultural Heritage Impact Assessment
- Palaeontology Impact Assessment
- Terrestrial Biodiversity Impact Assessment
- Aquatic Biodiversity Impact Assessment
- Agricultural Assessment
- Socio-Economic Assessment
- Plant Species Assessment
- Animal Species Assessment
- Traffic Impact Assessment.

The way each of the above has been addressed in response to the applicable protocols is indicated in Table 2. [A Site Sensitivity Verification Report](#) which presents the same information as below has also been completed and is included in [Appendix I](#).

Table 2 Applicable Assessment Protocols and Approach in this Assessment

No.	Assessment	Applicable Protocol	Response
1	Landscape/ Visual Assessment	No specific protocol-consider general requirements (GG 45421 of 10/05/2019) _DRAFT	<p>The landscape architects (i.e. Terra+) conducted a landscape assessment (refer to Appendix G(f)) which was used to inform the proposed landscape concept. A Visual Study has also been included in the HIA (refer to Appendix G(f)) and has been summarised in this BAR.</p> <p>Note that the proposed potable water line to Lanquedoc and interim water supply pipeline would be underground, within existing road limits and so would not affect the landscape once installed. Construction phase specifications for managing visual impacts would be controlled through the EMPr (refer to Appendix H).</p>
2	Archaeological and Cultural Heritage Impact Assessment	No specific protocol-consider general requirements (GG 45421 of 10/05/2019) _DRAFT	<p>Section 38 of the NHRA is triggered by the proposed development and the HIA (Refer to Appendix G(f)) has included an archaeological assessment report. Findings conclude that no archaeological impacts are anticipated as the archaeological sensitivity of the site and wider area is low (Smuts & Scurr, 2020). The possibility of encountering highly significant subsurface archaeological remains does, however, exist. Impacts on cultural heritage have also been assessed and the findings summarised in this BAR and detailed in the HIA in Appendix G(f). The same applies to the proposed potable water lines (refer to Appendix G(f)).</p>
3	Palaeontology Impact Assessment	No specific protocol-consider general requirements (GG 45421 of 10/05/2019) _DRAFT	<p>A Heritage Practitioner conducted a screening assessment on the site and proposed development and completed a NID in terms of Section 38 of the National Heritage Resources Act (NHRA). In their response to the NID, HWC did not request any input on palaeontology and therefore, it is implicit that there is no need for further assessment in this regard.</p>
4	Terrestrial Biodiversity Impact Assessment	3(a) Protocol for the assessment and reporting of environmental impacts on terrestrial biodiversity (GG 45421 of 10/05/2019) _DRAFT	<p>The Screening Tool has marked the site as Very High Sensitivity.</p> <p>An independent specialist has provided a Terrestrial Biodiversity Compliance statement which confirms that the site and proposed potable water line routes are in fact of low sensitivity and no further mitigation measures are required in this regard. Refer to Appendix G(c) for the Terrestrial Biodiversity Compliance Statement.</p>
5	Aquatic Biodiversity Impact Assessment	3(b) Protocol for the assessment and reporting of environmental impacts on aquatic biodiversity (GG 45421 of 10/05/2019) _DRAFT	<p>The Screening Tool has marked the site as Very High Sensitivity.</p> <p>The Freshwater Impact Assessment describes the baseline conditions of the site and two potable water line routes and has considered the impacts applicable to the site and development proposal. It has also guided the proposed servicing of the proposed with the assessment of two alternatives for the siting of the proposed sewage package plant.</p> <p>The impact assessment has considered the impacts of the proposed development on the various aspects of the freshwater ecosystem and mitigation measures have been incorporated into the assessment to mitigate those impacts which are relevant to the site and proposal. Refer</p>

			to Appendix G(e) for the Freshwater Impact Assessment Report.
6	Agricultural Impact Assessment	1(a) Protocol for the assessment and reporting of environmental impacts on agricultural resources (GG 45421 of 10/05/2019) _ DRAFT	The National Screening Tool considers the site to have high agricultural sensitivity. An Agricultural Sensitivity Compliance Statement has been included in the Basic Assessment Report as Appendix G(d) and it has found that the Screening Tool's mapping is inaccurate and that the site and two potable water line routes are of Medium sensitivity, which means that it is not recommended for crop farming and that no further conditions in this regard should be applied to the proposed development and not further agricultural assessment of any kind is necessary (Lanz, 2021).
7	Socio-Economic Assessment	No specific protocol-consider general requirements (GG 45421 of 10/05/2019) _ DRAFT	The socio-economic aspects of the site and proposal have been considered and addressed in the Basic Assessment Report through inclusion of the following: <ul style="list-style-type: none"> • Socio-economic profile of the municipality as well as the community around the site; • A social study has been included in the HIA (refer to Appendix G(f)); • Detailing the financial contribution of the project to the economy as well as to previously disadvantaged individuals.
8	Plant Species Assessment	No specific protocol-consider general requirements (GG 45421 of 10/05/2019) _ DRAFT	The plant species on the site and the proposed potable water alignments have been noted and considered in the Terrestrial Biodiversity Compliance Statement Appendix G(c).
9	Animal Species Assessment	No specific protocol-consider general requirements (GG 45421 of 10/05/2019) _ DRAFT	This assessment has already been done at a high level for the entire farm and the information from that assessment will be used to inform the design as well as management measures to accommodate the adjacent corridor. The site itself has been deemed as having low sensitivity (Jackson <i>et al</i> , 2019). Lists of potential freshwater species as well as terrestrial species of fauna have also been included in the Terrestrial Biodiversity Compliance Statement (see Appendix G(c).) and the Freshwater Impact Assessment/ Aquatic Biodiversity Assessment (see Appendix G(e)) respectively.
10	Traffic Impact Assessment	No specific protocol-consider general requirements (GG 45421 of 10/05/2019) _ DRAFT	A Traffic Assessment has been conducted by ITS and included in Appendix G(a). Recommendations made in this regard as minor as impacts on transport would be low and the local road network would continue to operate at acceptable Level of Service (LOS). These have and have been included in the EMPr.

SECTION D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1	Describe the portion of the proposed development to which the applicable listed activity relates.
12	(i) The development of dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or	This applies to the cumulative components of the proposed development located within and within 32 m of the stream and wetlands and includes aspects such as the walkways and additional patios, buildings/platform/ breakaway areas, hard landscaping (like

	<p>(ii) Infrastructure or structures with a physical footprint of 100 square metres or more</p> <p>Where such development occurs-</p> <p>(a) Within a watercourse (b) In front of a development setback; or (c) If no development setback exists, within 32 metres of a watercourse, measured from the edge of the watercourse;</p> <p>Excluding-</p> <p>(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port of harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs in urban areas; (ee) where such development occurs within existing roads, road reserves, or railway line reserves; or (ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.</p>	<p>boardwalks, compacted footpaths, art pads, pergolas, etc), grassed amphitheatre, parking area, reinstatement of berms alongside the stream, rehabilitation works within the stream (for development and operational phase), and lowering of the culverts in the Ou Wa Pad to create a drift.</p> <p>Refer also to Table 1</p>
19	<p>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles, or rock of more than 10 cubic metres from a watercourse;</p> <p>but excluding where such infilling, depositing, dredging, excavation, removal or moving—</p> <p>(a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; [or] (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or (e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.</p>	<p>Some partial infilling of wetlands and works within the ecological buffers would be required for aspects of the proposed development. Some of the proposed hard and soft landscaping would be located within the Dwars River valley-bottom wetland. These aspects include the informal amphitheatre, pedestrian footpaths, and soft landscaping/ planting.</p> <p>The proposed flood management measures (e.g. lowering culverts, in-stream flood protection, re-instatement of berms) as well as rehabilitation would entail work in the stream or along the banks thereof.</p> <p>Ongoing maintenance (e.g. sediment removal and clearing of invasive plants/ bush encroachment, noting that indigenous vegetation may need to be removed from culverts if causing blockage) would also entail work in the stream and a Maintenance Management Plan has been included in the EMP for approval as part of this application.</p> <p>Refer also to Table 1</p>
48	<p>The expansion of</p> <p>i. Infrastructure or structures where the physical footprint is expanded by 100 square metres or more; ii. Dams or weirs, where the dam or weir, including infrastructure and water surface area, is expanded by 100 square metres or more; or iii. Where such expansion occurs iv. Within a watercourse; v. In front of a development setback; or</p>	<p>There are existing cottages that would be expanded upon. More than 100 m² of additional structures and landscaping would be developed within 32 m of a stream (i.e. stream 10) and within 32 m a wetland (i.e. the Dwars River valley-bottom wetland). These include components such as the outdoor spaces for the community space, some of the parking area, the northward expansion of visitors' cottage 1, and the solitary reading/meditation space for the visitors' cottages.</p> <p>This Listed Activity would also apply to the formalisation of the berms alongside the stream</p>

	<p>vi. If no such development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>Excluding</p> <ul style="list-style-type: none"> aa. the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; bb. where such expansion activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; cc. activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; dd. where such expansion occurs within an urban area; or ee. (where such expansion occurs within existing roads, road reserves or railway line reserves. 	<p>for flood protection, as well as the works within the culverts.</p> <p>Note that this listed activity is not triggered for the proposed potable water lines because the lines would be within the existing road and/or road reserve.</p> <p><u>Refer also to Table 1</u></p>
<p>Activity No(s):</p>	<p>Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3</p>	<p>Describe the portion of the proposed development to which the applicable listed activity relates.</p>
<p>6</p>	<p>The development of resorts, lodges, hotels, and tourism or hospitality facilities that sleeps 15 people or more.</p> <p>i. Western Cape</p> <ul style="list-style-type: none"> i. Inside a protected area identified in terms of NEMPAA; ii. Outside urban areas; <ul style="list-style-type: none"> aa. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; or bb. Within 5 km from national parks, world heritage sites, areas identified in terms of NEMPAA or from the core area of a biosphere reserve; - <p>excluding the conversion of existing buildings where the development footprint will not be increased.</p>	<p>All the structures beyond the existing footprint of the cottages would trigger this listed activity as the entire site falls within 5 km of a nature reserve and more than 15 people would be accommodated for tourism/ hospitality purposes.</p>
<p>12(i)(i)</p>	<p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan</p> <p>Within the Western Cape</p> <p>Within any critically endangered or endangered ecosystem listed in terms of section 52 of NEMBA or prior to the publication of such a list, within that area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004.</p>	<p>The National List of Threatened Ecosystems (DEA 2011) classifies Swartland Alluvium Fynbos as Critically Endangered, although this was down listed to Endangered by Skowno <i>et al</i> (2019), due to different habitat loss thresholds being applied (Helme, 2021).</p> <p>Either way, the site falls within an area to which this listed activity is applicable. Initial clearing of the site for development would result in removal of approximately 500 m² of low-diversity indigenous vegetation so the development phase would trigger this listed activity.</p> <p>Note that the proposed landscape plan includes approximately 6,560 m² of rehabilitated fynbos landscape.</p> <p>Ongoing maintenance would also entail work in the stream where indigenous vegetation/busch encroachment may need to be cleared from culverts to avoid blockage, and a Maintenance Management Plan has been included in the EMPr for approval as part of this application.</p>

		Note that this listed activity is not triggered for the proposed potable water lines because the lines would be within the existing road and/or road reserve and no indigenous vegetation occurs along these routes (Helme, 2021).
14	<p>The development of-</p> <p>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 10 square metres; or</p> <p>(ii) Infrastructure or structures with a physical footprint of 10 square metres or more</p> <p>Where such development occurs-</p> <p>(a) Within a watercourse (b) In front of a development setback; or (c) If no development setback exists, within 32 metres of a watercourse, measured from the edge of the watercourse;</p> <p>Excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.</p> <p>i. Western Cape i. Outside urban areas ii. (ff) critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</p>	<p>This applies to the cumulative components of the proposed development located within and within 32m of the stream and wetlands and includes aspects such as the walkways and additional patios, buildings/platform/breakaway areas, hard landscaping (like boardwalks, compacted footpaths, art pads, pergolas, etc), grassed amphitheatre, parking area, reinstatement of berms alongside the stream, rehabilitation works within the stream (for development and operational phase), and lowering of the culverts in the Ou Wa Pad to create a drift. A key trigger of this listed activity would be the flood management measures as well as the river rehabilitation works as these would occur in the stream bed.</p> <p><u>Refer also to Table 1</u></p> <p>These watercourses and some of their buffers are aquatic ESAs in terms of the WCBSP.</p>
23	<p>The expansion of-</p> <p>(iii) dams or weirs, where the dam or weir, is expanded by 10 square metres; or (iv) Infrastructure or structures where the physical footprint is expanded by 10 square metres or more</p> <p>Where such expansion occurs-</p> <p>(d) Within a watercourse (e) In front of a development setback; or (f) If no development setback exists, within 32 metres of a watercourse, measured from the edge of the watercourse;</p> <p>Excluding the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.</p> <p>ii. Western Cape iii. Outside urban areas (ff) critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</p>	<p>This listed activity is included in the event that the proposed berm reinstatement and flood management measures are contemplated as expansion, given that there are existing berms and culverts in place at present.</p> <p><u>Refer also to Table 1</u></p> <p>These watercourses and some of their buffers are aquatic ESAs in terms of the WCBSP.</p>
<p>Note:</p> <ul style="list-style-type: none"> The listed activities specified above must reconcile with activities applied for in the application form. The onus is on the Applicant to ensure that all applicable listed activities are included in the application. If a specific listed activity is not included in an Environmental Authorisation, a new application for Environmental Authorisation will have to be submitted. Where additional listed activities have been identified, that have not been included in the application form, and amended application form must be submitted to the competent authority. 		

Note that **Listed Activity 17 of Listing Notice 3** was considered and is believed not to be relevant given that the buildings and site cannot presently be defined as a "resort, lodge, hotel, tourism or hospitality facilities" and therefore although the buildings would be expanded upon through the proposed development, an existing "resort, lodge, hotel, tourism or hospitality facilities" would not be expanded upon. Further advice from the DEA&DP is requested in this regard.

Note that even though certain components of the water pipeline to the supply reservoir for Alternative 2 and the two potable water lines for Alternative 3 (i.e. the preferred alternative) would be located within 32 m of a watercourse, this does not trigger any related Listed Activities because both lines would be located within an existing road and/or road reserve and it is, therefore, excluded.

List the applicable waste management listed activities in terms of the NEM: WA

Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Category A	Describe the portion of the proposed development to which the applicable listed activity relates.
Not Applicable		

List the applicable listed activities in terms of the NEM: AQA

Activity No(s):	Provide the relevant Listed Activity(ies)	Describe the portion of the proposed development to which the applicable listed activity relates.
Not Applicable		

SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

1.	Provide a description of the preferred alternative .
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In response to the DEADPs comment on the post-application Draft BAR, a description of the preferred Alternative (Alternative 3) is detailed below:

The Site Development Plan proposed is indicated in Figure 1 with a more detailed image and set of documents included in Appendix B1.

The proposed development entails the development of a "New Retreat", for the Bertha Foundation which draws on the positive attributes as well as lessons learned from the current Retreat on the Boschendal Estate, located on a portion of Portion 3 of Farm 1674, The Retreat is a Bertha Foundation initiative and the overall intention is for the proposed development to provide a transformative space where people can gather, align and work to embolden the field for social justice. The space would provide sanctuary for organisations, movements, and individuals most marginalised within society. These could range from local community organisations or individuals to those from international origins. The New Retreat would be used to host any event which furthers the aims of social and environmental justice such as decision-focused meetings, training and capacity-building, strategic planning and reflection sessions, retreats and team-building activities, convenings and exchanges for partnership strengthening/development, film screenings and discussions, and community recreation/engagement programmes.

The proposed development would include internal and external spaces for convening and accommodation for attendees, as well as the ancillary areas which would support this such as kitchens and staff facilities.

It is presently anticipated that the proposed development would have the capacity to accommodate up to approximately up to 34 overnight guests/attendees.

Buildings
 The existing building footprints of the remnant cottages on site would be used, where possible and the proposed development would comprise of the following buildings:

- Accommodation buildings to accommodate up to 34 overnight guests/attendees, which include bedrooms, bathrooms, a lounge/communal living area and covered outdoor areas/deck space;
- A conference facility which includes a small conference venue and up to approximately two breakaway areas;
- A communal dining and lounge area;
- An administration building with a reception and waiting lounge / library;
- Meeting room(s) for community programmes and a communal library; and
- A kitchen area, with space for staff dining, lockers, and ablution facilities.

Landscaping
 The interventions would connect the site to the farm by opening up views to the surrounding landscape, watercourse, and mountains, and forming new paths that connect the site to the adjacent watercourse and the Dwars River. The overall design intent is to integrate the development in the landscape and provide a multitude of diverse spaces that are comfortable for a range of people. The landscape plan in **Error! Reference source not found.** indicates a variety of spaces from the large central gathering space, the point of arrival to more intimate spaces for solitary pursuits and isolation in areas such as the boardwalks along the stream. The use of peripheral areas for guests/attendees to connect to nature is facilitated using a continuous footpath through

the rehabilitated fynbos and a productive kitchen garden (*pers comms, A. Bormans, 29/05/2020*). The interface with the historic Ou Wa-pad would be softened with extensive planting (*pers comms, A. Bormans, 29/05/2020*).

The intention is that all spaces, including the parking area, be multi-use spaces to accommodate varying functions such as occasional markets, grantee gatherings, community gatherings, and play activities (NMA, August 2020).

In terms of sustainable drainage, stormwater would be managed primarily by infiltration through permeable surfaces. Car parking areas would be constructed from permeable gravel-fix systems, or permeable grass blocks, and edge restraints would be low and/or have drainage gaps. Landscaped pedestrian areas and planting would also be permeable. Surface flow that may be generated by high rainfall events would be allowed to pass through the development by surface escape, without causing flow concentration. Therefore, the source of water for the landscaping would be a combination of municipal supply, rainfall and stormwater run-off (infiltration) Refer to the Stormwater Management description below for more information.

There would be a combination of hard and soft landscaping measures applied.

Hard landscaping would include an open courtyard and a network of boardwalks, as well as an outdoor landscaped amphitheatre (which would be grassed). Proposed parking areas would also be landscaped, but these would be tucked within further planting to soften the entrance and interface with the Ou Wa-pad.

Soft landscaping would also be used to bridge scale with the proposed buildings and break-away areas as well as to provide screening and synergy with the surrounding landscape. Tree lines as well as rehabilitated fynbos corridors would be implemented to provide strong connections to the broader landscape (*pers comms, A. Bormans, 29/05/2020*). There would be peripheral areas to connect to nature through the provision of a continuous footpath through the rehabilitated fynbos and productive kitchen garden (*pers comms, A. Bormans, 29/05/2020*). The interface with the historic "Ou Wa-pad" would be softened with extensive planting. The intention would be for the site to be as self-sufficient as possible, and so a vegetable garden is a major component of the landscape plan.

The Landscape Plan is indicated in **Error! Reference source not found.** as well as in Appendix L.

Transport (access and parking):

There is an existing road network which provides access to the site. Access to the site would be obtained via the Ou Wa-pad, a 6 m wide gravel servitude road that traverses Portion 2 of Farm 1176 (which is not part of the Boschendal Estate and Farm 1730 of the Boschendal Estate, and which takes access via a security gate (which is owned and managed by Boschendal) off the Lanquedoc Main Road (which is accessible via Helshoogte Road) (Pretorius & Sequeira, 2020). The access control will be retained (Pretorius & Sequeira, 2020).

A total of 24 parking bays (which includes 7 visitors parking bays) are proposed and confirmed as sufficient (Pretorius & Sequeira, 2020).

Internal access would be via a short, single new access road off the Ou Wa-pad, to a small parking area along the edge of the Ou Wapad (NMA, August 2020). This would serve to limit the movement of vehicles on and around the site (NMA, August 2020). Internal access to the various components of the proposed development would occur via a series of informal footpaths and landscaping interventions as described in the Landscaping section above.

Refer to Appendix G(a) for the Transport Impact Assessment.

Transport (public transport infrastructure):

There are public transport services in the form of mini-bus taxis available along the Helshoogte Road (Pretorius & Sequeira, 2020). A bus turning route (refer to Figure 3) for shuttle busses dropping off Retreat attendees is proposed south of the proposed development, making use of the existing dirt road, as the Ou Wapad is too narrow for a bus to turn around (Pretorius & Sequeira, 2020). The bus would need to alley dock by means of reversing into the gravel road and then driving out again (Pretorius & Sequeira, 2020).

Refer to Appendix G(a) for the Transport Impact Assessment.

Transport (NMT):

No additional pedestrian and cycling facilities are required for the proposed development (Pretorius & Sequeira, 2020). The Ou Wapad is a private, access-controlled gravel road and visitors to the farm could walk along the Ou Wa-pad under these local traffic volume conditions (Pretorius & Sequeira, 2020).

Refer to Appendix G(a) for the Transport Impact Assessment.

Stream Rehabilitation:

Rehabilitation to the stream to the north of the site (i.e. stream 10) would also take place. There is a detailed rehabilitation plan included in the EMPr (refer to Appendix H) and the Aquatic Biodiversity Impact Assessment Report (refer to Appendix G(e)), but Snaddon (2021) indicates the following necessary rehabilitation requirements:

- Bed (head-cut) Stabilisation;
- Bank (lateral) stabilisation);
- Removal of invasive alien plant species; and

- Replanting of rehabilitated areas.

Regular maintenance would also be required, hence the Maintenance Management Plan in the EMPr (refer to Appendix H).

Services:

Proposed services are indicated in Figure 4, Figure 5 & Figure 6 and are outlined below.

Water

There are no potable water networks in the vicinity of the proposed development (Schoonwinkel, 2020).

The total Average Annual Daily Demand (AADM) for the proposed development is estimated at 13 400 L/day (Schoonwinkel, 2020). The average estimated daily flow is 0.16L/s and a peak factor of 2.4, therefore the network would be designed for a flow of 0.38 L/s (Schoonwinkel, 2020). The internal reticulation network would have pipes of 110 mm in diameter and the services are depicted in Figure 6 (Schoonwinkel, 2020).

Two bulk water supply lines are proposed and are being applied for; 1) an interim private supply which will source from an existing private irrigation line and 2) a long-term solution which will source water from the municipal network in Lanquedoc. These two solutions are described below.

1) Interim bulk water supply:

The proposed interim solution involves tying into the existing York Dam 300 mm diameter irrigation supply line that currently feeds a part of the Boschendal Estate irrigation reticulation. There is an existing "take-off" for water supply to existing houses just off Hoof Road within the York Farm boundary (refer to Figure 4). The existing connection would be upgraded to a 160 mm connection and a new 160mm diameter uPVC Class 12 pipe would be laid to the Retreat. The new pipe route would extend 282m and be installed within the road reserve on Hoof Road (Middelmann & Hurworth, 2021). The pipe would cross a perennial stream where approximately 20 m would be fastened to the existing culvert. The pipeline will terminate at the entrance of the Retreat. A 160 mm diameter uPVC Class 12 connection will be tied into the main line and feed the proposed meter chamber within the development boundary (Middelmann & Hurworth, 2021). In the interim, a holding tank and combination sand filter and Ultra-violet water treatment plant will be installed to treat the "irrigation water" to the required quality and standard for Municipal potable water. The internal reticulation is described in the next paragraph and would be for both the interim and final potable water supply solutions.

2) Long-term bulk water supply:

In the long-term and following permission from affected landowners, bulk water would be sourced from the external municipal network in Lanquedoc (Middelmann & Hurworth, 2021). An underground 160 mm diameter uPVC link main is proposed to be constructed from a connection point on the Lanquedoc PRV water distribution zone, on the fringe of the Lanquedoc estate, along Hoof Road and into Boschendal (refer to Figure 5) (Middelmann & Hurworth, 2021). The routing of the western segment of the proposed water line would be determined on site but would be limited to the northern side of the roadway. It would either be routed within the northern half of the road (i.e. hard/blacktop) or between the existing hard top and row of gum trees alongside it (there is currently compacted, bare ground presently between the gum trees and hard/blacktop). A bulk meter would be required at the Boschendal boundary, proposed at a convenient location outside the security gate and to the approval of the local authority, and the pipeline would continue as a private main up to the Retreat development, on Portion 11 of Farm 1674 (Middelmann & Hurworth, 2021). The pipeline would bridge various stormwater culverts by surface fixing. This link main is in principle in accordance with the alignment proposed in the GLS capacity analysis report and accompanying schematics for the development, dated 5 December 2020, and has been formally endorsed by confirmation of capacity by the local authority.

The water demand for the New Retreat is estimated at 13.4 m³ per day, and this capacity is available in the network (refer to Appendix E16) (Middelmann & Hurworth, 2021). The main would terminate at the development, and a supply off this main would provide potable and fire water to the Retreat. This supply would be managed through a private sub-meter and would separate on-site into a 110 mm uPVC Class 16 fire ring and a 50 mm uPVC Class 12 domestic system (Middelmann & Hurworth, 2021).

Refer to Appendix G(b) for the Engineering Services Reports.

Sewer:

There is no existing functional sewer system for development and the historic pipe and septic tanks systems have been abandoned and will not be rehabilitated (Middelmann & Hurworth, 2021). These existing septic tanks are located in close proximity to the cottages, which is not ideal for future development, as this does not meet the requirements of section 133(2) of the Stellenbosch Municipality Water Services Bylaw (August 2017), which states that soakaways are not permitted within 5 metres of a dwelling (Nadeson, 2019). For this reason, the entire sewer infrastructure requires replacement.

Based on the water demand calculations, the Peak Day Dry Weather Flow (PDDWF) is calculated at 10kl/day (Middelmann & Hurworth, 2021).

A conservancy tank of 30m³ capacity would be utilised to temporarily hold/store the sewage and wash-water until off-site disposal occurs (Middelmann & Hurworth, 2021). The wastewater from this tank would be pumped out by a honeysucker as required for off-site disposal. The siting of the various components has been intentionally devised in order to pose the least risk possible on freshwater systems on and around the site. The siting of the proposed pumpstation, pipelines, and conservancy tank has been aimed at locating the conservancy tank further from the stream by placing it on the opposite side of the Ou Wa-pad, to the south-west of the site. Note that in the long-term, the intention is to connect to municipal supply, but this would be done when capacity is available and approved by the Municipality and would be the subject of a separate application for Environmental Authorisation, should there be any Listed Activities triggered. DWS has confirmed (via an email dated 18 May 2021) that the proposed

development (Alternative 3) can be registered as a General Authorisation. Proof of the registration process is included in Appendix M.

An existing private contractor who currently services the larger Boschendal farm would be used to remove sewage from the site and confirmation of this service is included in Appendix E16.

The proposed water infrastructure does not trigger any Listed Activities under NEMA as the various options are below the capacity thresholds contained in the Listed Activities pertaining to provision of sewage and water networks (particularly pipeline diameters). Water storage requirements are also below thresholds indicated in the Listed Activities.

Refer to Appendix G(b) for the Engineering Services Report.

Electricity:

The proposed development will be supplied with a 200 KVA (300 Amp three phase) low voltage connection to the new site reticulation (pers comms, R. Clark, TRAC, 25/03/2021). The new supply would be taken from the existing Kylemore Farmers 1 Eskom 11 kV line (refer to Figure 7) via a new 11kV Tee-off. This would be installed to run across the gravel farm road from the existing Eskom 11 Kv overhead line (pers comms, R. Clark, TRAC, 25/03/2021). The new line would feed a new 11 kV/420 Volt 200 Kva pole-mounted transformer, installed on the site and connected to a new 300Amp (200Kva) three-phase low voltage Eskom bulk supply meter point (pers comms, R. Clark, TRAC, 25/03/2021). It is also the intention to supplement power from the grid with rooftop solar panels in the future (pers comms, R. Clark, TRAC, 25/03/2021).

Eskom have confirmed that sufficient capacity is available, and this letter is included in Appendix E16.

The reticulation network within the development boundary would be a private network and would be designed to comply with the standards and requirements of SANS 10142 (Schoonwinkel, 2020). An underground internal low voltage network would be installed from the Eskom bulk supply point to each of the buildings (Schoonwinkel, 2020). The operation and maintenance of the private internal reticulation services would be the responsibility of the Retreat management (Schoonwinkel, 2020). Energy efficient lighting technology would be used as far as possible to reduce the energy requirements of the proposed development (Schoonwinkel, 2020).

The proposed electrical infrastructure does not trigger any Listed Activities under NEMA as they are below the capacity thresholds contained in the Listed Activities pertaining to power. The rooftop solar is also an exclusion under the Listed Activities referring to renewable energy and solar power, and so, would not trigger Listed Activities in terms of NEMA.

Refer to Appendix G(b) for the Electrical Engineering Services Reports.

Refuse:

Refuse will be collected at the Retreat by the farm management and disposed of with the refuse generated on the farm (Schoonwinkel, 2020). Collection of refuse is currently done by a private company who dispose of the waste at a registered site (Schoonwinkel, 2020). Refer to Appendix E16 for evidence of the use of a private contractor who has confirmed capacity to service the Retreat.

Refer to Appendix G(b) for the Engineering Services Report.

Telecommunications:

A fibre spine is proposed to be installed along Hoof Road in the future, and the development will be equipped with a duct and drawpit system to provide connectivity to all units (pers comms, M. Middelman, MH&A Consulting Engineers, 18/03/2021).

Refer to Appendix G(b) for the Engineering Services Report.

Stormwater:

Stormwater would be managed primarily by infiltration through existing soft or new landscaped or permeable surfaces (Middelmann & Hurworth, 2021). Car parking areas would be constructed from permeable gravel-fix systems, or permeable grass blocks, and edge restraints would be low and/or have drainage gaps. Landscaped pedestrian areas and planting would also be permeable (Middelmann & Hurworth, 2021).

Surface flow that may be generated by high rainfall events would be allowed to pass through the development by surface escape, without causing flow concentration (Middelmann & Hurworth, 2021).

Flood management measures to protect the development from flooding of the adjacent watercourse would be required (Middelmann & Hurworth, 2021). These measures comprise the conversion of the existing culvert crossing on Hoof Road to an engineered low-level road crossing to contain flood flow safely under and over the new culverts, within the river corridor (Middelmann & Hurworth, 2021). The existing berm on the development side of the watercourse would also be formalised to be continuous, reprofiled and raised (Middelmann & Hurworth, 2021). The existing head-cut within the stream would be "flooded" (i.e., water would be allowed to pool therein) so that the erosive cut is less likely to move upstream and there would be some low retaining of the channel side embankments in gabions, as well as floor armouring throughout the structure. These measures are in accordance with the Flood Study by Mark Obree of 25 February 2021 and are indicated on the MH&A flood protection drawing C5960 / 05 / 01.

There would also be rehabilitation measures for the watercourse, as described above.

Refer to Appendix G(b) for the Engineering Services Report as well as to Appendix G(i) for the Flood Report.

2. Explain how the proposed development is in line with the existing land use rights of the property as you have indicated in the NOI and application form? Include the proof of the existing land use rights granted in Appendix E21.

The proposal is aligned with the overarching existing planning intentions for the site in that the existing rights provide thresholds for tourist accommodation and tourist facilities; however, the threshold would be exceeded for the proposed development and so consent from the Stellenbosch Municipality would be required.

Further to that which had been noted in the NOI, note that the Stellenbosch Municipality has provided their Power of Attorney for the proposed line within the road and road reserve for Hoof Road (refer to Appendix O).

3. Explain how potential conflict with respect to existing approvals for the proposed site (as indicated in the NOI/and or application form) and the proposed development have been resolved.

The property is zoned Agriculture and Rural Zone in terms of the Stellenbosch Municipality Zoning Scheme By-law (ZSBL). The proposed development is not permitted 'as of right' in terms of the primary and / or additional rights permitted in terms of the ZSBL, 2019 because it will exceed the permissible thresholds for the proposed tourist accommodation and tourist facilities within the proposed Retreat, to be located on a portion of Portion 11 of Farm 1674. The primary and consent uses permitted in an Agriculture and Rural Zone, as listed in section 201 (1) of the SMZSBL are depicted in Table 3.

Table 3 Extract from the Stellenbosch Zoning Scheme By-law (source: NMA, August 2020)

	SM ZONING SCHEME BY-LAW (SM ZSBL)	APPLICATION PROPOSAL	COMPLIES
PRIMARY USE	<ul style="list-style-type: none"> • Agricultural building (≤2000 m²) • Agriculture • Dwelling house • Forestry • Natural environment • Occasional use (one event/year) • Private road • Polytunnel (≤2000 m²) • Second dwelling • Employee housing (one unit) 	Primary use remains Agriculture	Complies
CONSENT USE	<ul style="list-style-type: none"> • Abattoir • Additional dwelling units (max 4) • Airfield • Airstrip • Agricultural industry (>2000 m²) • Camping Site • Day care center • Freestanding telecommunication base • Helicopter landing pad • Intensive feed farming • Kennel • Market • Occasional use (>one event/year) • Plant nursery • Polytunnel (>5000 m²) • Renewable energy structure • Service trade • Tourist accommodation establishment • Tourist facility (new buildings or exceeding threshold) 	Tourist accommodation Establishment and Tourist Facilities	<p>The application zoning scheme is the ZSBL.</p> <p>Consent in terms of the ZSBL is required as the proposal fits the definition of tourist accommodation and tourist facilities.</p> <p>Even though the proposed land use i.e. tourist accommodation and tourist facilities complies with the provisions of the ZSBL in an Agriculture and Rural Zone, a consent use in terms of the ZSBL is required due to the total number of bedrooms in the buildings which are used as tourist accommodation exceeding 7 bedrooms or 14 people for the entire land unit (i.e. 17 bedrooms and 34 people for this York Farm Cottages application). "New buildings" are direct extensions to existing footprints.</p>
BUILDING LINES	<p>Tourist accommodation Establishment: in exiting approved dwelling houses</p> <p>Tourist Facilities: 5 m street and common boundaries: 1 storey height: maximum coverage as approved by Municipality</p>	Tourist accommodation Establishment: in exiting approved dwelling houses	Complies

		Tourist Facilities: 5 m street and common boundaries: 1 storey height: maximum coverage as approved by Municipality	
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However, the proposed development is also not in direct conflict with the land uses generally permitted within the Agriculture and Rural Zone, as the proposed development can be developed within this zone subject to a land use application to the Stellenbosch Municipality (SM) to grant its Consent for the establishment of the proposed development.

Note that since the compilation of the Draft BAR, the Stellenbosch Municipality approved the consent application (refer to Appendix E15)

4. Explain how the proposed development will be in line with the following?

4.1 The Provincial Spatial Development Framework.

The purpose of the PSDF is among other things, to guide the location and form of public investment (NMA, August 2020). To support the PSDF, it is prudent to understand the principles that inform public investment decisions and align the private sector's response accordingly, wherever possible (NMA, August 2020). It is also important to indicate the challenges that the provincial government sees as significant for the rural economy and the concomitant public investment policies that are pursued to address these challenges (NMA, August 2020).

The PSDF promotes the principles of diversification and strengthening of the rural economy (NMA, August 2020). Both these principles are strongly advocated for in the Western Cape's agricultural areas generally, including the Stellenbosch Municipal area within which Boschendal Estate is located (NMA, August 2020). The PSDF promotes the tourism and hospitality industry to allow for the diversification of the agricultural and rural economy, particularly through farming, heritage, and eco- and agri-tourism (NMA, August 2020).

The PSDF encourages economic growth and the protection of biodiversity, heritage, scenic landscapes, and agricultural areas (NMA, August 2020). The proposed development promotes economic opportunities for the local area (Dwars River Valley) through the use of the existing York Farm Cottages on Portion 11 of Farm 1674 for tourist accommodation and tourist facilities, while acknowledging the importance of the heritage, scenic landscapes and environmental and agricultural importance of the area (NMA, August 2020).

4.2 The Integrated Development Plan of the local municipality.

The Stellenbosch Municipality IDP (i.e. the Stellenbosch Municipality Integrated Development Plan (IDP) 2017- 2022 – 2018 Review) proposes a vision for the SDF described as "Settlements, nature and agricultural areas supportive of opportunity and innovation" (NMA, August 2020). In this regard, NMA (August 2020) highlight the following focus areas of the IDP as relevant (with their associated SDF implications):

- Valley of possibility (Containment of settlements to protect nature/ agricultural areas and enable public and non-motorised transport and movement).
- Green and sustainable valley (Protection of nature areas, agricultural areas, and river corridors).
- Safe valley (Denser settlements with diverse activity to ensure surveillance).
- Dignified living (A specific focus on the needs of "ordinary" citizens, experiencing limited access to opportunity because of restricted available material resources).
- Good governance and compliance (Presenting information, including opportunities and choices in a manner that assists its internalization by all).

NMA (August 2020) adds that the IDP notes that the: "Contribution in terms of GDP of the agriculture sector is small compared to other economic sectors. However, the agriculture sector forms the basis of many additional economic activities in the CWD (Cape Winelands District) and is the primary driver of tourism in the area. The farming of grapes, peaches and pears are the main agricultural activities and the production of these crops is dependent on fertiliser, of which some is manufactured locally, seedlings (also obtainable locally), labour, fuel, mechanisation (supplied locally), water and energy. Farmers also require funding and insurance, which forms part of the finance and business services sector. National and global impacts that have a positive or adverse impact on any facet of farming can therefore also influence the broader economy of the CWD."

4.3. The Spatial Development Framework of the local municipality.

The SM SDF (approved November 2019) identifies seven principles to guide the spatial development of Stellenbosch and provides planning and design guidelines and principles to direct spatial form in the Stellenbosch Municipal Area (SMA) (NMA, August 2020). NMA (August 2020) note that the principles include the following:

- Maintain and grow natural assets
- Respect and grow cultural heritage
- Direct growth to areas of lesser natural and cultural significance as well as movement opportunity
- Clarify and respect the different roles and functions of settlements
- Clarify and respect the roles and functions of different elements of movement structure
- Ensure balanced, sustainable communities
- Focus collective energy on critical lead projects

Apart from the relevant principles and guidelines, the SM SDF also contains plans and proposals for strategically located urban nodes within the municipal area. The Groot Drakenstein Node at the intersection of the R310 and the R45 is one such node in proximity to Farm 1674/11 but not causally related to the proposed application.

Boschendal Estate falls within the larger Dwars River Valley focal area. Refer to Figure 17 for an illustration of how the various settlements in the valley (Pniel, Lanquedoc, Johannesdal, and Kylemore) relate to one another and the external road network.



Figure 17 Dwars River Valley Concept (source: NMA, August 2020- extracted from Stellenbosch Municipality SDF, 2019)

The SM SDF includes Boschendal Estate's Draft Conceptual Framework (CF) (refer to Figure 18) and makes reference to Boschendal's current planning focus areas listed below, as well as the provisional proposal to open the Ou Wapad for use by local NMT in the future.

NMA (August 2020) describe Boschendal Estate's current planning focus as being centred on the following elements:

- Reinforcing the agricultural role and business of Boschendal Estate, thereby creating local job opportunities.
- Addressing ecological and social injustices of the past as far as possible in the planning and design of the Boschendal Estate and surrounds.
- Promoting experiential tourism on the Boschendal Estate to augment the agricultural business component through the rehabilitation of old derelict buildings into guest accommodation and other appropriate land uses.
- Improving access and mobility including investment in NMT within Boschendal Estate.

The SM SDF notes that the implications of a new NMT route following the alignment of the Ou Wa-pad for the overall valley movement structure and settlement pattern is potentially significant as it will allow local residents affordable access to local destinations such as schools, clinics and work via foot or bicycle (NMA, August 2020). Where the new route connects with the higher order external access systems, local gateways can be created (NMA, August 2020). This in turn presents an opportunity to create more exposure to support local economic activity and / or logical locations for public investment in social facilities including public transport stops (NMA, August 2020). The Ou Wa-pad proposal directly affects Farm 1674/11 and the proposed Retreat (NMA, August

2020). Plans for the area also include an upgrade of the Lanquedoc Main Road Bridge over the Dwars River as part of a proposal to create a new ring road linking Kylemore to Lanquedoc and both of these settlements back onto the Helshoogte Road (refer to Figure 18) (NMA, August 2020).

The SM SDF states that agriculture and tourism are the Municipality's most competitive economic sectors and encourages the diversification of Stellenbosch's local economy (NMA, August 2020). The SDF also encourages the conservation of Stellenbosch's natural environment and heritage assets (NMA, August 2020). The SDF is clear that the sense of place of an area must be protected at all costs (NMA, August 2020). Against this background, the SM SDF (2019: 52) proposes that "the areas and spaces – built and unbuilt – that embody the cultural heritage and opportunity of Stellenbosch need to be maintained intact, and that others provide the opportunity for new activity, in turn exposing and enabling new expressions of culture" (NMA, August 2020).

NMA (August 2020) state that repurposing of the existing York Cottages, contributes to protecting and reinforcing the sense of place and overall rural character of the Dwars River Valley while supporting economic sectors that can in turn, provide employment and other secondary economic spinoffs for local communities. The repurposing of the eight existing cottages for the proposed Retreat considers carefully how this site relates to the Ou Wa-pad, and how it can support the Ou Wa-pad's potential future role as a contributor to improved integration across the Dwars River Valley (NMA, August 2020). This is echoed by Smuts & Scurr (2020) in the HIA. The proposed tourist facilities and accommodation as a land use to locate within the footprint of the old York Farm cottages, in the form of the Bertha Retreat, supports SDF's reference to "the opportunity for new activity, exposing and enabling new expressions of culture" (NMA, August 2020).

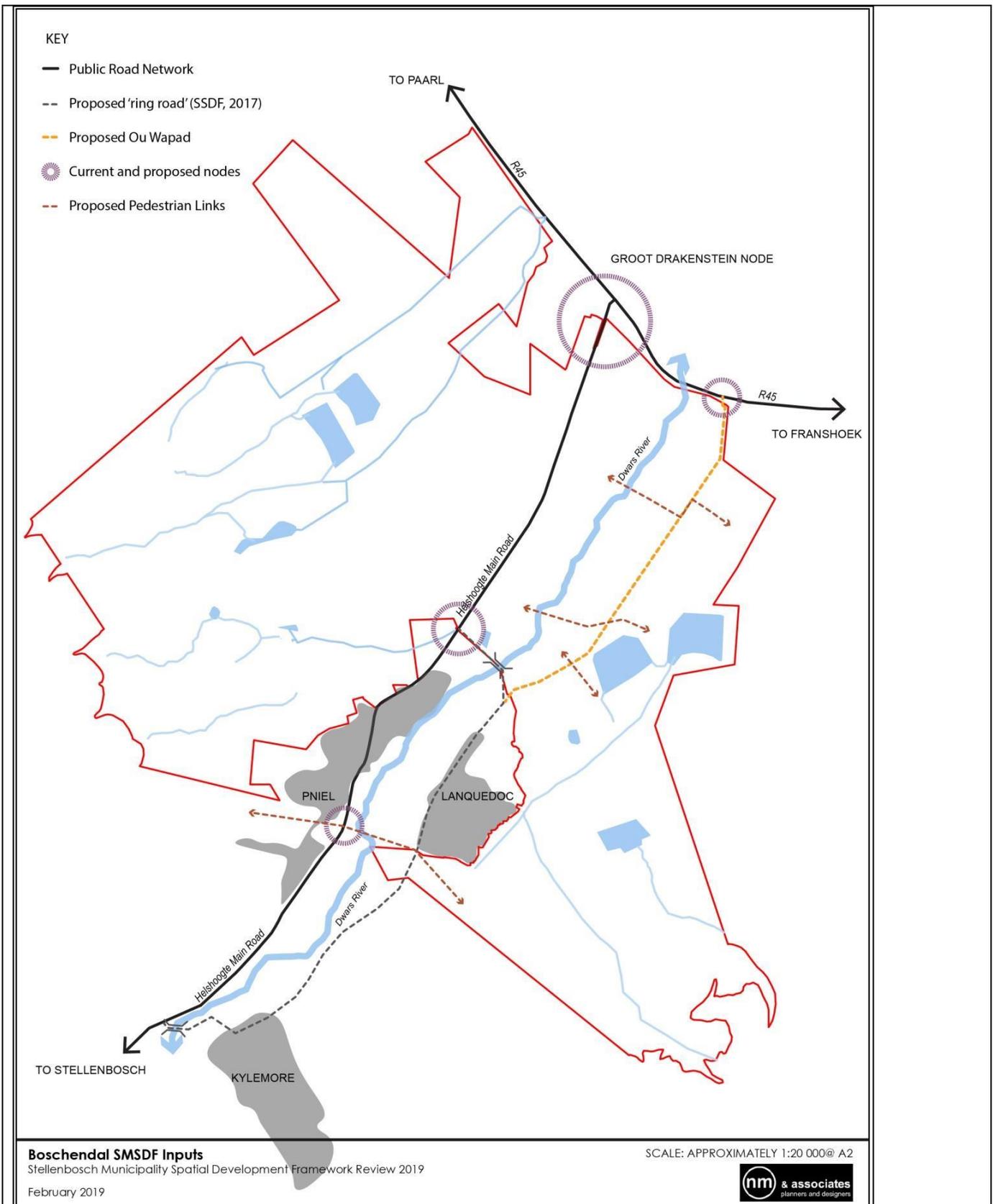


Figure 18 Conceptual proposal prepared as part of Boschendal Estate Draft Conceptual Framework contained in Stellenbosch Municipality SDF, 2019:83 (source: NMA, August 2020)

4.4. The Environmental Management Framework applicable to the area.

Note that the Stellenbosch Municipality has confirmed the EMF has been formally approved in 2019 and the site is not located within any conservation areas (refer to Figure 19) indicated therein. With respect to Figure 19, the draft EMF states that this plan is

"the first indicator or informant to be considered when considering a change in land-use that has the potential to affect the integrity of the environment". It also states that "the plan would also inform any EIA that may be required in terms of the NEMA".

The site is not located in any environmentally sensitive (i.e. core and buffer areas) in terms of the EMF.

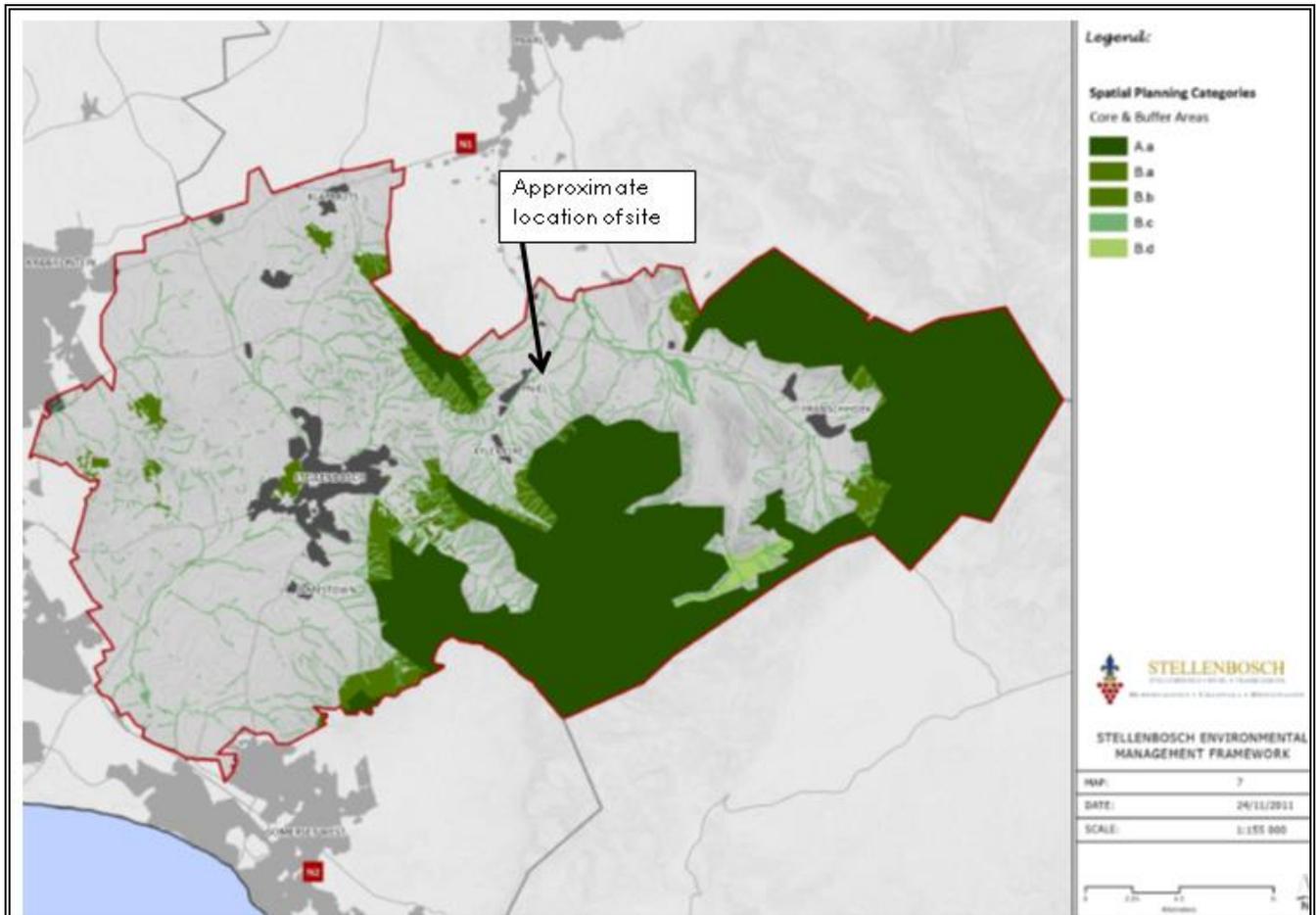


Figure 19 Location of Site Relative to the applicable Spatial Planning Categories Identified in the Draft EMF (adapted from the draft EMF, 2017)

5. Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development.

Comments from some of the relevant authorities pertaining to biodiversity have been provided during the 30-day public review period of the post-application draft BAR and have been incorporated into this Final BAR. CapeNature is the primary authority in this regard and their comment on the pre-application Draft BAR indicates that the general area has been largely transformed (which aligns with the findings of Helme, 2021) and that the main concern regarding biodiversity is linked to the watercourse (stream 10) and wetlands on the site (CapeNature, 2020). CapeNature further concurs with the findings of the freshwater assessment and indicate that the construction and operation mitigation measures provided by the specialist must be implemented (CapeNature, 2020). CapeNature were also been asked to comment on this report, and in response they confirmed that their previous comment still stands.

CapeNature's comments were addressed through the Basic Assessment process by including two relevant specialist assessment and by including all mitigation measures from the specialists into the EMPr (refer to Appendix H), for both construction and operational phases.

Specialist studies pertaining to biodiversity have been undertaken for the proposed development and these include an aquatic biodiversity assessment (refer to Appendix G(e)) and a terrestrial biodiversity compliance statement (refer to Appendix G(c)), both also addressing the proposed interim and final water pipelines A high-level faunal assessment that was carried out for the entire Boschendal Estate in 2019 and this was also used to inform the proposed development.

The aquatic biodiversity impact assessment has indicated a preferred development alternative, and this has been proposed as the preferred alternative in the application for Environmental Authorisation as a result. The preferred alternative provides the lowest risk to the freshwater ecosystem on and surrounding the site and potable water lines of the three alternatives assessed. This pertains specifically to the location and intentional siting of the components of the sewage system (as well as the preferred technology to make use of a conservancy tank in order to avoid wastewater entering the surrounding watercourses), the proposed rehabilitation measures for Stream 10, as well as the selection of a stormwater system that is designed primarily on infiltration through existing soft

or new landscaped and permeable surfaces. The pump for the preferred alternative would be located in an area which is already disturbed, beyond the ecological buffers of the watercourses on and nearby the site, and at the lowest point of the site in order to be gravity fed (a technical requirement from an engineering perspective) while the conservancy tank would be located well beyond the ecological buffers and would be across the access road opposite the entrance to the site. This would ensure that the components of the proposed sewage system and stormwater system that pose the greatest risk to the freshwater systems are located far from any ecologically sensitive areas and buffers. The wastewater would also be removed from the site, rather than being treated and used for irrigation, also to provide the least possible risk to the surrounding watercourse. Ecological buffers have also been established through the freshwater impact assessment and no built components of the proposed development would encroach into those ecological buffers. Although certain landscaping interventions proposed may encroach into the wetland and freshwater ecological buffers, these have been assessed to be of low impact (Snaddon, 2021) with the implementation of appropriate mitigation measure. There is also a rehabilitation management plan (serving as a maintenance management plan as well) for Stream 10. The proposed potable water line would also run within existing roadway and, where it crosses watercourses, would have the pipe strapped to the side of existing crossings/culverts to avoid the need to go into the watercourse. Other recommendations from a freshwater perspective relate to detail design for the stormwater system, wastewater treatment system and use of treated wastewater (which is not preferred and is not part of the preferred alternative), landscaping and rehabilitation, measures to ensure the continued integrity of the ecological corridor, and construction mitigation measures. These are detailed in the EMP and would have to be addressed at the relevant stages of the project as conditions of authorisation. The impacts of greatest severity are linked to the construction activities proposed for the flood protection measures, footpaths, service track (alternatives 1 and 2), amphitheatre and water pipelines, however, these impacts can be mitigated against, which would reduce the significance of these impacts to, at worst, low negative/negligible, for all three development alternatives (Snaddon, 2021) (noting that the preferred alternative would have comparatively more negligible impacts). Overall, the mitigation measures would result in a low positive operational impact from a biodiversity perspective (Snaddon, 2021).

From a terrestrial biodiversity/botanical perspective, the proposed development includes a fynbos rehabilitation component in the proposed landscaping, which would improve upon the ecological status of the site (Helme, 2021). The potable water lines have been intentionally routed to be located within roadway or in an area which is totally degraded with no natural vegetation remaining (Helme, 2021). The same applies to the limits of the proposed development and associated extent of berms to be re-established (Helme, 2021).

6.	Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development.
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There is an Ecological Support Area (ESA) which crosses through the site but does not cover the full extent of the site (refer to Figure 20). The ESA is indicated as a "climate corridor, river, wetland, watercourse" and is an ESA 2. The proposed long-term pipeline connection to Lanquedoc passes through degraded, unmapped land in the eastern half, but the western half passes through wetlands and watercourses mapped as ESA1 and ESA2 (Helme, 2021). There are no areas of biodiversity conservation concern along the alignment of the interim pipeline. This high-level mapping is the same under both the Cape Farm Mapper (refer to Figure 20 and SANBI GIS (refer to Figure 21) data.

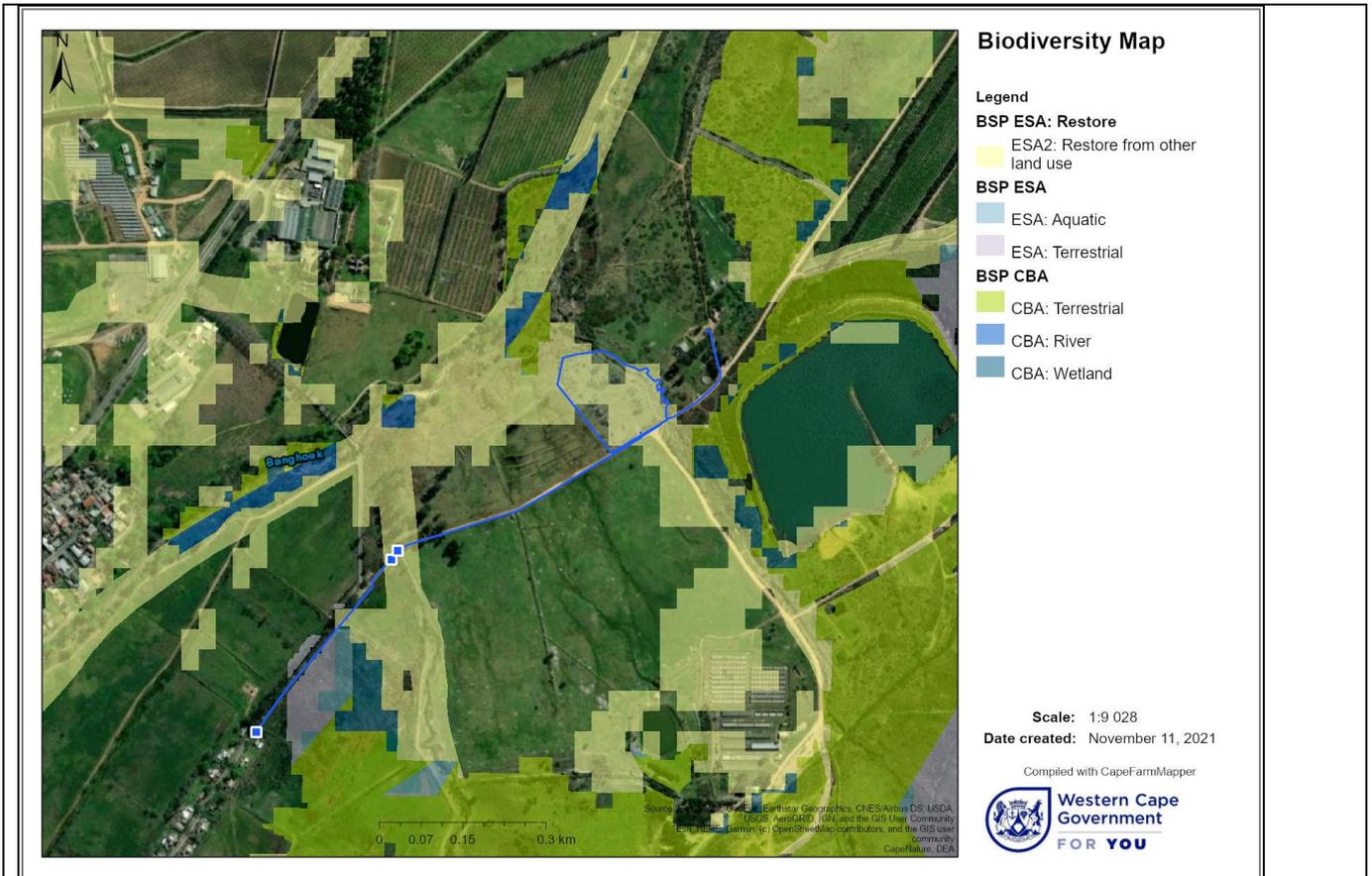


Figure 20: Biodiversity Map (created using Cape Farm Mapper, 11/11/2021, with site layers from MH&A" BERTHA RETREAT 4", 20/04/2021

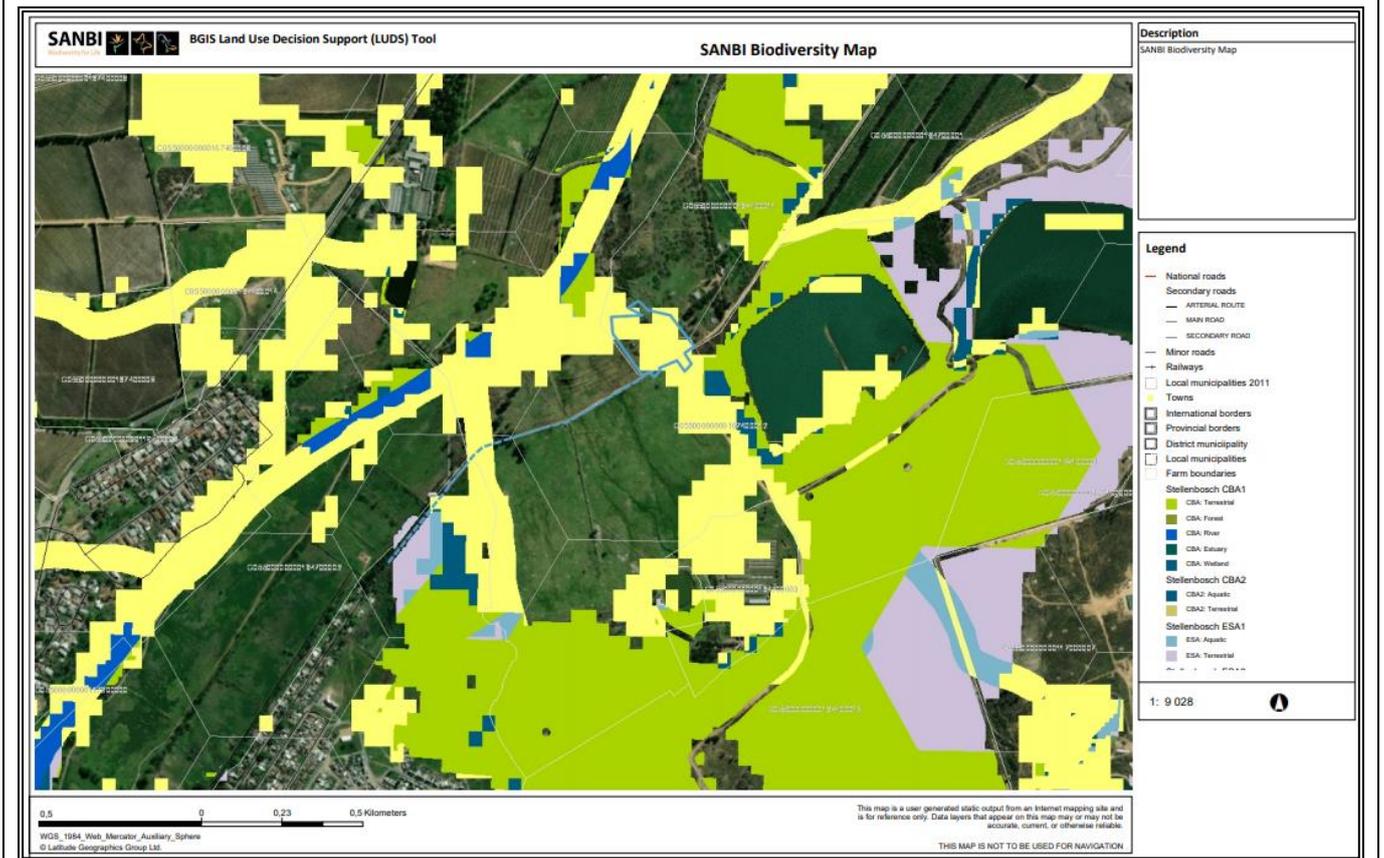


Figure 21 Biodiversity Map (created using SANBI BGIS, 10/05/2020, site outline reproduced by EAP using layers from MH&A, "BERTHA RETREAT 4", 20/04/2021 as a guide)

Given that data from SANBI, as indicated in Figure 20 and Figure 21, shows ESAs on site, these will be considered herein. Although CapeNature (2020) indicated agreement with specialists in that the general area has been largely transformed and that the main concern regarding biodiversity is linked to the watercourse (stream 10) and wetlands on the site.

Helme (2021) corroborates this by noting that about 75% of the site as ESA 2. The guidelines for this category are that it is degraded habitat that should be restored, mainly for its ecological connectivity value and reasons given for selection of this area as an ESA2 include the threatened status of the underlying (original) vegetation type, water resource protection, and potential habitat for threatened vertebrates (Cape Mountain Zebra) (Helme, 2021). The latter is purely theoretical, as is the former, with negligible natural habitat remaining on site (Helme, 2021).

ESAs are defined by Pool-Stanvliet, Duffell-Canham, Pence & Smart (2017) as "Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of Protected Areas (PA) or Critical Biodiversity Areas (CBA), and are often vital for delivering ecosystem services" and the desired management objective is to "maintain in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised".

The focus of WCBSP guidelines and the response thereto indicated in this report is on wetlands as that is the most relevant site sensitivity. Terrestrial guidelines are not considered as Helme (2021) confirms that there is almost no indigenous vegetation remaining (and that which is there has very low species diversity) on site, due to a long history of agricultural disturbance and this also makes it impossible to confirm or dispute the Swartland Alluvium Fynbos classification. Helme (2021) provides a similar confirmation for the proposed long-term pipeline route to Lanquedoc noting that the eastern half of the pipeline route is totally degraded, with no natural vegetation remaining, and that the western half is more intact with substantial natural vegetation remaining, but that applies to the area south of the road, and not to the area for the proposed pipeline, which is mostly is bare of vegetation, until one reaches an extensive planted avenue of exotic gum trees. The temporary water pipeline will be routed entirely within an existing dirt road and will thus not impact on any natural vegetation (Helme, 2021) Overall, Helme (2021) confirms that there are no faunal or botanical constraints to the proposed development.

The land use guidelines for an ESA wetland states that "a wetland not selected for meeting targets, but which is still a protected resource, is essential for delivering ecosystem services, and may support the functioning of PAs or CBAs" (Pool-Stanvliet *et al*, 2017).

Pool-Stanvliet *et al* (2017) indicate that permissible land uses are more flexible for ESAs than CBAs. Pool-Stanvliet *et al* (2017) go on to provide specific guidelines for such areas and these include the following:

- "All wetlands are protected under the National Water Act (Act 36 of 1998).
- Delineate all wetlands within 500m of a land use activity as per DWAF (2008) and apply for a Water Use Licence.
- Conduct a buffer determination assessment around all wetlands, regardless of ecological condition or ecosystem threat status. Refer to the National Freshwater Ecosystem Priority Areas (NFEPA) Implementation Manual for specific guidelines (for example, mining should not take place within 1 km of the boundary of the buffer around a wetland".

With reference to the above, some habitat loss of the types of wetlands mapped on the site would be acceptable, however the functioning of the ecosystem is not compromised. Furthermore, sites which hold such wetlands would, in terms of the WCBSP, require delineation, licensing and determination of the appropriate buffer.

A Freshwater Impact Assessment has been carried out in response to the information contained in the higher-level biodiversity spatial data. The mitigation has focused on keeping any anticipated negative impacts on the freshwater system low, which also considers the off-site (i.e. cumulative) aspects. Furthermore, with respect to specific guidelines provided by Pool-Stanvliet *et al* (2017), the Freshwater Impact Assessment has included the delineation of wetlands and river on site, and alongside the proposed pipeline routes, as well as the establishment (and appropriate motivation) of the required buffer areas. These buffers are already considered and applied in the development footprint for all development alternatives assessed, whereby no hard structures/building footprints would be located within these buffers and only appropriate landscaping, stormwater and rehabilitation measures would be located therein. Furthermore, the proposed pipeline routings have been devised to be within the existing road and/or in disturbed areas along the road, and where there are stream crossings or culverts, the lines would be fixed to the site of the existing structure and not entering the watercourse in any way. The rehabilitation of the stream area would also serve to support ecological functioning and would favour the return of more stream flora and fauna to this section of the river (Snaddon, 2021).

The proposed development has considered the WCBSP in so far as the development footprint avoids the most sensitive areas and includes buffers from aquatic features, as well as stormwater management design, flood protection and principles, and stream rehabilitation which have been considered appropriate by Snaddon (2021) and would result in low adverse impact on the freshwater system, with one low positive operational impact in terms of biodiversity. Furthermore, Snaddon (2021) includes a suite of mitigation measures which would be implemented during detail design (noting that many recommendations are already present in the services and stormwater plan as well as the proposed site plan), construction and operation, that would ensure low risk to the aquatic system, while acknowledging that some possible habitat loss could occur, noting also that Snaddon (2021) confirms that there may be positive (albeit low in significance) operational impacts through the landscaping and control of alien and invasive species on the site and within the stream adjacent to the site. Snaddon (2021) also provides for a rehabilitation plan, which must be implemented, and is included as a Maintenance Management Plan for approval in the EMP. These recommendations would form conditions of environmental authorisation (if granted by the Competent Authority).

<p>With regard to licensing, engagement with the DWS regarding the applicability of the NWA was initiated at the start of the environmental process (refer to Appendix F for more information in this regard) and their feedback has confirmed that the water uses can be Generally Authorised (refer to Appendix M).</p> <p>Other aspects of the guidelines such as use of indigenous vegetation, alien clearing and best practice measures have been addressed in the proposal through the landscaping plan (noting further that the planting list is supported by and has received input from an independent botanist), flood protection measures, stream rehabilitation plan, and the management requirements for the operational phase as well as design philosophy (e.g. stormwater control of 1:5 to 1:50 year flood).</p> <p>From a terrestrial biodiversity perspective, Helme (2021), asserts that the proposed development (note, for the site, not the pipeline routes) could actually enhance the ecological status of this area, by means of increasing the current indigenous plant diversity and cover (as proposed in development layouts), and making it more attractive to a wider range of birds and insects. Regarding the proposed pipeline routes, (Helme (2021) asserts that the temporary and permanent pipeline would be routed in an area of low sensitivity and impacts would be low negative before and after mitigation.</p>	
7.	<p>Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA.</p> <p>Not applicable as proposed development is not located in a coastal zone.</p>
8.	<p>Explain whether the screening report has changed from the one submitted together with the application form. The screening report must be attached as Appendix I.</p> <p>Refer to Appendix I for the screening report. The same report is included in the Application.</p>
9.	<p>Explain how the proposed development will optimise vacant land available within an urban area.</p> <p>The proposed development is not located within an urban area; therefore, this is not applicable.</p>
10.	<p>Explain how the proposed development will optimise the use of existing resources and infrastructure.</p> <p>The proposed development would make use of existing buildings and a site which has been subject to transformation in the past. It would, therefore, not require a greenfields site for this project.</p> <p>The proposed development would also utilise the existing access road as well as electrical and potable water services from the municipality/an existing private irrigation supply line. Furthermore, the proposed potable water pipeline routes would utilise existing roadway and/or disturbed areas rather than excavate undisturbed areas.</p>
11.	<p>Explain whether the necessary services are available and whether the local authority has confirmed sufficient, spare, unallocated service capacity. (Confirmation of all services must be included in Appendix E16).</p> <p>Sufficient spare service capacity for water has been confirmed by Stellenbosch Municipality and Eskom has confirmed electrical capacity from the existing line nearby the site. These letters are included in Appendix E16.</p> <p>The sewage resulting from the proposed development would be temporarily contained <i>in situ</i> through the inclusion of a conservancy tank of approximately 30 m³ capacity in the proposed development and the sewage itself would be removed as required through the existing system on the farm (i.e. removal by private contractor) and disposed of off-site as per the activities of the relevant contractor. Service capacity has been confirmed by the private contractor – refer to Appendix E16.</p> <p>With respect to the entire farm, refuse is collected by Boschendal maintenance department and bins cleaned at the “Droëbaan” site (on the farm), where some recycling for the entire farm takes place. The remainder of the waste is collected by a private contractor and delivered to an appropriate facility. Waste generated from the proposal would be managed as per the current practices on the farm. Refer to Appendix E16 for the evidence of use of a private contractor and confirmation that they have capacity to include the New Retreat site in their current service.</p>
12.	<p>In addition to the above, explain the need and desirability of the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013) or the DEA's Integrated Environmental Management Guideline on Need and Desirability. This may be attached to this BAR as Appendix K.</p>
	<p>Urban edge / edge of built environment for the area.</p> <p>While the York Farm cottages on Farm 1674/11 are located outside the urban edge as delineated in the Stellenbosch Municipality's SDF of 2019, the Municipality (as per sections 209 of the ZSBL) supports development of tourist accommodation and tourist facilities as additional or consent uses outside the urban edge on land parcels zoned Agriculture and Rural in terms of the SM ZSBL if these take place within existing building footprints on a land unit where the primary use of the land unit remains agriculture and where the proposed activity is subservient to the primary land use on the farm.</p> <p>Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur on the proposed site at this point in time?</p> <p>The cottages on site already exist and lend themselves well to development from both a location as well as form and nature perspective and the proposed development offers an opportunity to develop an underutilised area of the farm, which does not compromise the natural environment (Snaddon, 2021 and Helme, 2021), farming potential/land (Lanz, 2021) and heritage significance of the site and landscape (Smuts & Scurr, 2020). It is also located nearby the local communities who would use it. The proposed design and landscaping would also be respectful of the heritage of the area (as mitigation measures prescribed in Smuts & Scurr (2020) would be implemented). The site is presently not generating any benefits for Boschendal, the Bertha Foundation or to the local community, and the proposed development would offer a small number of employment opportunities for local people. There would also be further social opportunity for community groups to use the space for social and community upliftment (Smuts &</p>

Scurr, 2020). Finally, the location of the proposed development is optimally positioned to reintroduce and reinforce historic routes and movement patterns across the wider site with its historic links to the mountains, Pniël, Kylemore, Lanquedoc and the R45 (Smuts & Scurr, 2020).

Does the community/area need the project and the associated land use concerned (is it a societal priority)?

The proposed development is of a small scale but would present benefits for the surrounding community through the social upliftment programmes which make use of the current Retreat and the fact that they would continue to use the proposed New Retreat, and in a location that is closer and thus more accessible to them. There would also be some short-term economic benefits for those members who would be employed in the construction thereof as well as long-term economic benefit for those locals who would be employed during the operational phase.

From a social history perspective, the proposed development would initiate a reintroduction and reinforcement of historic routes and movement patterns across the wider site with its historic links to the mountains, Pniël, Kylemore, Lanquedoc and the R45.

The National Strategy for Sustainable Development and Action Plan 2011 – 2014 (NSSD 1) (2011) states sustainability (or a sustainable society) is seen as the overall goal of the NSSD 1. Sustainability in this context implies ecological sustainability. In the first instance, it recognises that the maintenance of healthy ecosystems and natural resources are preconditions for human wellbeing. In the second instance, it recognises that there are limits to the goods and services that can be provided. In other words, ecological sustainability acknowledges that human beings are part of nature and not a separate entity.

The proposed development balances human needs and that of nature in that the development would avoid environmental sensitivities and have low adverse impacts (with some positive impacts as well) on the natural system, it would not present a lost opportunity for agricultural use and would serve to support the social and environmental justice and community engagement programmes of the Bertha Foundation. The nature of the proposed development is also such that local communities would be able to make use of it, as well as activities groups for a variety of causes, therefore there are significant positive social benefits from a local and broader context to the proposal as well.

As stated in the Need and Desirability Guidelines, "consistent with national priorities, environmental authorities must support "increased economic growth and promote social inclusion", whilst ensuring that such growth is "ecologically sustainable"." The proposed development seeks to achieve a balance between social, environmental, and economic objectives such that the financial and environmental sustainability and social integration is secured.

Is this project provided for in the **infrastructure planning** of the municipality and if not, what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (

Most of the infrastructure required by the proposed development is available on a farm-wide scale, other than the electricity and potable water. Confirmation of available capacity from Eskom for electricity and from Stellenbosch Municipality for water has been included in Appendix E16.

While no existing sewage infrastructure exists, the proposed development includes a self-contained conservancy tank that would temporarily house the sewage until removal by a private contractor. Stellenbosch Municipality has also indicated that capacity would be available for sewage once infrastructure upgrades to the Pniel WasteWater Treatment Works are complete (still anticipated for June 2022 as per email from Mr. Tyrone King, Manager: Infrastructure Services, Stellenbosch Municipality – refer to Appendix E16). Note, however, that any new sewage lines to the Pniel Wastewater Treatment Works would fall under a separate NEMA application at the time is considered, where there are triggers.

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

The proposal does not fall within the 18 Strategic Integrated Projects identified for South Africa.

Do location factors favour this land use (associated with the development proposal and associated listed activity (ies) applied for) at this place? (This relates to the contextualisation of the proposed land use on the proposed site within its broader context.)

The cottages already exist and are vacant. Furthermore, the land surrounding the cottages is currently not being used for anything. Using these buildings as tourist accommodation and tourist facilities, as well as the primary intent of providing space for community groups and social and environmental activist groups, can positively contribute to new economic opportunities on the farm (albeit to a small degree), as well as for local artisans who would sell items via the occasional informal market on site, but also holds the possibility of attracting further visitors to the areas surrounding Boschendal. This can have economic and social benefits for the communities of Pniel, Lanquedoc and Kylemore. The use of the existing cottages would aid in preserving and enhancing existing buildings and most notably, due to the close proximity to the immediate local communities, also ensure that the local communities which make use of the current Retreat would continue to have the opportunity to make use of the proposed Retreat due to the much closer proximity to local communities than the existing Retreat. The location of the site is also in an area which is not recommended for crop production (Lanz, 2021) and would, therefore, not present an opportunity cost for farming. There would also be some limited job-creation as a result of the proposed development. From a social history perspective, the site is well placed along a historic route and would serve to initiate the reintegration of the local communities with the farm.

The Valley Context- Natural Setting

Boschendal Estate, on which the proposed Retreat site is located, is situated within a dramatic valley setting surrounded by mountain ranges and associated conservation areas (NMA, August 2020). The eastern part of the estate in which the subject site is located, has not been farmed as intensively as the western parts, and therefore

contains large areas of natural vegetation (NMA, August 2020). This part of the farm, which includes the slopes of the Drakenstein Mountains, is also home to a number of streams which drain the upper slopes and ultimately flow into the Dwars River (NMA, August 2020). Some of the streams feed the farm dams located east of the York Farm cottages within this part of the farm (NMA, August 2020). The heavily vegetated Dwars River corridor is a focal point for the valley and a backdrop to the small settlements and clusters of farm buildings located along the valley floor (NMA, August 2020).

Boschendal Estate as part of the Dwars River Valley

Boschendal Estate is situated in the Dwars River Valley with the settlements of Pniel, Lanquedoc, Johannesdal and Kylemore in close proximity to the farm (refer to Figure 22) (NMA, August 2020). The Dwars River valley has a predominantly agricultural nature, with urban development focused in Pniel on the R310. Pniel contains some local administrative functions, a few retail outlets, a hall, a school, and sports grounds (refer to Figure 22) (NMA, August 2020).

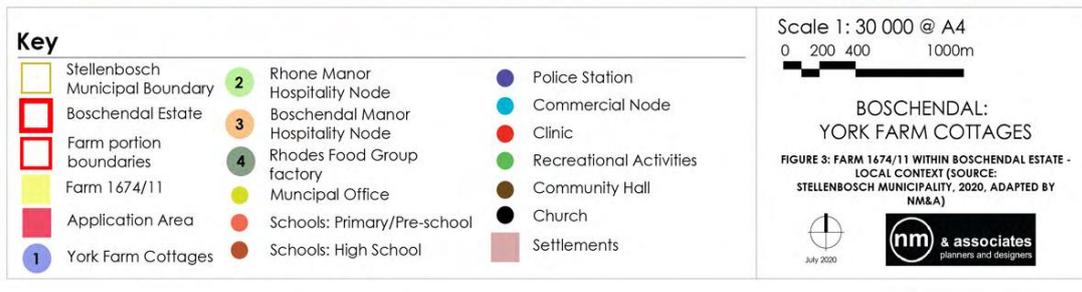
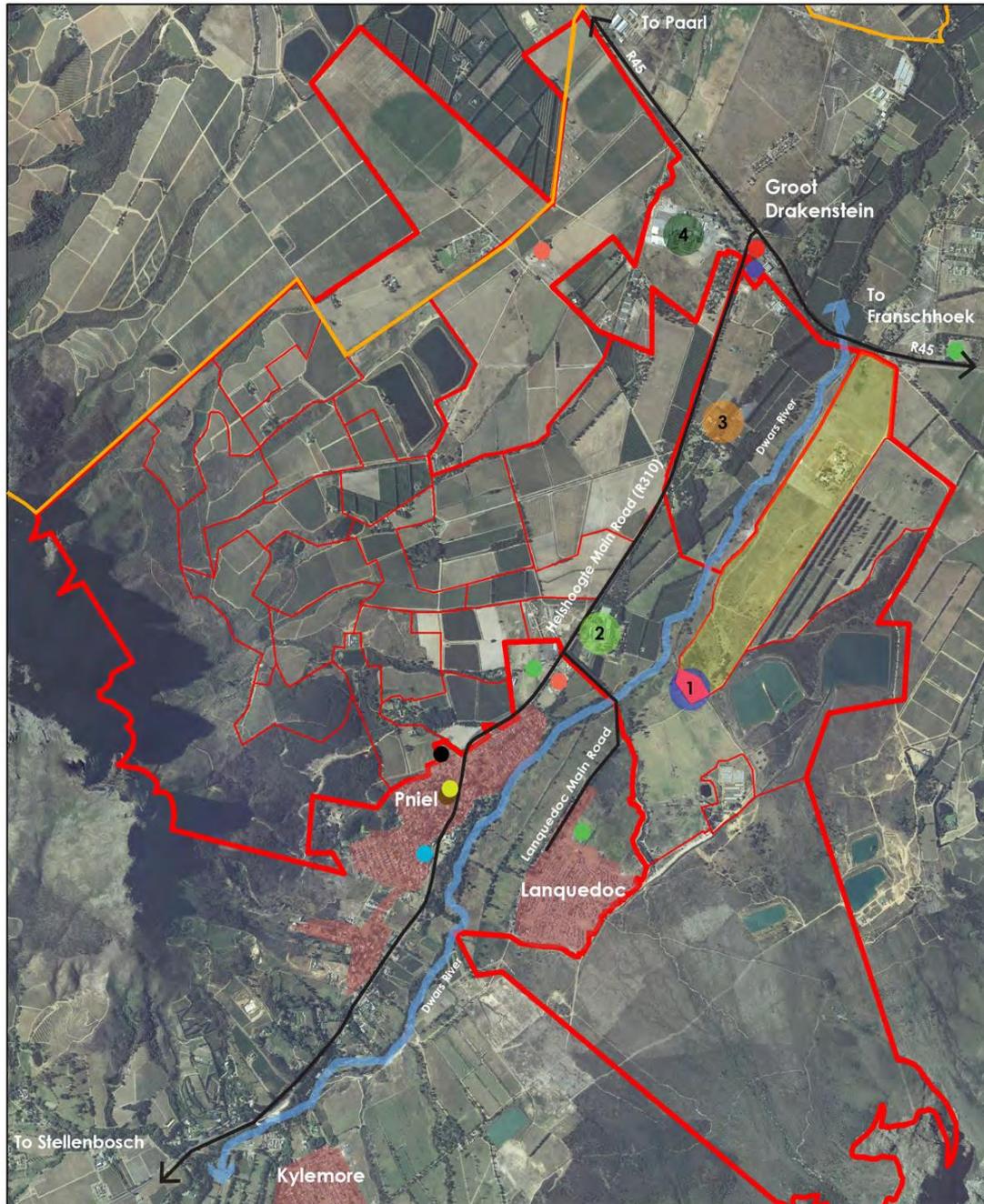


Figure 22 Local Context (source: NMA, August 2020)

Kylemore and Lanquedoc are located off the R310 with limited public facilities (NMA, August 2020). The Groot Drakenstein node to the north at the junction of the R310 and R45 contains business and community uses, including a police station and the large Rhodes Food Group factory which is a local hub of employment (NMA, August 2020). The estate is bounded in the east and the south by farms and conservation areas respectively (NMA, August 2020).

The Boschendal Estate is the second oldest wine farm in South Africa and was established in 1685, with Groot Constantia located in Cape Town, being the oldest. Boschendal Estate consists of approximately 28 Farm portions and measures approximately 1800 ha in extent (NMA, August 2020). The Estate is bisected by the R310, its northern edge defined by the Groot Drakenstein node and the R45. The estate is further partitioned by the Dwars River (NMA, August 2020). Figure 23 below (extracted from the Boschendal Draft Conceptual Framework, 2019) is a diagrammatic representation of the estate as three distinct parts. Farm 1674/11, to which the site belongs, is located in the easternmost part, east of the Dwars River (NMA, August 2020).

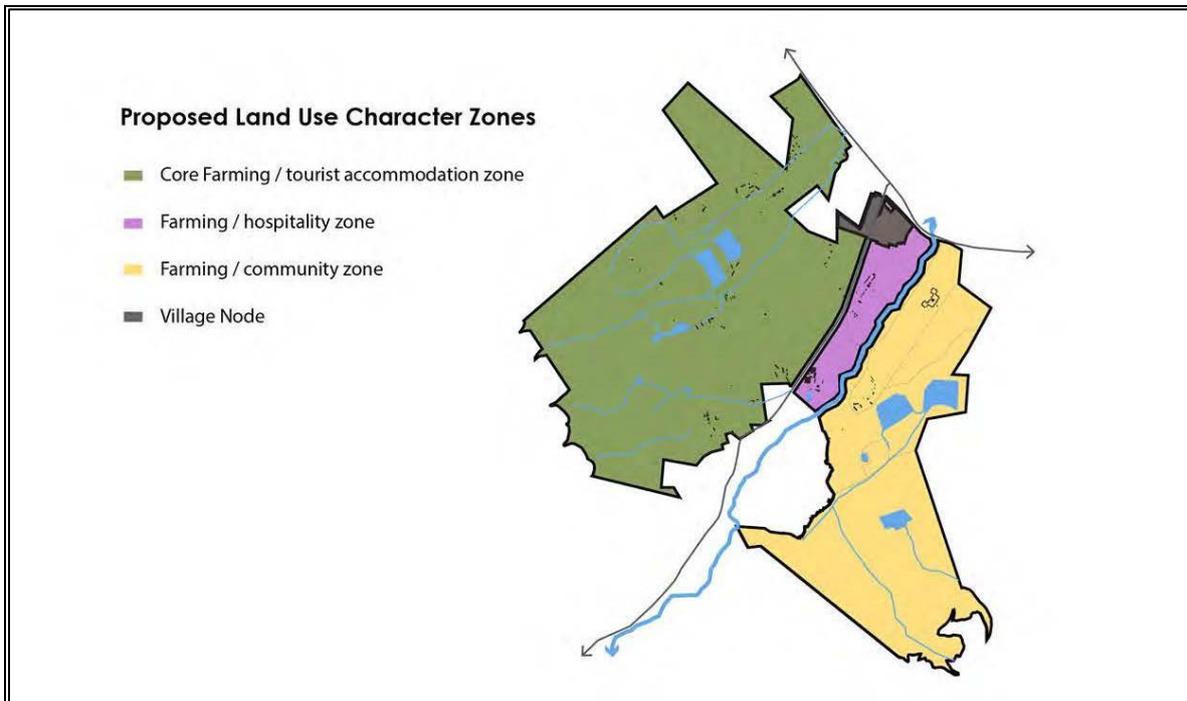


Figure 23 Land use character zones (extracted from Boschendal Draft Conceptual Framework, NMA & Associates, 2019) (source: NMA, August 2020)

The part of the estate to which the subject site belongs, is referred to by NMA (August 2020) as the “eastern precinct” and is comprised of the following portions:

- Portion of Farm 1674/11;
- Portion of Farm 1647/1;
- Portion of Farm 1647/3; and
- Portion of Farm 1674/13.

NMA (August 2020) adds that it also incorporates parts of the following Portions:

- Farm 1730; and
- Portion of Farm 1674/10

The eastern precinct has historically been used mostly for grazing. It has also been utilised for farm labourer accommodation, and at one time a piggery on Farm 1674/3 (NMA, August 2020). It is also an important source of water for the estate (NMA, August 2020). It includes two large dams that are fed directly from the slopes of the Drakenstein Mountains and which are an important source of water for the estate. A large part of the precinct above the old Piggery has not been used for farming and currently accommodates game to support local conservation initiatives (NMA, August 2020).

Vehicles move between the three parts of the estate to support the farming and hospitality operations, using the external road network (NMA, August 2020). The York Cottages in the eastern precinct are accessed off the Lanquedoc Main Road which connects the estate to Lanquedoc, Pniel and the public node around the intersection of Lanquedoc and the R310 where the Pniel Primary School and Coronation Sports Grounds are located (NMA, August 2020).

This demonstrates that the York Farm cottages, of all the building clusters on Boschendal Estate, has the potential to have the most direct relationship with the existing valley communities (NMA, August 2020). The Bertha Foundation already runs programmes attended by the community and it is therefore beneficial for the Retreat to be located in such close proximity to the local communities (NMA, August 2020).

Surrounding Land Uses on the Farm

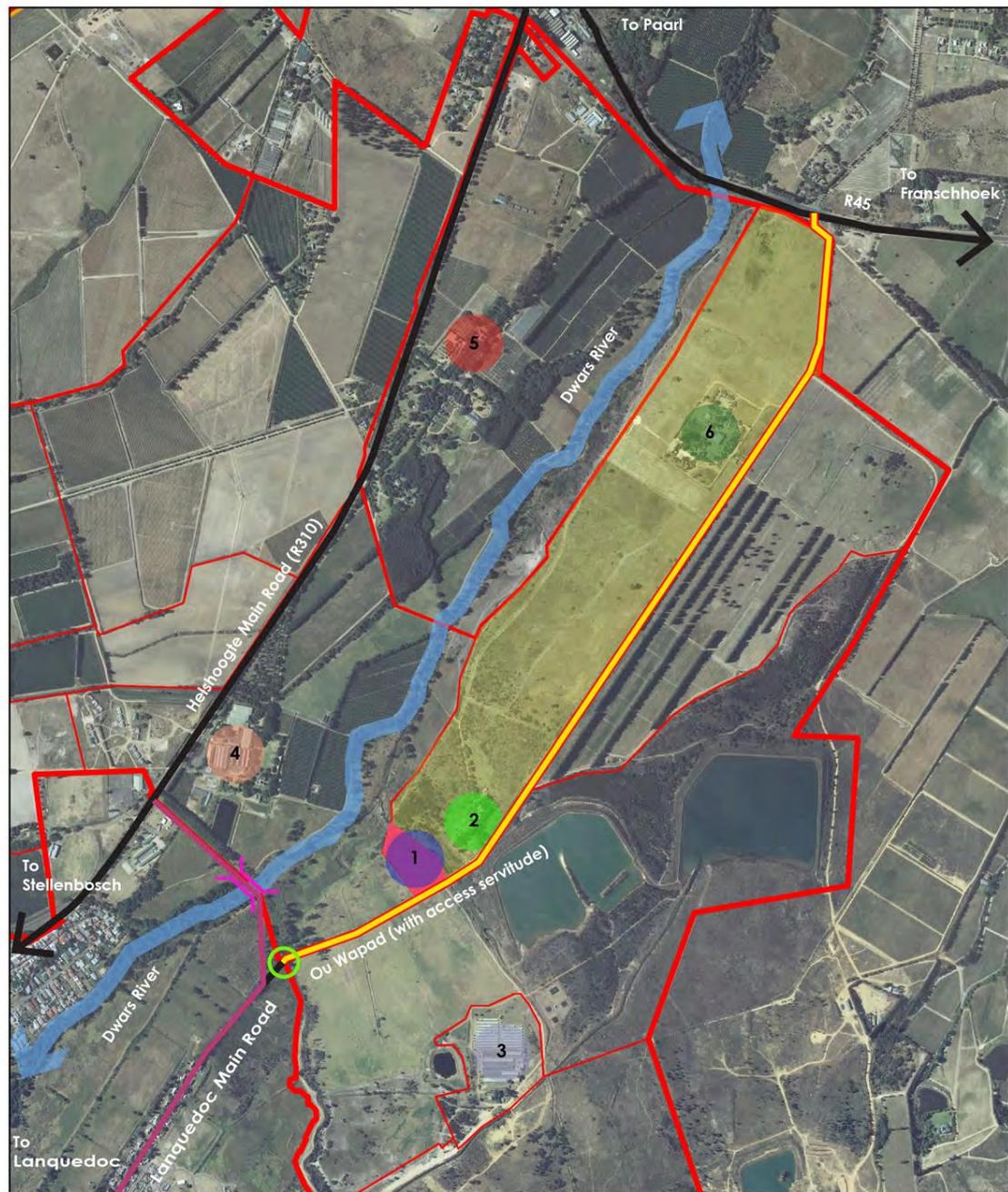
Boschendal is predominantly used for farming of grapes for wine production, stone fruit, livestock, and game (NMA, August 2020). It also contains areas for conservation, typically areas on the higher slopes of the surrounding

mountains (NMA, August 2020). The farm has two main hospitality hubs associated with the old Boschendal and Rhone manor houses (refer to Figure 24) (NMA, August 2020).

These hubs of activity comprise restaurants, tourist-related retail, a winery, and wine tasting facilities (NMA, August 2020). Outside of these hospitality hubs are several other significant homesteads, clusters of agricultural buildings and old labourer's cottages (NMA, August 2020). Land uses outside of the two main hospitality hubs include tourist accommodation, conference facilities, staff accommodation and farm related activities including stores, workshops, an early childhood development centre, farm laundry, packing sheds etc (NMA, August 2020).

There are a large number of vacant buildings currently on the estate, mostly in the form of clusters of old labourers' cottages (NMA, August 2020). The York Farm Cottages form part of the collection of derelict and vacant farm labourer's cottages. There are two other significant clusters of buildings within the eastern precinct which should be noted (NMA, August 2020).

Firstly, Thembaletu, located on Portion 11 of Farm 1674 is an old worker's hostel comprising 28 residential buildings, a large hall / recreation facility, kitchens, the total floor area of which measures approximately 4700 m² (NMA, August 2020). Note that Smuts & Scurr (2020) notes that, although a tangible heritage resource in the area, Thembaletu is far from the site and would not be affected by the proposed development. Secondly, the vacant and derelict Piggery located 450 m south-east of the York Farm cottages on Portion 3 of Farm 1674, comprises 18 long narrow sheds many of which are currently roofless and 8 larger long buildings, with these larger buildings alone having a floor area of approximately 4800 m² (NMA, August 2020).



Key

- | | | |
|----------------------------------|-----------------------------------|--|
| Boschendal Estate | Farming-related building cluster | Access point for subject site off R310/Lanquedoc Main Road |
| Farm portion boundaries | Piggery (derelict) | Lanquedoc Main Road |
| Farm 1674/11 | Rhone Manor Hospitality Node | Ou Wapad (with access servitude) |
| Application Area | Boschendal Manor Hospitality Node | Lanquedoc Main Road Bridge Upgrade (as part of proposed new ring road, SM SDF, 2019) |
| York Farm Cottages / New Retreat | Thembaletu Hostel (derelict) | |

Scale 1:15 000 @ A4

0 100 200 500m

**BOSCHENDAL:
YORK FARM COTTAGES**

FIGURE 4: FARM 1674/11 - EXISTING LAND USE AND ACCESS (SOURCE: STELLENBOSCH MUNICIPALITY, 2020. ADAPTED BY NMA)



July 2020



Figure 24 Surrounding Land Uses on the Farm (NMA, August 2020)

The majority of Boschendal is zoned for agriculture. The local context is also predominantly zoned for agriculture with the exception of the areas within the urban edge, such as Pniel, Lanquedoc and Kylemore which have a mixture of residential, community and commercial zonings (NMA, August 2020). While Boschendal is zoned Agriculture and Rural in terms of the ZSBL, over time additional rights and consent uses have been approved for various portions of Boschendal with the majority located on Portions 4 and 10 of Farm 1674, as well as on Portion 3 of Farm 1674 (located in the Drakenstein Municipality) (NMA, August 2020). These rights are mostly for tourist accommodation, a winery,

events facilities, and extended hospitality functions around the Boschendal and Rhone Manor House on Portion 10; tourist accommodation on Portion 4; and tourist accommodation and conference facilities on Portion 3 (NMA, August 2020).

Access to the site itself is obtained via the Ou Wa-pad, a 6m wide gravel servitude road which is currently only used by farm operational vehicles, which is accessed off Lanquedoc Main Road through a secure gate managed by Boschendal (NMA, August 2020). From this gate the Ou Wapad traverses Farm 1730 to access Portion 11 of Farm 1674, on which the site is located (NMA, August 2020). The site is located approximately 590 m from the Ou Wapad / Lanquedoc Main Road intersection, about 925 m from Lanquedoc itself and 2 km from Pniel by road. The site is therefore easily accessible to residents of Lanquedoc and Pniel (NMA, August 2020). The existing vehicular entrance gate (which would remain in place) would be the most sensible access point for local valley residents accessing (NMA, August 2020) the site. The ou wapad is an important historic link between the communities near the farm, the farm and the R45 and it is a significant tangible heritage feature of the site (Smuts & Scurr, 2020).

Heritage Context

From a heritage and landscape perspective, the east precinct has several key characteristics which would be represented in the proposed development. The area is a more exposed part of Boschendal as it is positioned largely against the slopes of the Drakenstein mountains and was traditionally used as pastorage and less intensive farmed as soil quality is poor compared to other areas of the farm. The precinct has a less transformed, wilderness character with fewer signs of agriculture and associated activities and thus lacks the density, diversity and range of heritage resources present on the western side of the farm (Smuts & Scurr, 2020). The precinct carries less of a sense of place characteristic of Boschendal and the CWCL and the site is one of the heritage/cultural features of the precinct. Other such features of the precinct include Thembaletu (as mentioned above, not affected by the proposed development), the Delta Farm Piggery (not a conservation worthy site), the Lanquedoc Cemetery (also not affected by the proposed development), and the ou wapad (a key element of the site) (Smuts & Scurr, 2020).

Conclusion

Overall, the location of the site is in an area which is not intensively farmed and more easily accessible to residents of the surrounding settlements of Lanquedoc, Pniel, Kylemore, and Johannesdal. This coupled with the nature of the proposed development which focuses on social justice and community training programmes, and would be visited by a variety of parties, accessing the site via the Lanquedoc Main Road (i.e. regular crossing over into other areas of the farm is not required), would provide for suitable development in its context and would serve re-establishment of an historic route and respectfully redevelop and revitalise a site in a way that respects the cultural landscape and social history of the site a greater context. The proposed development would be fitting of the context

Will the development proposal or the land use associated with the development proposal applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?

The proposed development has the potential to negatively impact the aquatic biodiversity of the site, however, through implementation of mitigation measures as recommended by the specialists, these impacts would be appropriately mitigated to result in a development which would be low risk to the freshwater systems on and nearby the site, and along the proposed potable pipeline routes. There would also be a low positive impact to both the freshwater systems and terrestrial biodiversity on site through the implementation of the fynbos landscaping component as indicated in the landscape plan (refer to Figure 2). There is also stream rehabilitation which must take place (and is prescribed in the freshwater impact assessment report and EMPr).

As per the natural environment, the sensitive landscape also requires careful attention and mitigation (mostly at the design stage) in order to yield positive impacts in terms of architecture, social heritage as well as impacts on the cultural landscape. The proposed development provides an opportunity for reconnection along the Ou Wapad, which was a historic route.

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

No unacceptable opportunity costs are expected as sensitive environmental areas (i.e. river and wetlands) are largely avoided with the impacts of greatest severity being linked to the construction activities proposed for the footpaths, flood management measures, service track (alternative 1 and 2 only), amphitheatre and water pipeline to the supply reservoir / tanks (alternative 1 and 2 only), however, these impacts can be mitigated against, which would reduce the significance of these impacts to, at worst, low negative, for all development alternatives. (Snaddon, 2021). The site and potable water line routes are also unsuitable for cultivation and all reasonable measures have been taken through micro-siting to avoid or minimise fragmentation and disturbance of agricultural activities (Lanz, 2021). The proposed development would also be in synergy with the surrounding area through the implementation of the proposed landscape plan and overall design principles.

What will the cumulative impacts (positive and negative) of the proposed land use associated with the development proposal and associated listed activity(ies) applied for, be?

Most impacts anticipated would be restricted to the site or immediate surrounds, or roadways for the pipeline routes, however key cumulative impacts relate to aquatic biodiversity as well as to heritage issues.

From a freshwater ecology perspective, Snaddon (2021) lists the following to be of most concern:

- Loss of open space, through catchment hardening;
- Loss of riverine or wetland habitat, as a result of encroachment into ecosystems and/or their ecological buffers;

- Deterioration in water quality, from discharge of stormwater or treated wastewater (only for alternatives 1 and 2) into natural areas.

The above-listed cumulative impacts would be able to be mitigated to Low to Medium significance with the implementation of mitigation and to low positive impacts in terms of the habitat that would be created through the implementation of the landscape plan.

From a heritage perspective, cumulative impacts in terms of architecture and landscape would be low positive for the proposed development with the implementation of the various mitigation measures that would allow for a development which is in synergy with the surrounding context. Cumulative social heritage impacts would be positive, particularly as a result of the reconnection with the Ou Wa-pad that the proposed development would initiate, and the proposed use of the site for social upliftment through the programmes of Bertha Foundation and Lalela. No heritage impacts are anticipated as part of the two proposed potable water lines.

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

The site contains existing cottages which are derelict. They are currently not generating any contribution to the farm or surrounding community. The site itself would also not be capable of providing suitable cultivation land for the farm (Lanz, 2021). Refurbishing the cottages would improve upon their current derelict state. The proposed expansion has been crafted in response to the needs of the Retreat in accommodating the transient guests attending the Retreat, the community training programmes, as well the support services needed for the Retreat to function. In this case, the Bertha Foundation has clear requirements as the people who would make use of the facility (and, in fact, already make use of the existing Retreat) are varied and range from local community organisations to international activists.

Most of the services required to support the proposed development are already in place or can be installed with low risk to the environment (i.e. the proposed conservancy tank and stormwater system which prioritises infiltration) and the water required would be supplied by the Stellenbosch Municipality and electricity supplied by Eskom respectively (noting that formal confirmation of capacity is included in Appendix E1 6)

While there can be no impacts to architectural or aesthetic significance, the preferred hybrid design strategy across site allows for the retention of one cottage in largely unchanged form, while other cottages are demolished and rebuilt on the original footprint (Smuts & Scurr, 2020). Where demolition and rebuilding are necessary to adapt the site to suit the proposed uses, these new structures remain low key insertions in the landscape to ensure the final development is modest in scale and mass (Smuts & Scurr, 2020). Landscape impacts are mitigated by the location of the development at an area already transformed through the construction of the cottages in the 1980s, and through landscaping interventions that respect the informal, untended characteristics of the surrounding vegetation (Smuts & Scurr, 2020). Further to this, the location of the site along the Ou wa-pad alignment lends the development logic, meaning and context in terms of historical settlement, growth, and development patterns (Smuts & Scurr, 2020). As such, this site is optimally suited to redevelopment, particularly where, such an intervention can serve to stitch together a landscape currently fragmented through poorly planned settlements, and generally neglected due to its limited agricultural potential (Smuts & Scurr, 2020).

They are also not located within an environmentally sensitive area and would provide for an improvement in the terrestrial ecosystem on site (noting that this point relates to the retreat accommodation site and not to the two potable water line routes) through the implementation of the fynbos rehabilitation component of the landscape plan.

There is also a stream rehabilitation plan (for stream 10) which must be implemented, which would serve to attract flora and fauna to the reaches of stream 10 alongside the site.

What will the benefits be to society in general and to the local communities?

The Applicant would benefit socially from housing a development that provides social and community upliftment.

With respect to other parties who benefit from the proposed development, the professional team and development managers benefit by exchanging their time and intellectual property for various fees. Various contractors, sub-contractors, suppliers, service providers and the staff that they employ would benefit from construction and ongoing maintenance.

The Stellenbosch Municipality would benefit from an increased rates and services base, presently related to potable water supply, but in future this may apply to sanitation as well.

The surrounding community would continue to benefit from the use of the Retreat (given that there is an existing Retreat, which would be replaced by the proposed development). An example of a group is Lalela, which provides educational arts for at-risk youth from severely marginalized communities, to spark creative thinking and awaken the entrepreneurial spirit. Through their arts curriculum and critical messaging component, Lalela aims to ignite imagination and teach children how to map and manifest their dreams and goals, launching the possibility of a different future for themselves and their communities (Sitole 2020 in Smuts & Scurr, 2020).

The Bertha grantees who include activists, storytellers, and lawyers who are working to bring about social and economic justice and human rights for all (Bertha Foundation, 2019) would also benefit through the creation of a space accessible to those parties for their causes, as well as staff and management.

There would also be some temporary employment opportunities associated with the construction phase (approximately 8 to 12 months) as well as some benefits from employment opportunities for the operational phase (i.e. cleaning, cooking, maintenance, support services, etc.) of the proposal, which would accrue to local community members and have some minor secondary economic impacts.

How the **general objectives of Integrated Environmental Management** as set out in Section 23 of the NEMA have been taken into account:

The general objectives of environmental management are to:

(a) Promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment.

This assessment has been undertaken in accordance with the National Environmental Management Act (Act 107 of 1998), as amended, as well as with the EIA Regulations, as amended. Furthermore, the development is appropriate in the context of broad spatial planning parameters, thereby providing a process and proposed project that complies with the relevant frameworks.

Environmental sensitivities on the site are largely avoided and ecological buffers observed through the proposed layout and the proposal would not compromise the surrounding cultural context (provided that appropriate mitigation measures are implemented) and it also provides an opportunity to facilitate redevelopment through stitching together a currently fragmented landscape (Smuts & Scurr, 2020). From a social perspective, the proposed development offers an opportunity to enact some degree of socially conscientized redress and means for reconnecting former residents and local stakeholders with this site, the buildings and interstitial spaces, and the surrounding resources (Smuts & Scurr, 2020). The proposed development would also not result in a loss of land that could be better use for cultivation as the soil on site, and along the proposed potable water line routes, is not suitable for cultivation (Lanz, 2021).

(b) Identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impacts, 76onscienti benefits, and promoting compliance with the principles of environmental management set out in section 2.

All potential impacts of the proposed development have been assessed in Section I of this report. The biophysical environment and social environment were considered, and appropriate mitigation measures have been recommended. The socio-economic and spatial aims have been aligned with the various goals presented in the national, provincial, and local development plans and encourage economic growth, and sustainability.

The proposed development would make use of existing buildings and a site which has been subject to much historical transformation. Lastly, minimal negative impacts have been identified, but where these are anticipated, mitigation measures have been incorporated into the EMPr (Appendix H) and they would form part of the conditions of authorisation. The stream rehabilitation plan for stream 10 must also be implemented and this is included in the EMPr, as per the recommendations from the freshwater impact assessment report.

(c) Ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them.

The effects of the various activities on the environment have been well taken into consideration by an independent botanist, freshwater ecologist, agricultural specialist, and heritage practitioner through this process and are detailed in Section I, as well as appended as Appendix G of this report. The service requirements have also been investigated by suitably qualified and experienced engineers and workable, low-risk solutions are proposed, which have also been accepted by the Stellenbosch Municipality and Eskom.

(d) Ensure adequate and appropriate opportunity for public participation in decisions that may have a significant effect on the environment.

The public engagement undertaken for this Basic Assessment process would exceed the minimum legal requirements, an approach which has been guided by the fact that there is an HIA included in this process and that there are considerations required in terms of the NWA. Comments from I&APs on the post-application Draft BAR have been included in this Final BAR. The Comments and Response Report detailing the methodology is included as Appendix F and has been updated following the public participation activities associated with the Draft BAR, as part of this Final BAR submitted to the DEA&DP for decision-making.

(e) Ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment.

The site itself has been selected for the proposed development as it is already transformed and contains derelict buildings which have potential for tourism accommodation and community use. The same applies to the proposed potable water line route to Lanquedoc, which has been devised to be located within existing roadway and/or in

the disturbed compacted area to the north-west thereof, between the black top and gum trees. The fact that the site (and potable water line routes) is also not recommended for cultivation (Lanz, 2021) is also a reason for selecting the site, as well as the fact that the environmentally sensitive stream and wetlands can be avoided or appropriately managed to keep adverse impacts low. Furthermore, an element of fynbos rehabilitation is included in the landscaping component of the proposal with a view to improving the natural condition of the site and a stream rehabilitation plan is included in the project scope for stream 10, as per recommendations from an independent freshwater ecologist. Comments received from all I&APs during the public review period for the post-application Draft BAR have been taken into consideration in this final BAR.

(f) Identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2.

The proposal has been assessed in terms of its synergy with regard to current and future development and management plans for the area and the effect that the proposed development would have on the site, surrounding environment as well as the greater community. Minimal adverse impacts are anticipated, however mitigation measures to reduce these adverse impacts have been proposed and, conversely, measures have also been put in place to enhance potential positive impacts that the development would have (e.g. a planting list has been devised with input from a botanist which suggests the best indigenous, local plants for use in the landscaping and rehabilitation proposed on site).

Furthermore, this report and associated specialist reports inform authorities of uncertainties and assumptions to ensure that a cautious approach is adopted in decision-making.

In summary, the modes of environmental management and sustainability considerations employed in the assessment of the impacts of the proposed development to-date are considered to be adequate, noting that further stakeholder engagement is still required to inform the process.

18 Describe how the **principles of environmental management** as set out in Section 2 of the NEMA have been taken into account:

The principles of environmental management as set out in Section 2 of NEMA have been considered. The principles relevant to the proposed development include the following:

- This process, as well as the proposed development places people and their needs at the forefront of its concern, and serves their physical, psychological, cultural, and social interests equitably, where relevant. This is particularly clear with the selection of the site, as it is design in such a way that it would not overpower the landscape and the location (along a historic route) and nature (serves human rights activities and local community groups) is such that it can start to provide redress and connection. It is also clear in the siting of the proposed potable water line routes, to be located in an area that would not greatly impact heritage, agriculture, freshwater or terrestrial biodiversity as it would be within existing road and/or the disturbed area adjacent thereto and on the opposite side of the road to wetlands are located;
- The proposed development is predicted to be socially, environmentally, and economically sustainable, making the best use of the land, provided the recommended mitigation measures are implemented. The proposal is also at a small scale and located beyond environmentally sensitive areas. Notwithstanding, the design would be sensitive to the surrounding environmental and cultural context of the site and responds appropriately to these constraints through limitation of mass and form as well as landscaping interventions which respond to the "wilderness" on the site of the farm it is located, the proposed pipeline routes is also devised to remain within disturbed areas/roadway;
- Application of sustainable development principles in that:
 - That the disturbance of ecosystems and loss of biological diversity has been avoided as much as possible (albeit not entirely), or, where they cannot be altogether avoided, are minimised and remedied through mitigation measures. The anticipated impacts of proposed development have been assessed from a freshwater perspective and found to be low, with a low positive impact as well, provided that all mitigation measures, including a rehabilitation plan for stream 10, are put in place. A botanist has confirmed that the proposed development can occur with no adverse impact on the local and regional ecological area. There is also an element of the proposed landscaping which would serve to rehabilitate a large (relative to the site of the site) area of the site with appropriate indigenous species;
 - That pollution and degradation of the environment are avoided. This would be avoided through implementation of the EMP, particularly during the construction phase. Furthermore, the existing septic tank system would be replaced with a conservancy tank that would be optimally sited and have sewage removed from site to achieve low environmental risk, which poses significantly less risk to the environment;
 - No disturbance of landscapes or sites that constitute the nation's cultural heritage. Smuts & Scurr (2020) has confirmed that the the York Farm cottages, by nature both of their location, form, and condition, lend themselves well to development. Provided architectural interventions are low key, and detailing is carefully executed, the redevelopment of this site offers an opportunity to activate an otherwise underutilised part of the farm (Smuts & Scurr, 2020). At this site, and within this 'East Precinct', this can be achieved without impacting agricultural productivity, significant built heritage or the highly sensitive cultural landscape that is more typical of the western portion of the farm (Smuts & Scurr, 2020). Smuts & Scurr (2021) also confirm that the proposed potable water line would not impact heritage resources.;
 - Generation of waste (particularly during the construction phase) is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise

disposed of in a responsible manner. The EMP provides guidance on the management of waste during the construction and operational phases of the proposal, which includes the requirements in this regard from Stellenbosch Municipality indicated in their confirmation of capacity letter;

- The proposal also contains measures to maximise upon energy and resource efficiency with a view to minimise the use and exploitation of non-renewable natural resources and there is consideration for solar panels on the roof which would entail renewable energy and improve efficiencies in that regard, as well as consider the latest building/construction methodologies. It also does not compromise on the agricultural resources (or potential agricultural resources) of the area as the site (and potable water pipeline routes) is not suitable for cultivation;
 - That a risk-averse and cautious approach is applied, which considers the limits of current knowledge about the consequences of decisions and actions. This is achieved through consideration of certain assumptions in the studies, which err on the side of caution; and
 - That negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied. This aspect is addressed through the mitigation measures recommended in response to anticipated negative impacts. These measures would be included as conditions of authorisation (if the DEA&DP sees it fit to authorise the proposed development) as well as within the EMP, which would have to be observed.
- This Basic Assessment process has employed a sound Environmental Management philosophy, acknowledging that all elements of the environment are linked and interrelated, and has taken into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option through the evaluation of the proposal design by independent specialists as well as through the use of a site and structures which have already created a disturbed footprint, within an area that would not be anticipated to produce high agricultural yield. The proposal and impact assessment findings have been made available for public comment to allow for stakeholder participation.
 - Environmental and social justice has been pursued in the sense that the proposed development is located beyond the limits of sensitive natural environments as far as possible with the few aspects located within wetlands or the buffer of the wetland or stream which can be managed to produce low adverse impacts and one low positive impact, as well as through including a relatively large rehabilitation component for fynbos on site, as well as a rehabilitation plan for stream 10. It is also located outside of soil zones that would be better used for crop production, as the site itself (and potable water line routes) is unsuitable for cultivation. In terms of social impacts, the proposed future use of the site to house the Bertha Foundation Retreat and Lalela children's NGO, offers an opportunity to enact some degree of socially conscientized redress at the site (Smuts & Scurr, 2020). Proposed expansion of the programs of these two organisations to include local communities, in their operational and programmatic activities, further provides a means for reconnecting former residents and local stakeholders with this site, the buildings and interstitial spaces, and the surrounding resources (Smuts & Scurr, 2020).
 - Note that the proposal (including the proposed potable water lines) is not located within an area of environmental resources (i.e. it is located beyond sensitivities and, where components are within ecologically sensitive areas, these aspects have been deemed to be appropriate and also have mitigation measures which must be implemented) or an area which could provide for cultivation, therefore the principle of equitable access to such resources does not directly apply to the proposal. However, it may be seen to respond indirectly in the sense that no environmental or agricultural resources would be taken from the public.
 - The proposed development has considered its responsibility for the environmental health and safety consequences throughout its life cycle through the assessment and implementation of design features and mitigation measures.
 - The participation of I&APs in environmental governance has been promoted throughout this process and all I&APs have been afforded the opportunity to develop an understanding of the project through an opportunity to review and comment on this report, as well as the pre-application Draft BAR, noting that the detailed responses contained within the Comments and Response report are included in Appendix F.
 - The decision taken by the authorities would be based on the contents of this final BAR, which include all comments received from I&APs, which serve to ensure that the interests, needs and values of I&APs are considered. The social, economic, and environmental impacts of activities, including disadvantages and benefits, have been considered, assessed, and evaluated, and the proposal and findings have now been made available for public review.
 - Given the scale of the proposed development, community empowerment and education are not achievable at a large scale, however there would be nominal job creation, which would benefit some community members and community organisations/ groups would make use of the proposed development.
 - The social, economic, and environmental impacts of the proposal have been considered and carefully weighed up, not only in the Basic Assessment process, but also in the design of the proposed development in order to keep it outside of any sensitive areas and to rehabilitate and develop in a manner which responds appropriately to the natural, rural context and the memory of the site.
 - The principle of transparency and access to information is observed in this Basic Assessment process with the publication and distribution of all information required by I&APs to provide informed comment.
 - The consideration of the fact that the environment is held in public trust for people has been considered and the principle applied in the proposal through the avoidance of sensitive environmental areas through development on a transformed site and of existing buildings/building remnants, as well as locating the proposed potable water line routes in existing roadway and/or in disturbed bare earth alongside it

	<ul style="list-style-type: none"> • The “polluter pays” principal will be implemented through the EMPr for all relevant phases of the proposed development. • Sensitive ecosystems have been avoided which is evident through the fact that no such systems occur on the site or in the proposed potable water line route. 	
	<p>Conclusion</p> <p>Overall, all development must, in terms of Section 24 of the Constitution, be ecologically sustainable, and economic and social development must be justifiable. The freshwater impact assessment has considered the impacts of the proposed development on freshwater systems on and near the site and found the impacts to be acceptable (i.e. low to zero), with mitigation. Similarly, a botanist also considered the potential sensitivity of the site and potable water line routes from a terrestrial biodiversity (which is low) perspective and a recommendation for planting has been made and implemented in the landscape plan. An agricultural specialist has also confirmed that the site and potable water line routes are not suitable for cultivation from an agricultural perspective and that the proposed development is acceptable in this regard. General design and operation measure are also included in the EMPr to ensure minimal impacts on fauna, although the site and potable water line routes are of a low sensitivity in that regard. The mitigation measures are extremely important and must be implemented. That is why they are included as specifications in the EMPr and are strongly recommended as conditions of authorisation in this Basic Assessment Report. The proposed development is respectful of the historical and cultural setting as well as the memory of the site itself and the benefits of the proposed development would accrue to a range of parties, noting that the proposed pipeline routes would have no impact on heritage resources. Assessment of the potential impacts has been done in a systematic and logical manner and all findings have been made available to the public in terms of Regulation 41 of the EIA Regulations, 2014 (as amended) to ensure a transparent and open process. Public comments from <u>both</u> public review <u>periods</u> are addressed in this <u>Final</u> report through provision of clarity on certain aspects, <u>confirming servicing, and inclusions/minor changes</u> of mitigation and <u>maintenance</u> measures in the EMPr.</p>	

SECTION F: PUBLIC PARTICIPATION

The Public Participation Process (“PPP”) must fulfil the requirements as outlined in the NEMA EIA Regulations and must be attached as Appendix F. Please note that If the NEM: WA and/or the NEM: AQA is applicable to the proposed development, an advertisement must be placed in at least two newspapers.

1. Exclusively for linear activities: Indicate what PPP was agreed to by the competent authority. Include proof of this agreement in Appendix E22.

While there are linear components to the development this is not considered applicable in this instance.

2. Confirm that the PPP as indicated in the application form has been complied with. All the PPP must be included in Appendix F.

All evidence of PPP is included in Appendix F. This includes the evidence of distribution of the post-application Draft Basic Assessment Report for public comment and the full I&AP database with contact information.

The PPP was agreed to by the DEA&DP. The proposed Public Participation Plan and the DEA&DP’s approval, dated 13 October 2020, are included in Appendix F.

The PPP exceeded the minimum legislative requirements prescribed in regulation 41 of the EIA Regulations, 2014 (as amended), but aligned with the SOP between DEA&DP and HWC of December 2015, and included the following activities (noting that no alternative sites have been considered in this impact assessment process due to the prevalence of existing structures):

- A pre-application draft BAR was circulated for public comment for a period of 35 days from 6 November 2020 to 10 December 2020 with the notification (in the form of a letter) to the preliminary I&AP database being done by email and regular post (for those I&APs who do not have email addresses)
- Hard copies of the documentation, as well as the executive summary, were made available at the Pniel Public Library, the Pniel Museum and the Stellenbosch Public Library and the availability at these locations was advertised to the community through placement of notices in this regard at several key locations throughout the community;
- The executive summary and a comment box were also left at the Pniel Museum and Pniel Public Library for I&APs which cannot access the internet and wish to submit their written comments;
- The pre-application Draft BAR was available for download from Chand’s website, the English and Afrikaans Executive Summaries were also made available for separate download (to limit data use) from Chand’s website;
- With respect to the written notice to the owners and persons in control of the site, note that the Applicant is the landowner;
- Note that there are no legitimate “occupiers” on the site, but users of the site would have been notified through the workers’ forum which is on the I&AP database in case any of the workers of the farm would like to review and comment on the documentation;
- Written notice to the municipal councillor of the ward in which the site is located was done and a site meeting was held with the Ward Councillor of Lanquedoc (noting that the Ward Councillor for Pniel was also invited, but did not attend) on 1 February 2021 (refer to Appendix F);

- Written notice to the municipality (Local and District Municipality) which has jurisdiction in the area was done as part of the notification above;
- Written notice to any organ of state having jurisdiction in respect of any aspect of the activity was done as part of the written notification of the availability of the pre-application draft BAR;
- Pre-application meetings with DWS on 2 December 2021 and 16 February 2021.
- A Focus Group Meeting with key community representatives was held on 22 February 2021.

PPP activities associated with the post-application Draft BAR included the following:

- The I&AP database has been updated to include all registrations;
- Public review period for the post-application Draft BAR, was underway for a period of 30 days from 23 November 2021 to 13 January 2022;
- Notification of the availability of the post-application Draft BAR (in the form of a letter) was provided to registered I&APs via email and regular post (for those I&APs who do not have email addresses);
- Hard copies of the documentation were made available at the Pniel Public Library and the Protea Bookstore in Stellenbosch;
- The executive summary (in English & Afrikaans) and a comment box were left at the Pniel Public Library for I&APs who cannot access the internet;
- The post-application Draft BAR was made available for download from Chand's website, and the executive summaries were also made available for download as separate documents (to limit data requirements for I&APs who do not have access to much data).
- Advertisements of the availability of the post-application draft BAR were placed in the Cape Times and the Eikestad Nuus, noting the proposed development and Basic Assessment and Heritage Impact Assessment processes (note that there is no need to reference the NWA as a General Authorisation has been confirmed by the DWS and this requires no public participation);
- Site notices providing the information required in terms of Regulations 41 (3) and (4) of the EIA Regulations, 2014 (as amended) were placed on the site boundary, at the main entrance to the farm, as well as at the approximate mid- and end-points of the proposed potable water line routes;
- With respect to the written notice to the owners and persons in control of the site, note that the Applicant is the landowner of the site and the Stellenbosch Municipality owns the road for the line (and Stellenbosch Municipality has provided power of attorney for approval processes to the Applicant);
- Note that there are no legitimate "occupiers" on the site, but users of the site would be able to see the site notices;
- Written notice to the municipal councillor of the ward in which the site is located was done;
- Written notice to the municipality (Local and District Municipality) which has jurisdiction in the area was done as part of the notification and advertisement above; and
- Written notice to any organ of state having jurisdiction in respect of any aspect of the activity has been done as part of the written notification of the availability of this post-application draft BAR.

Evidence of the above activities is included in Appendix F.

The Draft BAR has been updated with I&AP comments/issues raised and this Final BAR submitted to the DEA&DP for decision-making. Once the DEA&DP has issued their decision (a statutory timeframe of 107 days is allowed for this), registered I&APs will receive notification of the final decision on the application from Chand.

3. Confirm which of the State Departments and Organs of State indicated in the Notice of Intent/application form were consulted with.

The following State Departments as indicated in the NOI were sent a notification of the availability of the pre-application Draft BAR for review:

- Stellenbosch Municipality: Environmental Management
- CapeNature
- Department of Water & Sanitation
- Heritage Western Cape

In addition to the above, the following State Departments were sent notification of the availability of the pre-application Draft BAR as well as the post-application Draft BAR and associated MMP for review:

- Department of Environmental Affairs and Development Planning: Planning
- Department of Environmental Affairs and Development Planning: Pollution Management
- Department of Environmental Affairs and Development Planning: Waste Management
- Department of Environmental Affairs and Development Planning: Biodiversity
- Department of Environmental Affairs and Development Planning: Air Quality
- National Department of Environment, forestry, and fisheries (DEFF): Biodiversity and Conservation
- CapeNature
- SANParks
- National Department of Transport and Public Works
- Department of Agriculture, Land Reform and Rural Development
- District Municipality (Cape Winelands District Municipality)

Further to the above, the following additional parties were notified of the availability of the post-application draft BAR and associated MMP for public review:

- Western Cape Department of Agriculture, Directorate: Sustainable Resource Management
- Irrigation Board / Water Users Association (Berg River Irrigation Board)

4. If any of the State Departments and Organs of State were not consulted, indicate which and why.

- National Department of Environment, forestry, and fisheries (DEFF): Oceans and Coasts- the proposed development is not located along a coastline and, therefore, comment in this regard is not required.
- Western Cape Government: Department of Human Settlements – the proposed development is not a human settlements project and so comment in this regard is not required.
- Western Cape Government: Department of Health- the proposed development is not a health project and so comment in this regard is not required.
- DEA&DP: Coastal Management- - the proposed development is not located along a coastline and, therefore, comment in this regard is not required.
- Regional Land Claims Commission: The project does not involve a land claim.

5. If any of the State Departments and Organs of State did not respond, indicate which.

Comments were not received from the following State Departments despite notification of the availability of the Draft BAR and follow-up notifications:

- Stellenbosch Municipality: Environmental Management
- Department of Environmental Affairs and Development Planning: Biodiversity
- National Department of forestry fisheries and environment (DFFE): Biodiversity and Conservation
- SANParks
- Department of Agriculture, Land Reform and Rural Development.

HWC provided a response to the NID submitted which advised on the contents and nature of the HIA for the new retreat site. The response to the NID is included in Appendix E1. Comment on the NID submitted for the Lanquedoc pipeline is included in Appendix F and concludes that no further studies are required for the pipeline specifically. The HWC has also provided an interim comment on the HIA (refer to Appendix E1) and supports the findings of the HIA and recommendations made by the heritage practitioner. HWC have indicated that they will only provide a final comment on the final HIA which was submitted to HWC in parallel to this final BAR to DEA: DP. The final comment from HWC will be provided to the DEA: DP as soon as received in order to be taken into account into decision-making. It is highlighted that there have been no significant changes to the HIA since the interim comment was received from HWC thus a similar outcome is anticipated.

A pre-application submission was made to the DWS via their online eWULAAS system (refer to Appendix M for evidence thereof) and two pre-application meetings were held (refer to Appendix F for the minutes thereof). Following this, confirmation from DWS, dated 18 May 2021, was received indicating that the proposed development can be authorised under a General Authorisation (refer to Appendix M for evidence). The DWS also provided comment on the draft BAR (refer to Appendix E3) An application has since been submitted and acknowledged by DWS (refer to Appendix M).

CapeNature, DEA&DP: Development Management, and the Western Cape Department of Transport and Public works provided comment on the pre-application draft BAR.

Comments were also received from the Department of Environmental Affairs and Development Planning: Development Management, Air Quality, Pollution Management and Waste Management Directorates in response to the post-application Draft BAR. CapeNature commented that their previous comment still stands and expressed their support for the rehabilitation stream 10.

6. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated into the development proposal.

A summary of issues raised and how they have been addressed in the proposal and/or process is provided in Table 4.

Table 4: Summary of Issues Raised and how they have been addressed

No.	Category	Issue	How issue has been addressed
1.1	Terrestrial Biodiversity and vegetation	Agreement with specialist findings with regard to the transformed nature of the site, noting that aquatic systems are the only biodiversity issue on the site.	A botanist has carried out a study and produced a Terrestrial Biodiversity Compliance Statement which is included in Appendix G(c) of the BAR. It confirms there is no significant flora on site or along the proposed potable water line route. CapeNature's agreement with the findings of the Terrestrial Biodiversity Compliance Statement is noted in this report.

2.1	Aquatic Biodiversity	Support for findings of the freshwater assessment.	The findings of the freshwater assessment have been updated following the pre-application draft Basic Assessment Report. CapeNature's agreement with the findings of the Freshwater Assessment is noted in this report.
2.2		Importance of adhering to freshwater buffer areas.	The freshwater buffer areas and mitigation measures are incorporated into the EMPr as measures which must be implemented as a condition of Environmental Authorisation (if granted).
2.3		No objection to proposed development, provided mitigation measures are implemented.	Mitigation measures provided to reduce impacts to acceptable levels are incorporated into the EMPr, which must be implemented as a condition of Environmental Authorisation (if granted).
2.4		An MMP for future maintenance work within a watercourse must be compiled and submitted with the final BAR (note this is an issue raised by the DEA&DP and DWS)	An MMP has been included in the EMPr (this is an update to the EMPr following the circulation of the pre-application draft Basic Assessment Report for public review.
2.5		Query regarding the location of the site relative to the confluence with the Berg River.	It has been confirmed (in a meeting, and in this BAR) that the site is located below the confluence and so General Limits should apply.
2.6		Mapping of the flood line for Stream 10 is required.	This has been conducted and a flood line report is included in Appendix G(i) of the BAR. The confirmation of the flood line has also led to the inclusion of flood management measures and a stream rehabilitation plan in the design and scope of the proposed development. These are available in the site plans in Appendix B1(a) of the BAR and the freshwater impact assessment report in Appendix G(e) of the BAR. The rehabilitation plan is also captured in the EMPr and MMP in Appendix H of the BAR.
2.7		Query regarding original purpose of the berms alongside the stream.	This not known for certain but has been clarified in the site description in this report.
		Risks associated with the berms and the erosion of the composite material must be considered and detail of the proposed berms must be provided (i.e., height, slope, planting, extent, replacement vs new, anticipated traffic, whether they are necessary).	These are considered and addressed in the freshwater assessment report, stream rehabilitation plan and flood management measures proposed.
2.8		Risk assessment must consider water velocity and downstream impacts.	These aspects are considered and included in an updated Risk Assessment Matrix appended to the Freshwater Impact Assessment report in Appendix G(e) of the BAR.
2.9		Rehabilitation must cover stream and wetland.	These aspects are considered and included in the rehabilitation plan in the Freshwater Impact Assessment report in Appendix G(e) of the BAR.
2.10	Updated Risk Assessment Matrix is required.	The initial Risk Assessment Matrix (that was appended to the pre-application draft Basic Assessment Report) has been updated with the flood management measures and rehabilitation considerations and is appended to the Freshwater Impact Assessment Report in Appendix G(e) of the BAR.	

2.11		Support for MMP from DEA: DP Pollution & Chemicals Management Directorate.	Noted, noting that there has been reshuffling of Method Statements between the MMP and EMPr but that no new information has been included	
3.1	Heritage/ Design	Draft BAR will not be reviewed by HWC, as interim comment can only be provided after PP.	The post-application draft Basic Assessment Report and associated updated HIA have been provided to HWC for comment as part of the <u>previous</u> public review period. <u>No comment was however received. It is understood that HWC will only comment on the final HIA with PP included.</u>	
3.2		Support by one registered conservation body (i.e., the Stellenbosch Interest Group) for the findings of the HIA and that the findings of the HIA be endorsed as fulfilling the terms of Section 38 (3) of the NHRA.	The support from the Stellenbosch Interest Group for the HIA and associated findings is noted in the Basic Assessment Report. Furthermore, the requirement from the HIA are included in the EMPr (refer to Appendix H of the BAR) which must be adhered to as part of the conditions of Environmental Authorisation (if granted).	
3.3		Support for the hybrid strategy of development such that reception/community centre is retained in largely unaltered form and other cottages are adapted.	The support from the Stellenbosch Interest Group for the proposed hybrid strategy for development is noted in the Basic Assessment Report.	
3.4		Low key detailing as per the designs presented is supported.	The support from the Stellenbosch Interest Group for the low-key detailing as per the proposed design is noted in the Basic Assessment Report.	
3.5		Query whether the site is a UNESCO heritage site.	The heritage baseline description of the site and context in the Basic Assessment Report includes clarification regarding the heritage status, noting that the CWCL is not yet recognised as a WHS, but the Heritage Impact Assessment recommendations align as if it were.	
3.6		Query regarding whether the HIA takes all grading requirements into account.	The assessment methodology for the HIA is included in the HIA Report and clarified in the Basic Assessment Report.	
3.7		Mechanisms to embed the memory of the site into the proposed development such as through the use of plaques and old photographs to be displayed throughout the development.	These are noted and included as design suggestions/considerations in the EMPr.	
3.9		Stories of past experiences of the site and farm were provided by one I&AP.	These are noted and described in the BAR.	
3.10			<u>No objection to the proposal by the Drakenstein Heritage Foundation</u>	<u>Noted.</u>
4.1		Services	Confirmation of services proposed must be provided and confirmation of available capacity from the service provider must also be provided.	Confirmation of the preferred servicing approach is proposed and assessed in the Basic Assessment Report, noting that confirmation of capacity for provision of water and electricity has been provided and appended to the Basic Assessment Report (refer to Appendix E16 of the BAR).
4.2	DWS comment must include input with respect to the use of treated effluent as irrigation water on site.		This request from the DEA&DP is noted and engagement with DWS has been included in the Basic Assessment Report, however the use of treated effluent for irrigation is assessed but is not within the preferred alternative.	
4.3	Water quality for treated effluent.		The system that is considered in Alternatives 1 and 2 (which are not preferred and has	

			been scoped out) has been used on other sites and data is available for those, but the expectation is that water would be treated to General Limits.
4.4		DEA: DP Waste Management asked for clarity on how refuse generated during the operational phase would be handled.	Clarity has been provided in the final BAR and C&R Report and confirmation of capacity by private service provider to collect and dispose of the non-recyclable waste at the Vissershok landfill provided (refer to Appendix E16)
4.5		Need to obtain service capacity letters from private service providers.	Capacity letters from private service providers who will remove waste and sewage have been obtained and included in the final BAR (refer to Appendix E16 of the BAR)
4.6		An updated comment with respect to the progress of the required upgrades at the Pniel WWTW must be provided.	An updated comment has been included in Appendix E16 of the BAR. The estimated completion date for the Pniel WWTW upgrade project is June 2022.
5.1	Landscaping	Avoidance of orthogonal patterns and other landscaping recommendations as per the HIA are supported and a note has been made that HWC should also support this.	The support from the Stellenbosch Interest Group for patterns and other landscaping recommendations is noted in the Basic Assessment Report.
5.2		Source of water for landscaping.	The source of water for the landscaping would be a combination of municipal supply, rainfall, and stormwater run-off (infiltration)
5.3		Note that irrigation of landscaping and/or road verges with treated effluent water would trigger a WULA.	This is noted and is not the intention of the preferred alternative.
5.4		Making use of indigenous plants in the landscaping.	The proposed landscape plan contains some indigenous fynbos areas.
6.1	Stakeholder/ Public engagement	One I&AP stated that no consultation with members of communities has taken place.	The Comments and Responses Report includes details of public participation carried out as part of this Basic Assessment process, noting that full evidence of the current public review period and details of I&APs will be appended to the final Basic Assessment Report to be submitted to the DEA&DP for decision-making.
6.2		One I&AP highlighted that communication must occur through community development forums, as these are the official community communication structures.	This has been noted and the various community development forums are on the I&AP database and have been notified of the availability of this report for comment.
6.3		Proof of compliance with the Public Participation Plan and Regulation 41 of the EIA Regulations, 2014 must be included in the BAR.	The Comments and Responses Report includes details of public participation carried out as part of this Basic Assessment process, noting that full evidence of the current public review period and details of I&APs will be appended to the final Basic Assessment Report to be submitted to the DEA&DP for decision-making.
7.1	Construction Management	Measures have been suggested to safeguard potential archaeological finds during construction.	Measures to identify and safeguard potential archaeological finds during construction are included in the EMPr (refer to Appendix H of the BAR).
7.2		Query regarding duration of the construction phase.	The approximate anticipated duration of the construction phase has been clarified in the Basic Assessment Report.
7.3		Recommend and motivate the frequency at which environmental audits must be conducted by an independent person.	Auditing and required frequency has been stipulated in the EMPr (refer to Appendix H of the BAR).

7.4		The need to protect topsoil during construction.	Measures for protection and handling of topsoil are included in the EMPr.
7.5		Note that there are snakes in the area, such as the Cape Cobra and Puff Adder.	Measures to deal with interactions with/ finding of local fauna are included in the EMPr, including that related to snakes.
7.6		<u>DEA: DP Air Quality provided dust, noise and emissions control measures for the construction and operational phases and highlighted the need to adhere to relevant legislation.</u>	<u>The EMPr includes measures to control these aspects. Reference to specified regulations has been included in the EMPr as per the comment.</u>
7.7		<u>Need to engage with the local Air Quality Officer from Stellenbosch Municipality.</u>	<u>Comment was obtained from the relevant official and incorporated into the final BAR.</u>
8.1	Roads/ Transport/Traffic	Support from Western Cape Department of Transport and Public Works.	The support from the Western Cape Department of Transport and Public Works is noted in the Basic Assessment Report.
9.1	General Issues	One I&AP stated they cannot support the proposal until more discussions occur between communities and developers/owners.	This is noted and a public participation process has been undertaken for this Basic Assessment process, noting that this also included a Focus Group Meeting to which local community development forums were invited.
9.2		General impact on environment and communities should be considered and discussed.	The impacts on the environment (including socio-economic impacts) are unpacked in the Basic Assessment Report, which has been made available for public review and comment.
9.3		How is the environment managed and how can I&APs make sure that what is promised is how the project is developed and managed?	Clarity on how the mitigation measures and project description is applied has been provided in the Basic Assessment Report, and this is primarily achieved through implementation of the EMPr.
9.4		Query regarding what is considered a "sensitive" environment.	Clarity on what "sensitive" environments have been provided in the Basic Assessment Report.
10.1	Basic Assessment Process and Administrative Matters	Consider including Listed Activity 12 of Listing Notice 1 in the application for Environmental Authorisation.	This is included in the Application Form and Basic Assessment Report.
10.2		Provide confirmation of required process from DWS and if it is a WULA, proof of application and WULA information must be provided in the BAR.	Evidence of engagement with DWS has been included in the Basic Assessment Report, and the advice provided by the DWS has also been noted in the Basic Assessment Report. Note that they have confirmed a General Authorisation applies, hence there is no WULA documentation to be included in the Basic Assessment Report as a WULA is not necessary.
10.3		Environmental auditing	Auditing and required frequency have been stipulated in the EMPr (refer to Appendix H).
10.4		Comment from, but not limited to, the following Organs of State must be obtained and included in the BAR: <ul style="list-style-type: none"> • Department of Agriculture • CapeNature • Heritage Western Cape • Department of Transport and Public Works • DEA&DP: Pollution and Chemical Management • DEA&DP: Waste Management 	<u>Comments from all these parties mentioned are included in the BAR, apart from the Department of Agriculture.</u> <u>It is assumed, as per Regulation 3 (4) of the EIA Regulations, 2014 (as amended) that they have no comment. It should be noted, however, that issues pertaining to agricultural aspects have been considered through the agricultural compliance statement, so issues related to the mandate of this Department have not been left unaddressed in this process.</u> <u>Comment from HWC on the two NIDs have been included as well as an interim comment on the HIA. A final comment will</u>

			only be available following the submission of the final HIA which has been done in parallel to this final BAR submission. The final comment will be provided to DEA&DP as soon as received and before the decision-making period of 107 days lapses.
10.5		Original signed and dated Applicant declaration must be provided with the BAR for decision-making.	This has been included final Basic Assessment Report submitted to the DEA&DP for decision-making.
10.6		Original signed and dated Applicant declaration must be provided with the BAR for decision-making.	This has been included in the final Basic Assessment Report submitted to the DEA&DP for decision-making.
10.7		Information as required by Appendices 1 & 7 of the EIA Regulations, 2014 (as amended) must be provided in the BAR.	All information in this regard is included in the Basic Assessment Report.
10.8		It is an offence to commence with a listed activity without Environmental Authorisation from the Competent Authority.	This is noted by the Applicant and in the Basic Assessment Report.
10.9		If any single component/aspect of the proposed development triggers a WULA, then the whole process would be a WULA.	This is noted, however would not apply to the proposed development, given that the DWS has now confirmed that the proposed development can be authorised under a General Authorisation.
10.10		The need to include an SSV report in the BAR for comment.	An SSV report has been included in the final BAR and I&APs notified of the availability thereof for comment during the public review period of the post-application Draft BAR (refer to the Comments & Responses report included in Appendix F for proof)
10.11		Details on the preferred Alternative and how it relates to Listed Activities 12, 19 & 48 of LN 1 are required.	This has been clarified in the final BAR.
10.12		The SDP must show ecological buffers/no-go zones.	The preferred service layout drawings have been updated to include the freshwater ecological buffer zones. No-Go maps have also been provided and included in the BAR and EMPr. The SDP drawing could not be updated due to a change in architects and corruption of CAD files. The site layout is included in the preferred services layout.
10.13		The MMP must be updated to reflect maintenance related work only (not construction work related to new or expanded structures or infrastructure beyond the existing footprint).	Noted and completed. Method statements related to the construction of new or expanded infrastructure have been removed from the MMP and included in the EMPr.
10.14		Proof of compliance with all the public participation steps undertaken and a comprehensive Comments & Responses with original comments and responses to comments must be provided.	This has been included in the final BAR.
11.1	Broader Issues	Tension within communities against Boschendal, related to lack of trust from communities for Boschendal.	This is noted and it has been communicated in the Focus Group Meeting of 22 February 2021 that there are staff within the Bertha Foundation who will continue to engage and build a relationship with the local community.
11.2		Perception of Boschendal, the Bertha Foundation and Community Advice Office in	An explanation of the Bertha Foundation, Boschendal and Community Advice Office

		terms of their role in the valley, as perceived by the local communities.	in terms of clarification of their role has been included in the Basic Assessment Report.
11.3		Access to the farm in general for local communities and how it has changed since the past. Access for the communities to the mountains within Boschendal is now restricted.	This is noted as a broader issue, and not directly linked to the proposed development.
11.4		In future DWS would ask for a Maintenance Management Plan for the entire farm, but this does not need to be developed in detail for the New Retreat project.	This is noted by Boschendal.
11.5		<u>Objection to the proposal based on mistrust of the Bertha Foundation and the Community Advice Office (CAO) who according to one commentator are causing divisions among local community leaders and supporting back yard dwellers in Lanquedoc instead of property-owners.</u>	<u>An explanation of the Bertha Foundation, Boschendal and Community Advice Office in terms of clarification of their role has been included in the Basic Assessment Report. The Bertha Foundation supports the CAO through grant funding but do not make any strategic or managerial decisions. The CAO is currently supporting a group of people who were evicted from the trust land.</u>
11.6		<u>Objection to the proposal due to employment opportunities which would not filter down to the Lanquedoc community.</u>	<u>The requirement to make use of local labour from Lanquedoc (and other surrounding communites) for the bulk of the unskilled labour is included in the EMPr for the operational and construction phase.</u>

Previous Stakeholder Engagement (not part of the Basic Assessment Process)

For context, the Bertha Foundation (who will be leasing the land from the Applicant and who would construct and operate the proposed development) undertook broad-based engagement with stakeholders to inform the design, programming, and use of space etc. of the proposed development (refer also to Figure 16 for an organogram explaining the position/role of the Bertha Foundation relative to the Applicant). These stakeholders included the parties who generally make use of the existing Retreat and extended to the surrounding communities of Lanquedoc, Pniel and Kylemore (NMA, August 2020). This engagement was not part of the statutory process but does provide context as it demonstrates that the proposed design has been considered from a user and logistics perspective in terms of the guest as well as the operator needs. The team at the Bertha Foundation will continue to engage with these parties and, in synergy with the Foundation's values, the purpose would be to empower interested and affected parties (especially those with less power and diverse perspectives) to make or contribute to decisions for the proposed development (NMA, August 2020). These aspects are related to detail design, so the engagement between the Bertha Foundation and their stakeholders/ users would not affect the proposed development layout and plan as indicated in Appendix B1(a)(b). Engagement by the Bertha Foundation to-date has occurred in two phases (NMA, August 2020).

The first phase was conducted in February and March of 2020 in order to workshop design and functionality in terms of the space of the proposed development with a view to creating a direct link between the intended use and design of the space and to better understand how the space could respond to the needs of the stakeholders(NMA, August 2020). The parties consulted in this regard are listed in NMA (August 2020) and include the following:

- Bertha Grantees: Users of the existing Bertha Retreat who gave insight into aspects of the existing Retreat which work and those which do not;
- Bertha Staff: Staff members were able to provide insight into operational requirements; and
- Community Members: Potential users of the proposed development.

The engagement was carried out by the Bertha Team first identifying the respondents and informing them of the purpose of the Bertha Foundation stakeholder engagement process (NMA, August 2020). A Questionnaire was devised by the Bertha Foundation for each respondent Group and were completed through interviews with respondents which were conducted via email, phone call, WhatsApp and voice note depending on the respondent and their preferred means of interviewing (NMA, August 2020). The responses were consolidated by the Bertha Foundation and shared with the professional team and architects for the proposed development in order to incorporate them into the design.

The second phase of engagement was with the former residents of the site who were employed by Boschendal (Amfarms) and Rhodes Food Group and who lived in the former York Cottages (i.e. the derelict cottages on the site) from 1980, when they were constructed, until 2003, when they were removed from the farm by Amfarms to the newly-built Reconstruction and Development Programme (RDP) houses in New Lanquedoc as part of the sale of the Boschendal Estate (NMA, August 2020). In terms of use of the site, former residents planted flowers in front of their homes while growing food gardens in the back and most had chickens, with some residents even keeping rabbits (NMA, August 2020). The kitchens had fire/coal stoves which served the dual purpose of cooking and heating their homes (NMA, August 2020). They visited other extended family members on the site, while children played in the open area between the homes, and

the open area in the centre of the site was used as a gathering space. The feedback provided to the Bertha Foundation indicated that the residents' fondest memory is that the space belonged to the people that lived there, everyone who lived there felt free, there was a good sense of community and togetherness, and kids were kids and were free" and that they most miss "picking flowers on the farm, swimming in the dam and the river, the peace and quiet is also hugely missed" (NMA, August 2020). In terms of their engagement with the farm, the residents swam in the farm dams east of the site or the Dwars River to the west,

These former residents who were interviewed by the Bertha Foundation are also included in the preliminary I&AP database (refer to Appendix F) and have received notifications pertaining to this Basic Assessment process.

Note:

A register of all the I&AP's notified, including the Organs of State, and all the registered I&APs must be included in Appendix F. The register must be maintained and made available to any person requesting access to the register in writing.

The EAP must notify I&AP's that all information submitted by I&AP's becomes public information.

Your attention is drawn to Regulation 40 (3) of the NEMA EIA Regulations which states that "Potential or registered interested and affected parties, including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in subregulation (1) prior to submission of an application but **must** be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority."

All the comments received from I&APs on the pre -application BAR (if applicable and the draft BAR must be recorded, responded to, and included in the Comments and Responses Report and must be included in Appendix F.

All information obtained during the PPP (the minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded) and must be included in Appendix F.

Please note that proof of the PPP conducted must be included in Appendix F. In terms of the required "proof" the following is required:

- a site map showing where the site notice was displayed, dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;
- in terms of the written notices given, a copy of the written notice sent, as well as:
 - if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);
 - if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);
 - if a facsimile was sent, a copy of the facsimile Report;
 - if an electronic mail was sent, a copy of the electronic mail sent; and
 - if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and
- a copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).

SECTION G: DESCRIPTION OF THE RECEIVING ENVIRONMENT

All specialist studies must be attached as Appendix G.

1. Groundwater

1.1.	Was a specialist study conducted?	YES	NO
1.2.	Provide the name and or company who conducted the specialist study.	Although no groundwater study specifically was done, a freshwater impact assessment by Kate Snaddon of Freshwater Consulting Group to establish surface water conditions of the site.	
1.3.	Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.		

Data from Cape Farm Mapper with regard to aquifers beneath the site indicates that the aquifer is minor with a moderate vulnerability and medium to high susceptibility. The aquifer is apparently fractured and the average depth to groundwater in that vicinity is 7.33 mbgl (metres below ground level).

Data from Cape Farm Mapper indicates that the underlying geology of the site comprises colluvial and alluvial sand and gravel on granite of the Stellenbosch Pluton, Cape Granite Suite (Cape Farm Mapper, accessed 26/03/2020). The soil class is indicated as "rocky areas" and the description is "rock with limited soils" (Cape Farm Mapper, accessed 26/03/2020). Clay content is anticipated to be less than 15% with moderate erodibility (Cape Farm Mapper, accessed 26/03/2020).

1.4.	Indicate the depth of groundwater and explain how the depth of groundwater and type of aquifer (if present) has influenced your proposed development.
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Given the presence of wetlands on site, the water table of the site is high at certain times of the year. The overall design of the proposed development aims to limit the expansion of the existing structures as much as possible and utilised permeable landscaping solutions.

The stormwater management plan has also considered surface water flow on site and anticipated stormwater run-off has been calculated and accommodated in the proposed development either through dissipation into the ground or the swale below the parking area.

There are also measures contained in the EMPr which provide specifications for construction (extracted from Snaddon, 2021) as well as de-watering measures where needed. Engagement with the DWS would also clarify the triggers in terms of the NWA and these would be addressed through the licensing/ registration process.

2. Surface water

2.1.	Was a specialist study conducted?	YES	NO
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2.2.	Provide the name and/or company who conducted the specialist study.
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Ms. Kate Snaddon of Freshwater Consulting Group cc, referenced as "Snaddon, 2021" in the body of this Basic Assessment Report – refer to Appendix G(e) for the full report.

Mr. Mark Obree of Mark Obree Consulting conducted a flood line study for stream 10 and the assessment is referenced as "Obree, 2021" in this report.

2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.
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The surface water located on the site forms a critical design informant for the proposed development. These have been addressed in the proposed development and assessed in order to ensure the impacts, after mitigation, provide low risk to the affected freshwater system (Snaddon, 2021). This has been achieved through design as well as management measures as per the following:

- 1) Avoidance of areas/watercourses as much as possible and where structures/landscaping would be located therein, it would be done in a sensitive manner;
- 2) Implementation of construction and operational buffers to development from the watercourses to be avoided;
- 3) Assessment of sewage package plant location and layout alternatives, as well as potable water and a lower risk sanitation alternatives thereby establishing a preferred alternative which poses the least risk to the affected freshwater systems;
- 4) Consideration of the stormwater management system, including location of the proposed and vegetated, swale by a freshwater ecologist and inclusion of design measures into the scope of the stormwater management plan, as well as specifications in the EMPr;
- 5) Institution of requirements for mitigation of construction-related activities through inclusion as specifications the EMPr;
- 6) Institution of requirements for mitigation of operation-related activities through inclusion as specifications in the EMPr; and
- 7) Inclusion of a stream rehabilitation plan in the freshwater report and the EMPr (which also includes a Maintenance Management Plan for the stream- linked to the rehabilitation measures in the freshwater report)

The development of the New Retreat (main development site) would potentially have an impact on three inland aquatic ecosystems on/near the site – a seasonal stream, Stream 10, which flows into the Dwars River, the Dwars River valley-bottom wetland, and a small hillslope seep wetland adjacent to the property (Snaddon, 2021). Two Ecological Corridors pass through the New Retreat site, one along Stream 10 and the other following the Dwars River (Snaddon, 2021). These have been delineated and ecological buffers established (Snaddon, 2021). Refer to the watercourses and ecological buffers for the site in Figure 25, Figure 26, Figure 27, and Figure 28.

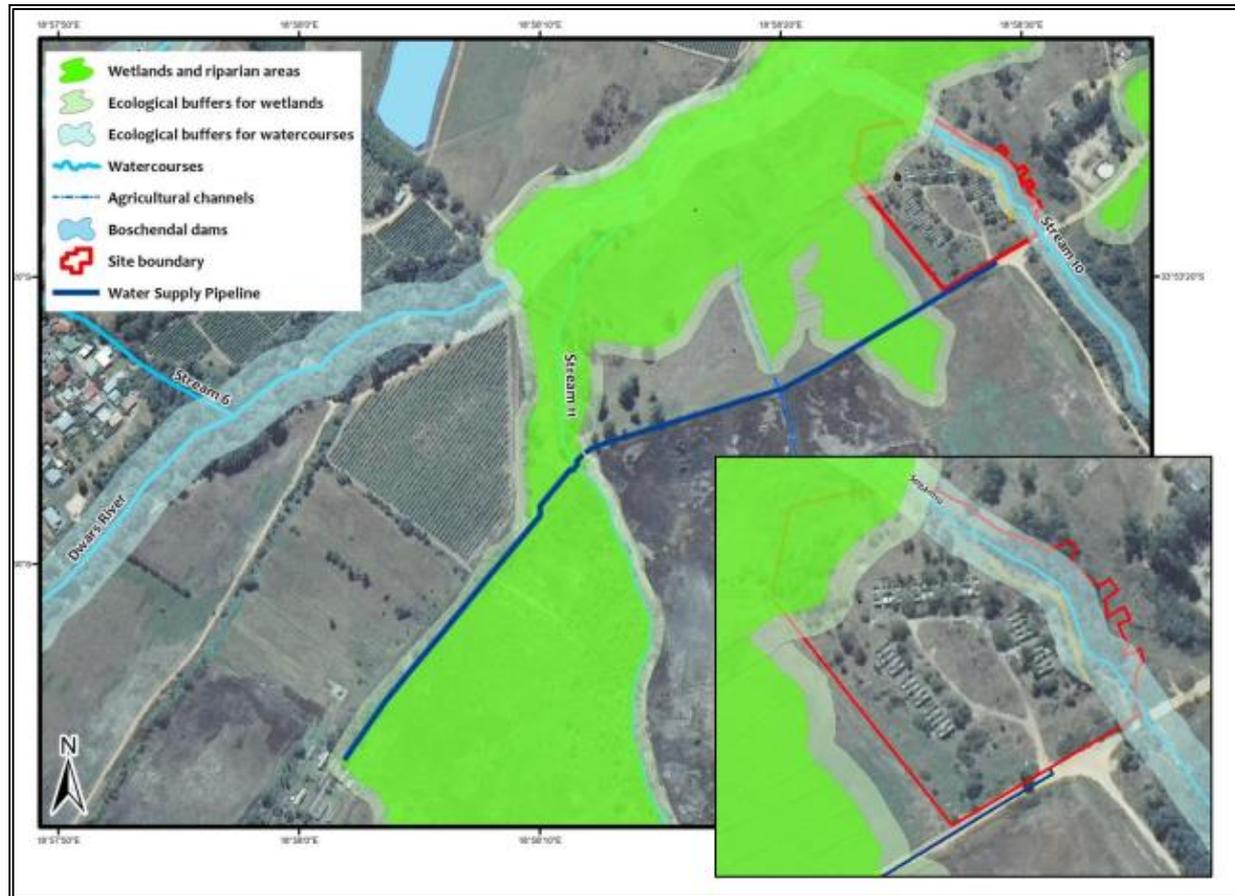


Figure 25 Map of recommended ecological buffers for the wetlands and stream on and around the New Retreat site and potable water line, Boschendal Estate.

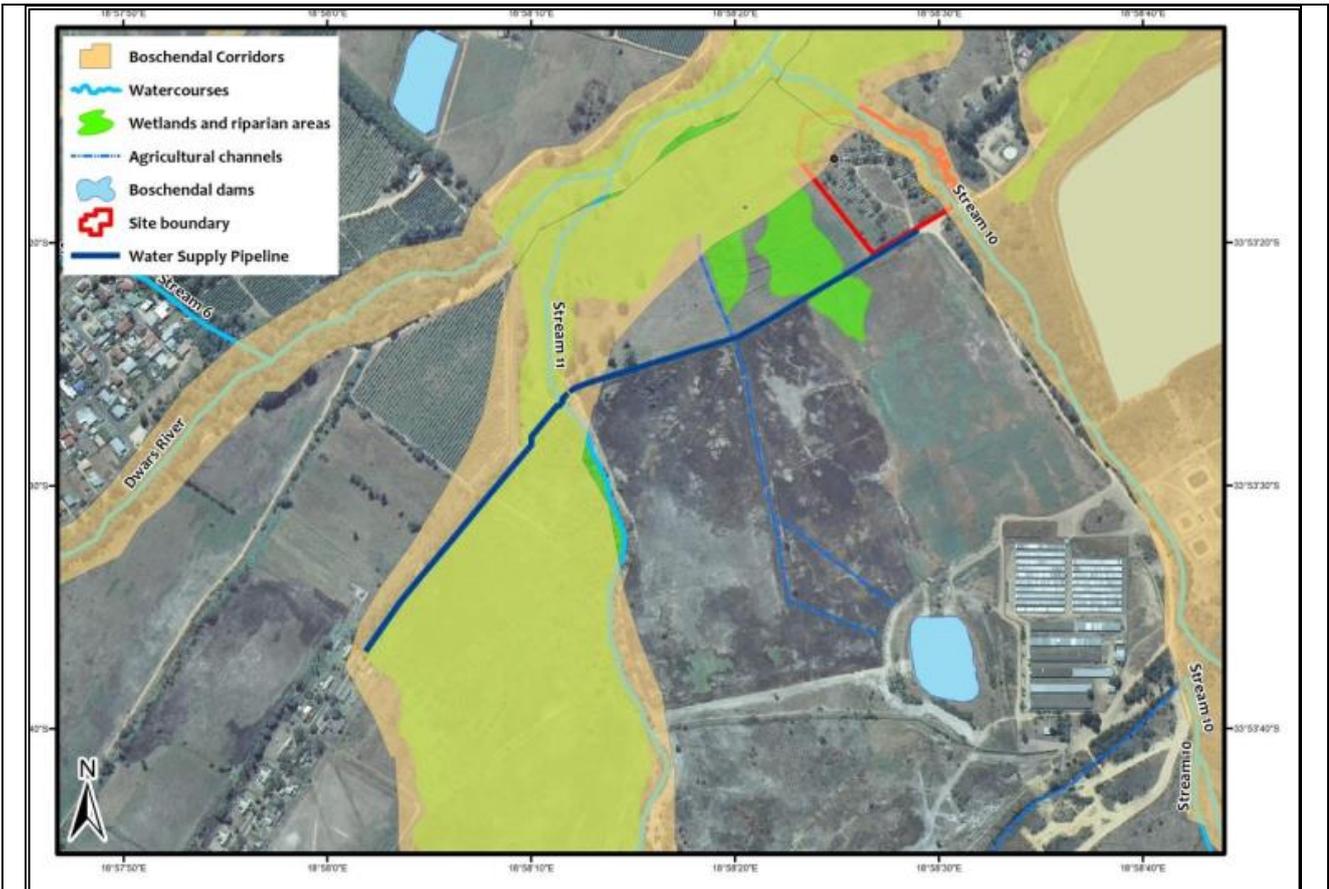


Figure 26 Ecological Corridors for the site (source: Snaddon, 2021)

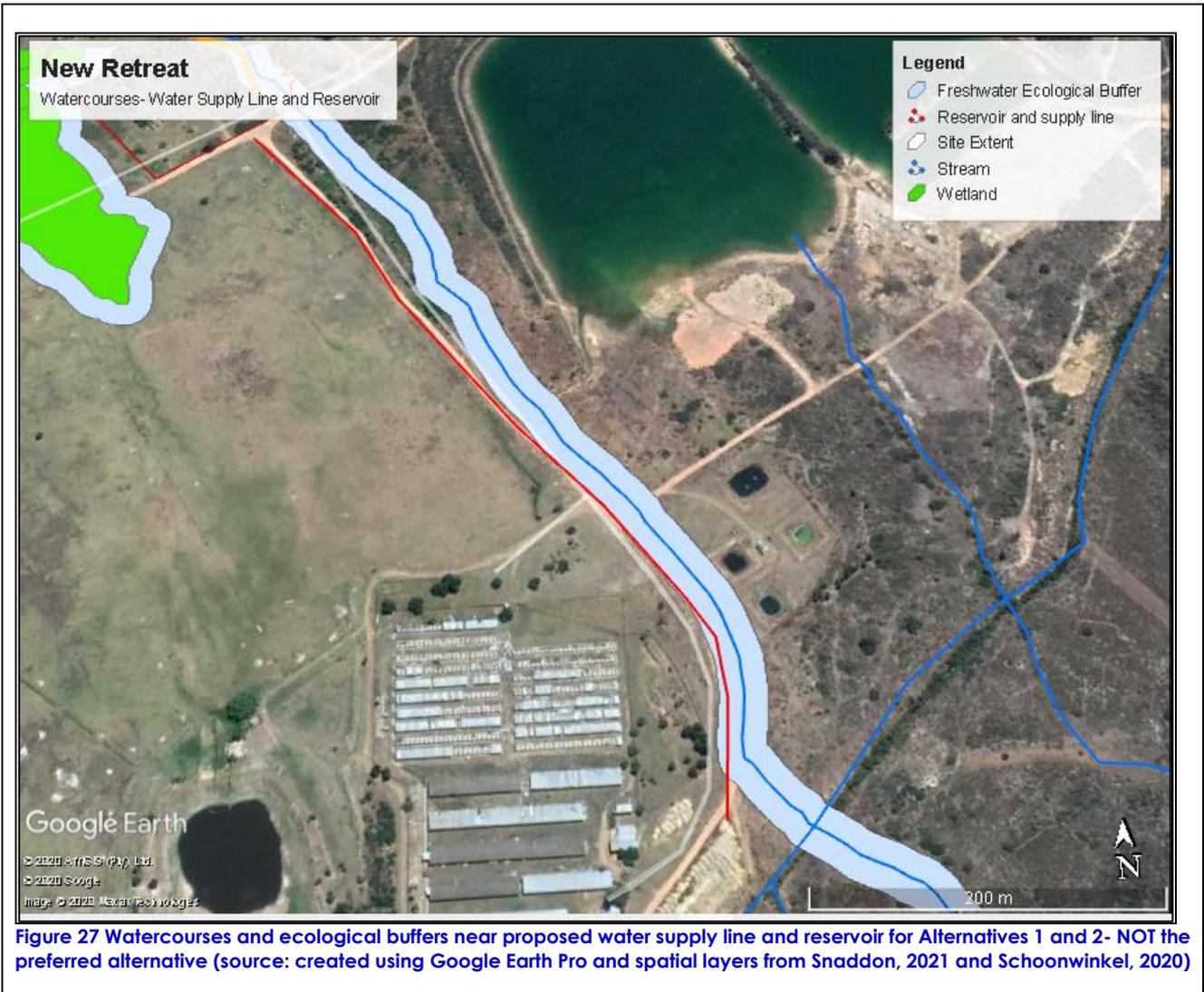




Figure 28 Proposed Water line to reservoir tanks within ecological corridor for Alternatives 1 and 2- NOT the preferred alternative (created using Google Earth Pro with layers from Snaddon, 2021 and Schoonwinkel, 2020)

The lower portion of Stream 10 is classified as an upper foothill river, with a seasonal (non-perennial) hydroperiod and such river types within the southwestern coastal belt ecoregion are critically endangered (Snaddon, 2021).

The channelled valley-bottom wetland is a critically endangered wetland type within the southwest Fynbos Bioregion, and the seep is a vulnerable wetland type (Snaddon, 2021).

The upper portion of Stream 10 lies in an upper C category – moderately modified - for PES, while the lower section below the diversion is in a D category 9 (Snaddon, 2021). Upper Stream 10 has a high ecological importance and sensitivity, while the lower river is of moderate EIS (Snaddon, 2021). Two wetlands were assessed – the Dwars River valley-bottom wetland and the seep wetland to the west of the site. Both wetlands are transformed from the natural state, as a result of the long history of cultivation of the Estate (Snaddon, 2021). There is evidence of excavations and berms in both wetlands, as well as roads and tracks (Snaddon, 2021). The “New Retreat seep” wetland was assessed to be in a Category D – largely modified – while the Dwars River valley-bottom wetland lies in a category C – moderately modified (Snaddon, 2021). In terms of provision of ecosystem services, both wetlands perform a number of roles in the landscape, with the Dwars River valley-bottom wetland emerging as slightly more important, due particularly to the larger size of this wetland, and the higher diversity and cover of indigenous wetland plants (Snaddon, 2021). The highest-scoring ecosystem service for the Dwars River wetland is phosphate trapping, followed by sediment trapping. These are ecological functions that are generally important in valley-bottom and floodplain wetlands, which are often large, gently sloping systems, with vegetation and soils that can trap sediments and nutrients (Snaddon, 2021). Overall, the Dwars River valley-bottom wetland was placed in the High EIS category, and the seep wetland in the Moderate category (Snaddon, 2021).

The components of the proposed development which would fall within the Dwars River valley-bottom wetland and its ecological buffer as well as within the ecological buffer for the stream are noted in Table 1.

The recommended buffer for Stream 10 at the site (above the dam) is 21 m for the Construction Phase and 15 m for the Operational Phase, noting that any existing infrastructure within these buffers can remain in place (Snaddon, 2021). The recommended ecological buffer for both the seep and the Dwars River valley-bottom wetland is 17 m for the Construction Phase and 15 m for the Operational Phase, noting that any existing infrastructure within these buffers can remain in place (Snaddon, 2021). These buffers would be observed during construction phase through measures included in the EMPr, while the operational phase buffers are respected in the proposed layout as only low-key activities (like boardwalks and landscaping interventions) would occur therein.

By ensuring that any new hard development avoids the corridors, which align with the ecological buffers, and with implementation of the mitigation measures recommended in this report, the ecological integrity of the corridors should be maintained (Snaddon, 2021).

Three additional watercourses have been identified which may be impacted by the proposed temporary and permanent water pipelines which is part of the Preferred Alternative (Alternative 3).

The route for the proposed water supply line to Lanquedoc would cross stream 11 as well as its associated seep. Stream 11 is an earth-lined channel with cobble and fine sediments and the watercourse has been heavily invaded by invasive alien plants, with few indigenous riparian plants remaining in the riparian area (Snaddon, 2021). Stream 11 is surrounded by a seep wetland that extends uphill towards Lanquedoc and the diversion channel, with the seep having approximately 10% invasive alien plants and the remainder as indigenous vegetation (Snaddon, 2021). Stream 11 and its associated seep both hold a moderate ecological importance and sensitivity (EIS) rating and in terms of Present Ecological Status (PES), they are both category D (largely modified) watercourses (Snaddon, 2021).

Buffers for stream 11 have also been set at 21 m for construction phase and 15 m for operational phase, noting that any existing infrastructure within these buffers can remain in place (Snaddon, 2021).

The interim water supply line which would connect to an existing irrigation supply located north-east of the site, would cross stream 10 (as describe above) as well as run very close to a seep below the York Dam. The York Dam seep wetland has been assessed as being in a PES category C – this seep has also been transformed by the presence of the road and the dam, and a few farm buildings. The wetland vegetation persists, however, including palmiet, *Prionium serratum* (Snaddon, 2021). In terms of EIS, the seep lies in the Moderate category (Snaddon, 2021)

The key mitigation measure recommended by Snaddon (2021) to protect the York Dam seep wetland is to place the temporary pipeline on the side of the road that is away from the seep wetland, so as to avoid the wetland. The recommended ecological buffers for the seep are 17 m for the Construction Phase and 15 m for the Operational Phase.

The stormwater management system has been described in Section B4.4 and the preferred alternative is that which relies on infiltration primarily via surface flow such that surface flow would pass through the proposed development without causing concentrated flow, aspects for consideration during detail design have also been prescribed by Snaddon (2021), which have been included as specifications in the EMPr. However, in general, the stormwater system has considered the site conditions and flood-line analysis for the Dwars River as well as Stream 10, as well as the freshwater impact assessment, and has been designed to protect the integrity of the proposed development and the freshwater system in the following significant ways:

- The system has been designed to **create a post-development runoff** scenario similar to that of pre-development (i.e. the present-day) run-off as there would not be an increase in hard surfaces (Middelmann & Hurworth, 2021).
- The system has been designed to **treat run-off** to comply with generally acceptable stormwater management policies for new developments. The plan, therefore, allows for all stormwater being treated on-site, allowing for local retention of water and infiltration into the soil and parking areas and roads/tracks would be constructed of permeable materials (Snaddon, 2021).
- The system has also been designed to **mimic natural conditions**, whereby the run-off would be controlled and infiltrated on site, throughout the site, and the site would be landscaped/planted (i.e. they would be "green" areas, not concrete grey areas) with locally indigenous vegetation appropriate to the habitats created (Snaddon, 2021; 2021 and Terra+, 2021).

Management specifications regarding construction and operation activities are contained in the relevant chapters of the EMPr (refer to Appendix H).

The flood line analysis indicates that much of the site falls within the 1:100-year flood, noting that this is attributed to the overtopping of the two dams to the east of the site (Obree, 2021). Refer to Figure 29 for a diagram indicating the extent of the 1:100 flood line.

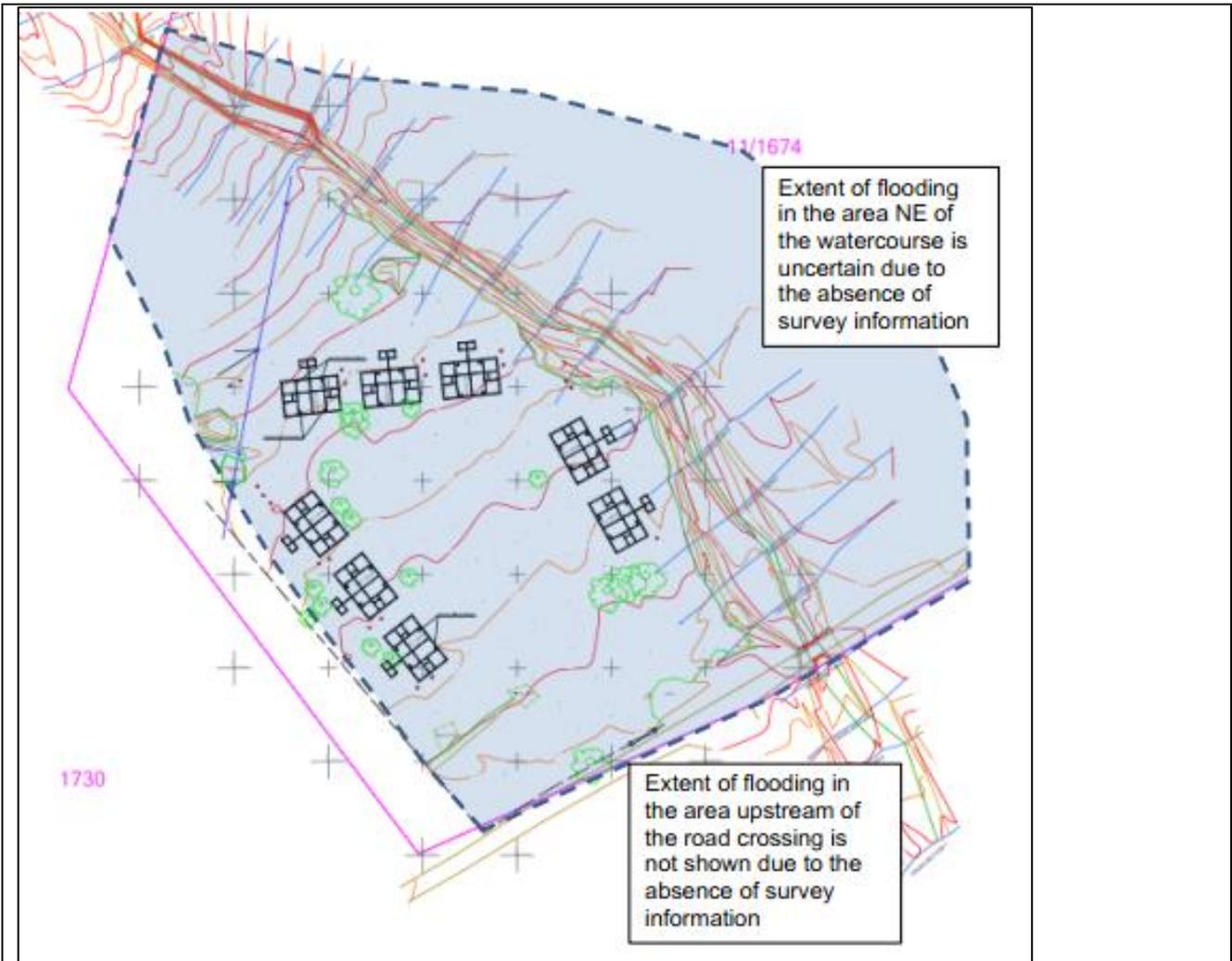
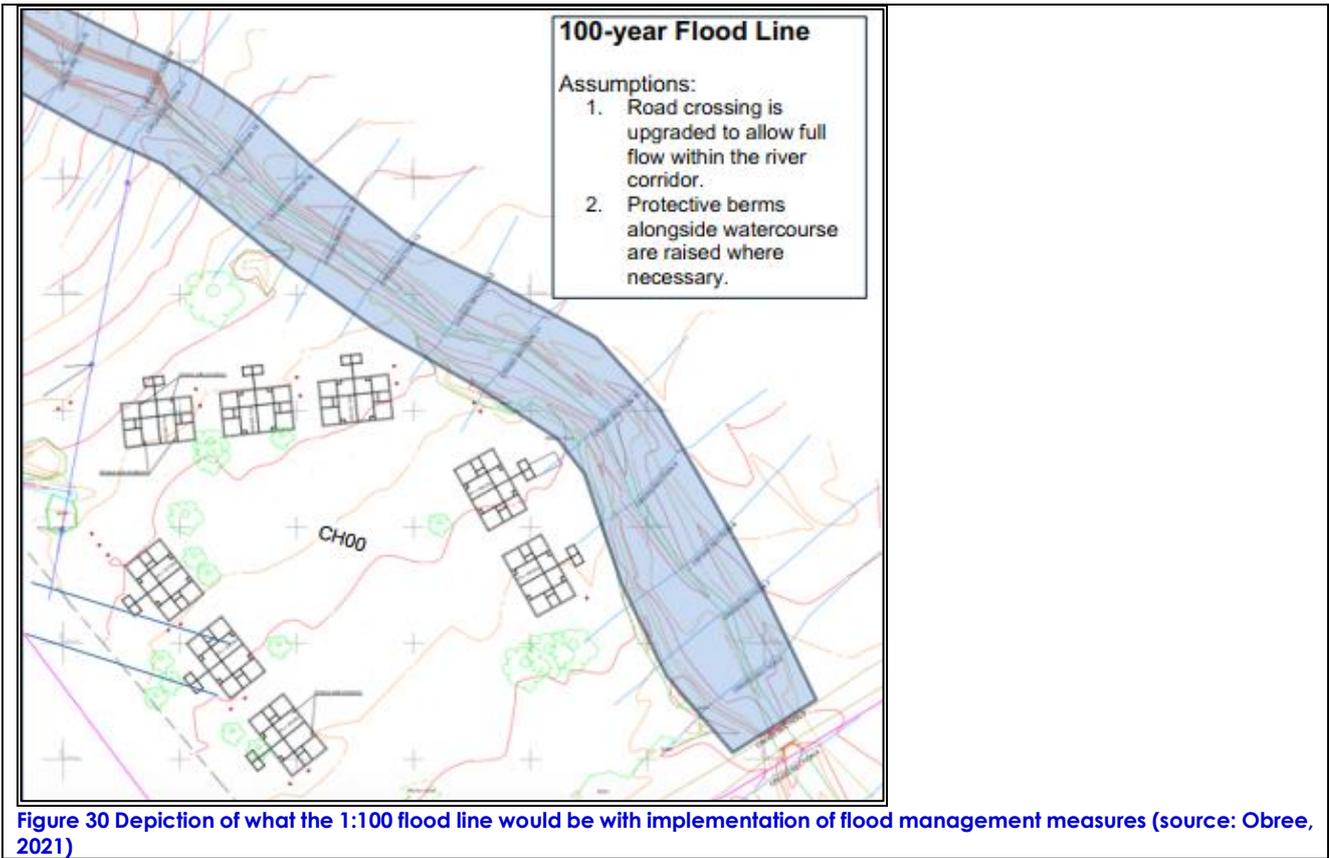


Figure 29 1:100 year flood line. The shaded area on this diagram indicates the extent of the site that is likely to be affected by the 100-year flood due to water bypassing and/or overtopping the existing road crossing. The extent of flooding upstream of the road crossing is not shown (source: Obree, 2021)

Obree (2021) notes that the sides of the watercourse have previously been raised by the construction of longitudinal berms on either bank. This has presumably been done to contain the flow within the watercourse and prevent floodwaters from affecting the areas alongside. However, these berms vary in height, resulting in the possibility of flow escaping to the areas alongside in places where they are of insufficient height.

Measures for the management of the flood line have been provided in the flood line report and they are all related to design. These measures are included in the project description (i.e. flood management measures, namely lowering culverts, reinstatement of berms and stream rehabilitation) and have been assessed from a freshwater ecology perspective. They are already included in the plans (refer to Appendix B1 (a)), but have, nonetheless, been included in the design specifications of the EMPr (refer to Appendix H). With the implementation of those measures, the 1:100 flood line would be contained within the limits of the stream (refer to Figure 30). The freshwater assessment has provided for a stream rehabilitation plan in order to guide the flood protection measures and provide suitable mitigation measures to reduce the impacts thereof to acceptable levels.



3. Coastal Environment – Not Applicable as site is not on a coastline

3.1.	Was a specialist study conducted?	YES	NO
3.2.	Provide the name and/or company who conducted the specialist study.		
3.3.	Explain how the relevant considerations of Section 63 of the ICMA were taken into account and explain how this influenced your proposed development.		
3.4.	Explain how estuary management plans (if applicable) has influenced the proposed development.		
3.5.	Explain how the modelled coastal risk zones, the coastal protection zone, littoral active zone, and estuarine functional zones, have influenced the proposed development.		

4. Biodiversity

4.1.	Were specialist studies conducted?	YES	NO
4.2.	Provide the name and/or company who conducted the specialist studies.		
A Terrestrial Biodiversity Compliance Statement was compiled by Nick Helme of Nick Helme Botanical Surveys and is referenced as "Helme, 2021" throughout this Basic Assessment Report. The full report can be found in Appendix G(c).			
4.3.	Explain which systematic conservation planning and other biodiversity informants such as vegetation maps, NFEPA, NSBA etc. have been used and how has this influenced your proposed development.		

Section E 4.4 of this report explains that a variety of spatial data sources were consulted for development on this site.

Conservation and water resource information was reviewed in terms of the CapeNature Spatial Biodiversity Plan (note that this is what is referred to in the specialist report and is used interchangeably with the WCSBP). These datasets indicate certain aquatic resources on the site, which is aligned with the freshwater findings. The SBP (Pence 2017) does not indicate any CBA in the study area for the proposed new retreat site but does map about 75% of the site as ESA 2 (refer to Figure 31) (Helme, 2021).

The proposed pipeline to Lanquedc passes through degraded, unmapped land in the eastern half, but the western half passes through wetlands and watercourses mapped as ESA1 and ESA2 (Helme, 2021) (refer to Figure 31), noting that these have been identified by Snaddon (2021) as Stream 11 and its associated seep as described above. The temporary water supply pipeline will be routed largely along existing roads, and hence does not impact on any mapped areas of CBA or ESA.

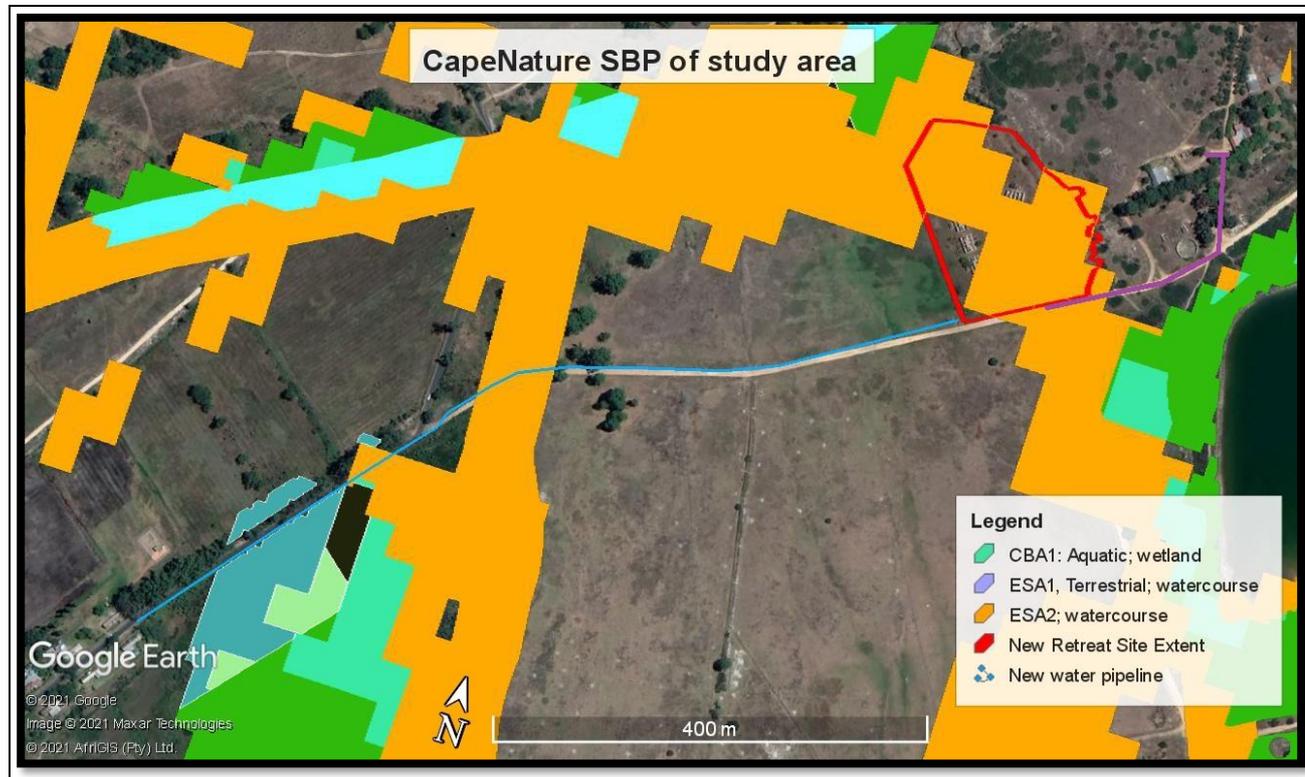


Figure 31: Extract of the CapeNature Spatial Biodiversity Plan, showing that about 75% of the site is mapped as a terrestrial ESA 2, a relatively low level of priority. The western half of the proposed permanent pipeline however goes through ESA2 and ESA1 wetlands and watercourses. The temporary water pipeline is marked in purple, and although it seems to cross some mapped ESA2 it will in fact be within an existing road at this point (source: Helme, 2021).

This spatial data has informed the proposed development through consideration of biodiversity on the site and along the route for the proposed potable water lines, both from a terrestrial perspective as well for the aquatic resources on site. This is the reason for undertaking a Terrestrial Biodiversity Compliance Statement (refer to Appendix G(c)) and a freshwater/aquatic biodiversity impact assessment (refer to Appendix G(e)). The findings of these assessments have provided more detailed baseline information in terms of biodiversity on site and along the proposed potable water pipeline routes and are included in this report, with all mitigation measures arising from these included in the EMPr as conditions of authorisation (if granted by the DEA&DP).

4.4. Explain how the objectives and management guidelines of the Biodiversity Spatial Plan have been used and how has this influenced your proposed development.

The WCSBP is the relevant Biodiversity Spatial Plan for the area in which the site is located. The details of how the objective and management guidelines have been applied in the proposed development are included in Section E 6 of this report, however, to summarise, the site is located in an area of no natural remaining vegetation from a terrestrial perspective and in an ESA wetland area, with rivers mapped thereon. The biodiversity spatial planning information for the wetland areas ultimately indicates that some habitat loss would be acceptable, but that the functioning of the ecosystem should not be compromised (Pool-Stanvliet *et al*, 2017). General best-practice for development should also be implemented in these areas, with consideration and implementation of suitable buffers, and any necessary authorisations should be obtained, where required. The mapping of rivers on site has also indicated the need for further assessment.

The Freshwater Impact Assessment by Snaddon (2021) has been carried out and mitigation has focused on keeping risk to the freshwater ecosystem (rivers and wetlands) low, which also considers the off-site (i.e. cumulative) aspects. Furthermore, with respect to specific guidelines provided by Pool-Stanvliet *et al* (2017), the Freshwater Impact Assessment has included the delineation of wetlands on site and along the proposed potable water pipeline routes as well as the establishment (and

appropriate motivation) of the required buffer areas for the development on the new retreat site itself. This was also carried out for the rivers on the site, and the river crossed by the proposed potable water line has also been mapped and impacts of that assessed. These buffers are already considered and applied in the development footprint for all three development alternatives assessed, with the preferred option being the one that locates the proposed conservancy tank well beyond ecologically sensitive areas and opts for such a tank over a sewage package plant, which holds slightly greater risk to the aquatic ecosystems on site. The stream rehabilitation plan also addresses the ecological rehabilitation of the stream such that the adverse impacts would be adequately mitigated and the intentions of the WCBSP (to continue for ecosystem function) would be fulfilled.

The proposed development has considered the WCBSP in so far as the development footprint avoids the most sensitive areas and includes buffers from aquatic features. This is also considered in the routing of the proposed potable water lines wherein it would remain within the existing roadway and cross a stream and culverts with a pipe fixed to the site of the existing crossing. In addition, the stormwater management has been designed according to principles which are considered appropriate by Snaddon (2021) thereby limiting risks to the aquatic ecological system to a low level. Furthermore, Snaddon (2021) includes mitigation measures which would be implemented during detail design (noting that many recommendations are already present in the services plan as well as the proposed site plan), measures on the wastewater treatment system and use of treated wastewater (note that this does not apply to the preferred alternative, but rather only to Alternatives 1 and 2), landscaping and rehabilitation, measures to ensure the continued integrity of the ecological corridor, as well as construction mitigation measures, that would ensure low risk to the aquatic system, while acknowledging that some possible habitat loss could occur, noting also that Snaddon (2021) confirms that there may be positive (albeit low in significance) operational impacts through the landscaping and control of alien and invasive species. There is also a stream rehabilitation plan for stream 10 which would ensure ongoing sustainability of the system. These recommendations would form conditions of environmental authorisation (if granted by the competent authority).

Helme (2021) adds that the guidelines for ESA 2 are that it is degraded habitat that should be restored, mainly for its ecological connectivity value. Reasons given for selection of this area as an ESA2 include the threatened status of the underlying (original) vegetation type, water resource protection, and potential habitat for threatened vertebrates (Cape Mountain Zebra) (Helme, 2021). The latter is purely theoretical, as is the former, with negligible natural habitat remaining on site (Helme, 2021). Regarding the proposed permanent potable water line route to Lanquedoc, Helme (2021) also notes that most of the road verge is bare of vegetation, until one reaches an extensive planted avenue of exotic gum trees.

Engagement with the DWS regarding the applicability of the NWA has also been carried out (with the pre-application submission having been made on 7 September 2020, initial pre-application meeting held 2 December 2020, and second pre-application meeting held 16 February 2021) and they have confirmed that the proposed development can be registered under a General Authorisation (refer to Appendix M for evidence thereof). Other aspects of the guidelines such as use of indigenous vegetation, alien clearing and best practice measures have been addressed in the proposal through the landscaping plan, management requirements for the operational phase as well as design philosophy (e.g. stormwater management according to generally acceptable stormwater management policies).

4.5.	Explain what impact the proposed development will have on the site-specific features and/or function of the Biodiversity Spatial Plan category and how has this influenced the proposed development.
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The site-specific features relevant to the WC BSP are the watercourses on site, namely the stream, Dwars River valley-bottom wetland and the seep, as well as their associated buffers. In addition, the features relevant to the WCBSP for the proposed pipeline routes include stream 11 and the associated seep, and the York Dam seep wetland. Specific project components relevant to these are listed in Table 1. Through implementation of mitigation measures, adverse impacts on these would be kept low and there would also be a low positive impact from a landscaping rehabilitation perspective. In terms of the proposed potable water line, the routing thereof to be located within existing roadway and/or in the compacted bare earth adjacent to it (on the far side of any wetlands), serves to avoid sensitive ecological environments nearby.

From a terrestrial biodiversity perspective, Helme (2021) asserts that both botanical and faunal sensitivity of this site and proposed potable water line routes are Low on a regional scale (with the exception of the on the southern side of the Lanquedoc road section of the proposed potable water pipeline route, where it is rated Low to Medium), there are no faunal or botanical constraints to the proposed development, the overall ecological significance of the development of the site would be Low negative, and that this would be enhanced to positive impacts with the implementation of the proposed rehabilitation indicated in the landscape plan, thereby making the site (of the proposed New Retreat) more attractive to a wider range of birds and insects. In terms of possible impacts, significance is low negative prior to mitigation, but mitigation measures (which are already built into the proposed development) would result in positive impacts. Likely construction phase impacts have been found to be loss of remnant vegetation and faunal habitat on site (Helme, 2021) and the minor operational phase impact of habitat fragmentation and loss of current levels of ecological connectivity across the site (Helme, 2021). Both of these impacts would be countered and improved upon with the implementation of the landscaping. Note that no further impact assessment is necessary regarding the routings of the proposed bulk water pipelines given that the locations of the lines would be routed within the low sensitivity areas confirmed in Helme (2021). These routings have been intentionally devised so as not to affect more sensitive habitat and thus avoids potential adverse impact in this regard (Helme, 2021). Overall, the terrestrial biodiversity of the site would be improved through the proposed development.

A tree survey was also conducted by Terra+ which notes the trees to be removed and those to be retained (refer to Figure 32 and Appendix G(g)). The aspects of the trees which were considered in determining whether they would be removed or retained include whether they are protected or indigenous, their shape, health and conditions, as well as the maturity, height, position and character or space-making qualities of the tree (Terra, June 2020). The significance of the tree was also considered (Terra, June 2020). Further, there are details in terms of tree management during construction and pruning and health monitoring methodology contained in the EMPr.

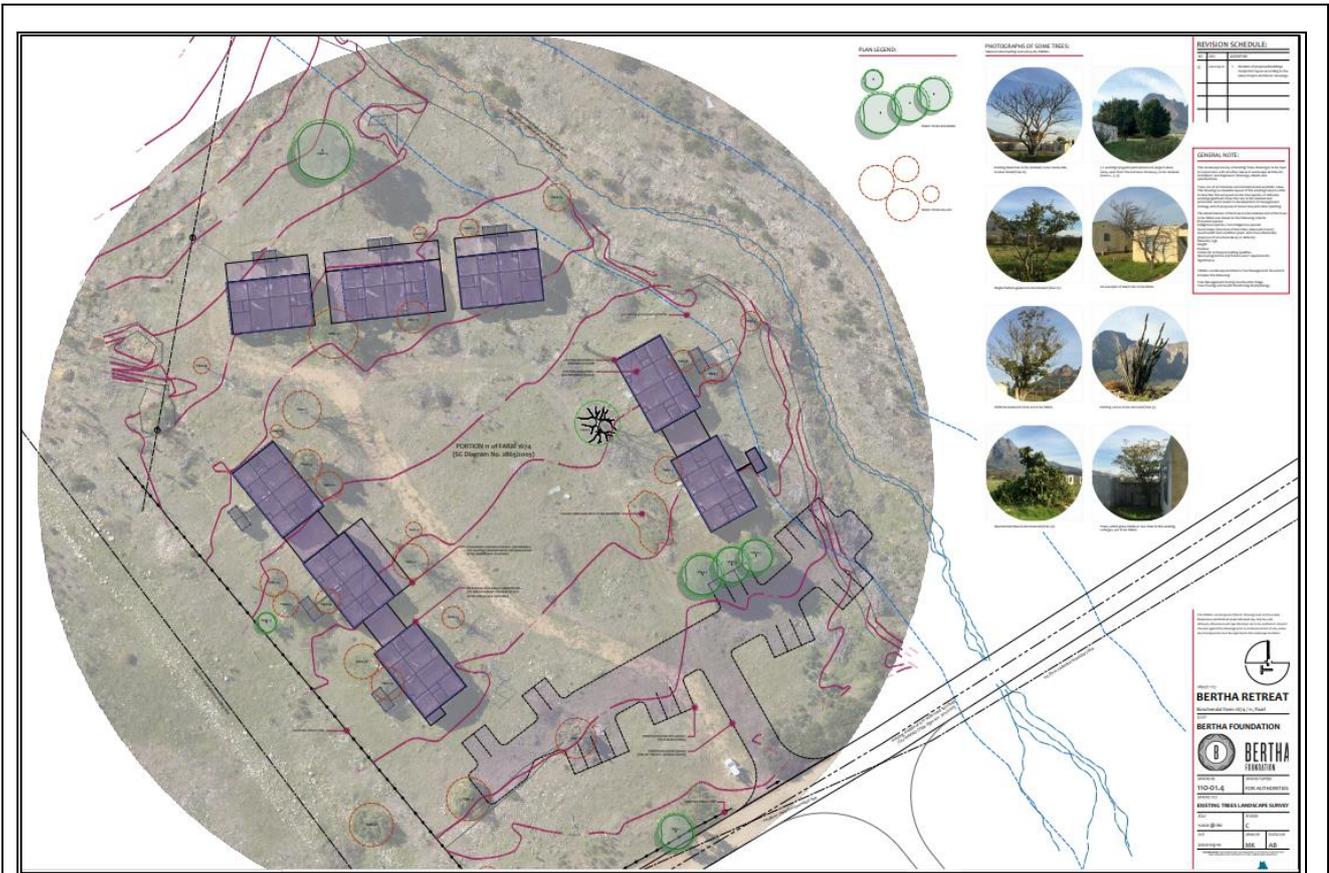


Figure 32 Tree Survey (source: Terra+, 2020)

4.6. If your proposed development is located in a protected area, explain how the proposed development is in line with the protected area management plan.

Not Applicable, the site is not located in a Protected Area.

4.7. Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development.

A high-level faunal assessment of the farm was carried out in 2019. Refer to Figure 33 for the faunal baseline map (Jackson et al, 2019) of the entire farm.

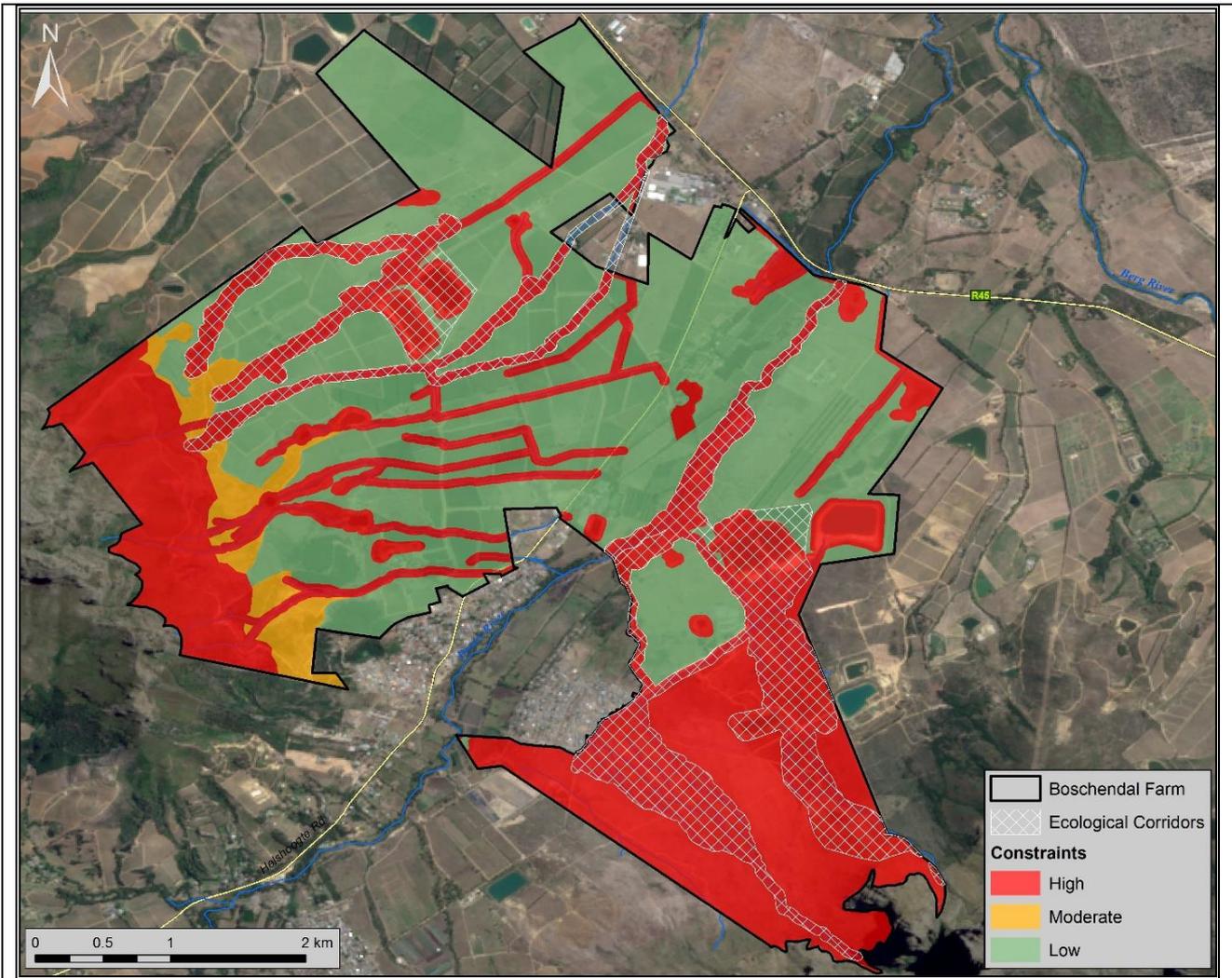


Figure 33 Suggested Faunal Corridors for the Farm (source: Jackson *et al*, 2019)

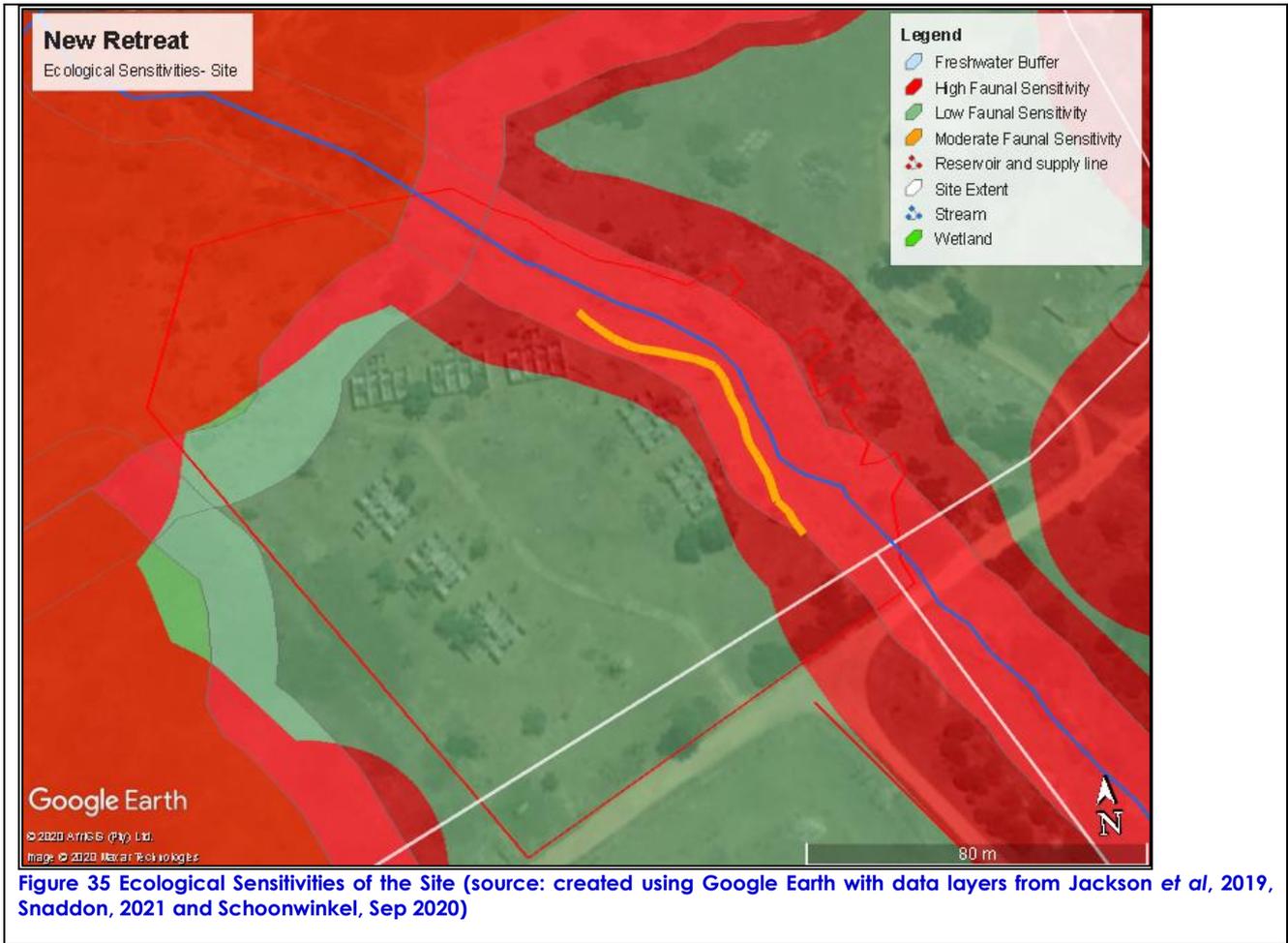
Important Bird Area (IBA) are sites critical for the long-term survival of bird species that are globally threatened, have a restricted range, are restricted to specific biomes/vegetation types and/or have significant populations (BirdLife SA, 2019 in Jackson, 2019). The closest IBA to site and proposed potable water line routes is the Boland Mountains IBA which has a status of Global IBA (A1, A2, A3) and borders the Boschendal Estate to the southeast (refer to Figure 34). The Boland Mountains IBA is 250 000 ha and runs along the western extremity of the Cape fold belt north from the Kogelberg Nature Reserve (near Betty's Bay and Kleinmond) for 120 km to the Kluitjieskraal State Forest and Waterval Nature Reserve south-west of Tulbagh (BirdLife SA, 2019 in Jackson, 2019). A total of 274 bird species were recorded in the IBA during SABAP2 (BirdLife SA, 2019 in Jackson, 2019). The Boland IBA was classified as such because it supports both fynbos and forest habitat range-restricted and biome-restricted species, as well as a number of globally and regionally threatened species (BirdLife SA, 2019 in Jackson, 2019). While the site is not in an IBA, the proximity to one could mean that birds may pass through the site. Given the transformed habitat, the specific site would not likely receive as much attention as other parts of the farm with a richer habitat, however the proposed fynbos rehabilitation could serve to attract birds which typically enjoy those habitats in other areas of the farm such as Cape Sugarbird, Cape Grassbird, Familiar Chat, Karoo Lark, Rock Kestrel and Common Buzzard (Jackson, 2019). A variety of reptiles, amphibians, mammals, bird, and fish occur throughout the farm and the improvement of the fynbos and vegetation in general would serve to provide more available habitat for those species which prefer the fynbos, riverine and wetland habitats. Fynbos habitat in particular is important in the region and some faunal species have adapted to living in fynbos (Jackson *et al*, 2019), therefore improving the fynbos habitat through rehabilitation would be positive for local fauna.



Figure 34 Important Bird Areas near Boschendal Estate (source: Jackson *et al*, 2019)

When reviewing the site under the high-level mapping indicated in Figure 33, the site is largely located within a low sensitivity faunal area, however the high-sensitivity faunal areas and the association faunal corridors correlate with the wetlands and river (and associated ecological buffers) associated with the site (refer to Figure 35). Ecological sensitivity has also been considered relative to the proposed water supply line and the reservoir at the end (note, this is not relevant for the preferred alternative, and only Alternative 1 and Alternative 2) (refer to Figure 36) and this is either adjacent to, or at times encroaching into a faunal corridor. The same has been considered for the proposed potable water lines for the preferred alternative and Helme (2021) confirms that the site has low regional sensitivity in this regard, but for the area on the southern side of Lanquedoc Road, which is low to medium. Given that the lines would be underground and located within existing farm road, this would not provide any constraints during operation and would, therefore, only require careful management during construction, particularly regarding trenching and measures to limit fauna from getting trapped in the trenches. Such measures have been included in the EMPr.

With regard to habitat, most of the site is considered to be transformed habitat, with aquatic habitat on the fringes (corresponding to the wetlands and river) (Jackson *et al*, 2019).



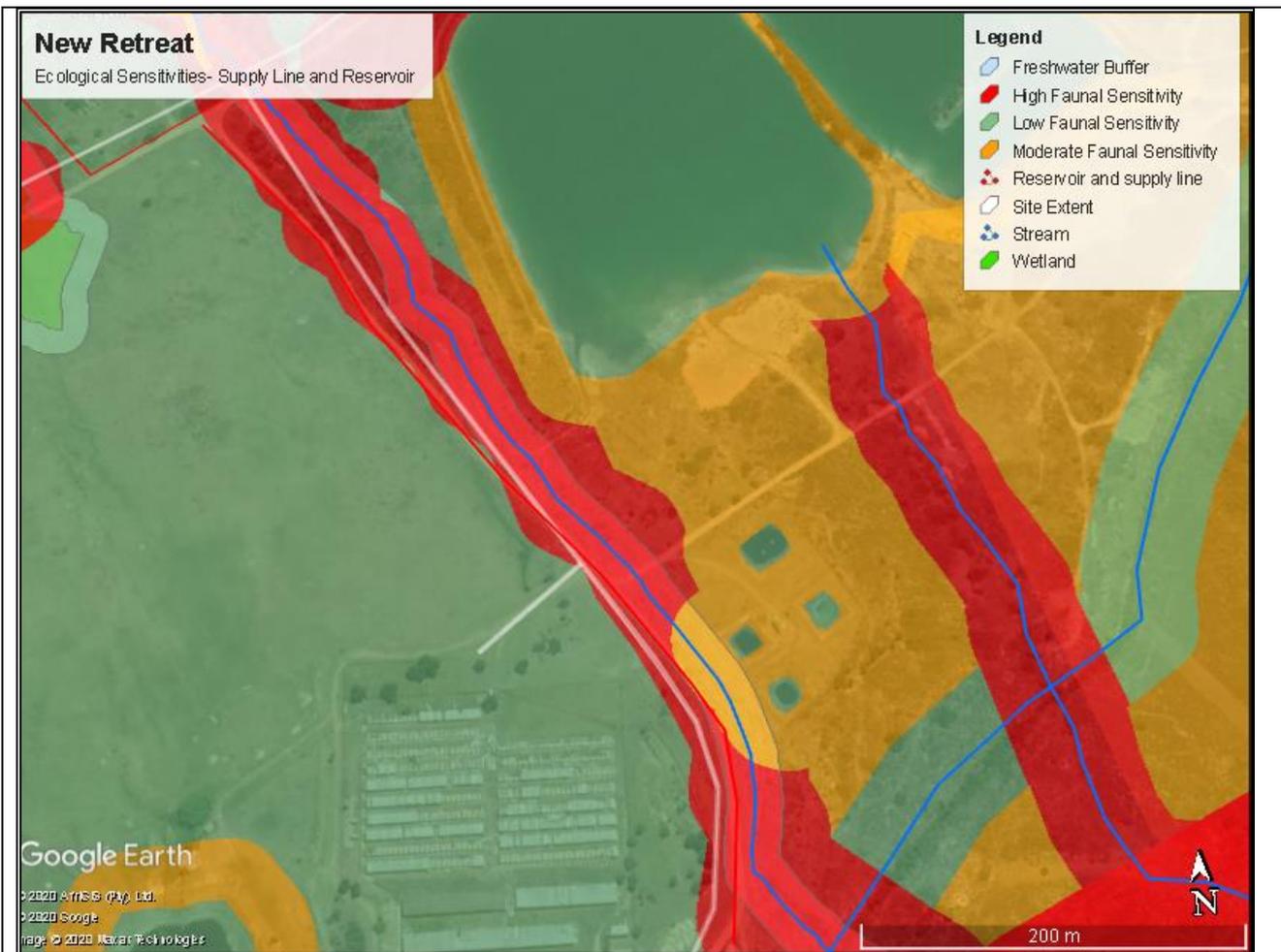


Figure 36 Ecological Sensitivities of the water supply line and reservoir assessed for Alternative 1 and Alternative 2 (not the preferred alternative) (source: created using Google Earth with data layers from Jackson *et al*, 2019, Snaddon, 2021 and Schoonwinkel, Sep 2020)

The high-level assessment carried out in 2019 has been further refined for the site through assessment by Snaddon (2021) and Helme (2021) for the main development site, the proposed potable water pipeline route to Lanquedoc and the interim water pipeline which would connect to an existing irrigation line

Fauna noted in the stream included the Cape River Crab, *Potomonautes perlatus*, blackfly larvae, *Simulium* spp., and numerous mayfly nymphs of the family *Baetidae*. These species are all hardy taxa, tolerant of impacted water quality (Snaddon, 2021).

A range of common and widespread birds are likely to use the site but few of these were observed on site (Helme, 2021). Species observed include Hadedda (*Bostrychia hagedash*), Shrub Karoo Prinia (*Prinia maculosa*), Fiscal Shrike (*Lanius collaris*) and Cape wagtail (*Motacilla capensis*) (Helme, 2021).

Frogs were heard calling from the damper areas, including along the western part of the proposed pipeline (along Lanquedoc Road) and these were all the widespread *Strongylopus grayii* (clicking stream frog) (Helme, 2021). No other frogs are likely on site. Few reptiles are likely to be resident, although occasional molesnake (*Pseudaspis cana*) and Cape cobra (*Naja nivea*) may cross the site or visit to hunt some of the small mammals on site (Helme, 2021).

Small mammals likely to be resident are striped field-mouse (*Rhabdomys pumilio*) and Cape Grey mongoose (*Galerella pulverulenta*), and the characteristic sand turrets of molerat (*Bathyergus suillus* or *Georchus capensis*) were observed (Helme, 2021).

Helme (2021) states that the faunal diversity of the site is low, and typical of disturbed, remnant habitat in the region. No animal Species of Conservation Concern were recorded in the study area, and none are expected to survive in this disturbed area. Faunal sensitivity is Low on a regional scale (Helme, 2021). Faunal sensitivity is Low on a regional scale, except on the southern side of the Lanquedoc road section, where it is rated Low to Medium (Helme, 2021).

The proposed development is compatible with the low sensitivity opportunities provided by Jackson *et al* (2019) which includes building infrastructure such as offices, guest houses, restaurants, parking lots and camping, as well as further development of agricultural activities such as orchards, vineyards, gardens and grazing, and also low impact Eco-camping. The high-sensitivity areas should be kept in a natural state, remove invasive plant species and be managed to avoid negative faunal impacts

and hiking trails, mountain bike trails and birding, if well managed, would be compatible with these areas (Jackson *et al*, 2019). The proposed development is aligned with these goals as fynbos rehabilitation and management as per measures indicated in Snaddon (2021) would occur in the faunal corridor (i.e. the stream, wetlands, and ecological buffers). Furthermore, generic mitigation measures have been provided by Jackson *et al* (2019) and those relevant to the site and proposed development are included in the EMPr.

Therefore, the measures included in Snaddon (2021) and Helme (2021) relate to the preservation and improvement of the habitat for riverine and terrestrial fauna respectively, and those methods would respond to the fauna on site and continue to provide them with habitat. In the case of the proposed potable water pipelines, this is demonstrated through avoidance of habitat by routing the line in areas which are already low in sensitivity and highly disturbed (i.e. in the existing road, or disturbed area adjacent thereto, or on the far side of wetlands located close to the road). Built structures would be located closely to existing structures and would remain outside of any faunal sensitive areas, with the exception of three of the existing easternmost cottages which overlap into this zone. There are also measures in the EMPr to ensure that animals are not harmed during the construction phase and that workers are also educated on potential animal threats to keep all parties safe.

The landscape plan also includes proposed planting of trees and other indigenous vegetation in order to rehabilitate the site and would provide habitat for fauna, which would increase over time as the landscape matures. The EMPr includes measures to consider the use of plants which would attract bees and other insects as well.

Given the proximity of the buildings to a faunal corridor, the proposed development also includes measures that would facilitate faunal movement such as having no fencing around the site, reshaping of riverbanks for easier faunal access (as recommended in Snaddon, 2021), and ensuring an organic layout with significant planting.

5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.

The primary geographical aspects of the site are centred around the surface water and groundwater on the site. The flood-line analysis, river, and wetlands on site have influenced the nature of the proposed development through limiting development outside of ecological buffers and development of a stormwater management system which would accommodate the run-off, as well as promotion of permeable design measures to ensure that post-development run-off is low. The flood-line analysis for Stream 10 has also provided data on the potential extent of a 1:100-year flood and measures for flood control have been incorporated into the proposed development scope. Further, as part of the flood management measures, a stream rehabilitation plan has also been devised by Snaddon (2021) and included in the EMPr, which further includes a Maintenance Management Plan for the stream and wetlands.

Design-related as well as construction-related specifications are contained in the EMPr. The issue of the potential need to carry out de-watering has been raised with the DWS and would be resolved through the NWA requirements (noting that DWS has confirmed that the proposed development would require registration under a General Authorisation). This engagement with the DWS is being carried out in parallel with the Basic Assessment process, on an on-going basis.

The site has also been intentionally located on land which is not suitable for cultivation (Lanz, 2021) in order to ensure that no opportunity costs in terms of agricultural yield would be foregone.

Founding conditions would be assessed during detailed design.

6. Heritage Resources

6.1.	Was a specialist study conducted?	YES	NO
6.2.	Provide the name and/or company who conducted the specialist study.		
Mr. Mike Scurr and Ms. Katie Smuts of Rennie Scurr Adendorf (RSA), referenced as "Smuts & Scurr, 2020" in the body of this Basic Assessment Report- refer to Appendix G(f) for the full HIA.			
6.3.	Explain how areas that contain sensitive heritage resources have influenced the proposed development.		
	<p>Smuts & Scurr (2020) identify the following heritage resources on the site (refer to Appendix G(f) for more detail in this regard):</p> <ul style="list-style-type: none"> • Archaeological Heritage: Surveys have not identified archaeological material - either Stone Age or historic - in the development area, either as part of the current application (Smuts, 2020), or previous ones (Hart and Webley, 2009). Given the long history of utilisation of this landscape for farming, it is likely that pre-colonial remains would be disturbed, and or destroyed. Finds most likely to occur relate to the historic past, although in this area of site, given its distance from the historic homesteads of Boschendal, Rhone and Bethlehem, and its historic use as open, undeveloped grazing land, historic finds are not anticipated. It remains possible that development on site could result in the discovery of similar Later Stone Age settlements to that uncovered at Solms Delta at a similarly positioned site there. • Architectural Heritage: The cottages themselves are less than 60 years old, having been built in the late 1980s for Amfarms. They hold no architectural or aesthetic significance. • Landscape Heritage: <ul style="list-style-type: none"> ○ Cultural Landscape: The cultural landscape is of such high significance that it forms part of the grade I CWCL and has been put forward for inscription on the UNESCO tentative world Heritage 		

Site list. The Stellenbosch municipal Heritage Survey has identified the area between the R45 at the northeast, Lanquedoc at the south west, the eastern banks of the Dwars River at the west, and the slopes of Hutchinson Peak - for the purposes of this assessment, the eastern boundary of Boschendal in this area - as a discrete Landscape Unit (LU). This LU is notable for the natural vegetation on the mountain slopes and perennial streams that feed the irrigation dams. While the Survey notes that there are some intrusive sites and neglected natural areas, the area is remarkable for the lack of development and even of vineyards or orchards. Ou Wapad- A further important element in this landscape is the old wagon route that runs from the gates to the R45 at the north, south past Lanquedoc, across old Bethlehem and all the way to Kylemore, traversing some 6.5 km of private and public land.

- The “**ou wapad**” or old wagon road, is a road historically linking the neighbourhoods of Banhoek, Kylemore, Johannesdal, Lanquedoc and Pniël, all the way up the road to Franschhoek (Pastor-makhurane, 2005). The path was a part of a network of roads that were links to places of leisure, ritual, and the many landscape features of the valley. Arising from a network of historic routes across and through the northeastern extent of Boschendal from the earliest times - possibly even following precolonial routes - the wapad seems to have formalised after the establishment of Lanquedoc at the turn of the c20th. The York Farm cottages and Thembaletu were built along the route decades after that, becoming part of the transport network. This is considered to be of significant social value because the various villages were mostly racially homogeneous, enclaved communities. For this reason, it could be said that the route promoted social cohesion. The path currently serves as a farm road and is used by farm vehicles and leisure cyclists and the privatisation of the farm landscape in recent years has restricted access to the route for its former users.

- **Social Heritage:** The social significance of the farm and the site is high given its long history of use, and the particular sensitivities arising from the unequal and discriminatory labour practices from the time of slavery to the recent past. The cottages are representative of a layer of social history and meaning that was disrupted and truncated by the removal of workers off Boschendal in the early 2000s. Most residents had moved to York Farm cottages from the local area, Pniël, Lanquedoc and Kylemore, and lived in the cottages for a single generation, with only one resident indicating they were the second family to occupy a cottage. Most residents worked for Rhodes Food, Amfarms or Boschendal. After being forced to leave the cottages, the families were all moved to the same street in the Lanquedoc extension built in the early 2000s, and most work either on the land, or in the service department of Boschendal. The York farm residents were linked to Boschendal through labour as well as the wider site and resources it had to offer. The river also features in the memory of the site as it was used for communal activity such as washing (note that this is a historic use) as well as recreation by the residents. The dam was also important as children swam and played in the dam. The natural environment was also important to residents as they picked flowers on the farm, planted kitchen gardens behind the cottages and planted flower gardens in front. Recent reported memories conform to established traditions that linked the workers on Boschendal, and residents in the neighbouring communities with the river, the surrounding mountains, and the farmlands themselves. This connection has increasingly been diminished through the increased fragmentation and securing of parcels of land. The cottages were described as a place of peace, quiet and community, with the central area a communal space enjoyed by adults and children. A sense of ownership linking residents to the cottages and immediate environment.

The above can be distilled into two important aspects of significance for the site, that of the landscape and the social history of the site and its context.

The significance of the landscape resides in its aesthetic properties and the dramatic backdrop of the Drakenstein mountains. The cultural landscape is of social, cultural, and historic significance that resides in the balance achieved between its wilderness qualities and current and past agricultural activities.

The east Precinct, in which York Farm is located, is qualitatively different from the lands to the west of the Dwars River, having historically been more marginal to the wine and fruit farming activities on site (Smuts & Scurr, 2020). York Farm and the surrounding landscape shows less intensive utilisation and occupation over Boschendal's long, farmed history (Smuts & Scurr, 2020). As such, this precinct can be considered to hold less intrinsic significance than the western portions of Boschendal, while still contributing significantly, and incontrovertibly, to the significance of the farm as a whole (Smuts & Scurr, 2020).

From a site perspective, the York Farm cottages hold no architectural or aesthetic significance, except nominally as examples of a category of farm labourers' cottage representative of a period of Boschendal's history (Smuts & Scurr, 2020). Built in the 1980s under Amfarms, they are not considerably different to other cottage clusters across the farm that date to the same period, such as at Agterdam (Smuts & Scurr, 2020). While this category of cottage holds meaning as part of the evolution of cottage types on the farm, individual cottages and cottage clusters are not necessarily conservation worthy (Smuts & Scurr, 2020). The cottages do, however, hold social significance as representative elements of the history of labour practices on the farm that they represent (Smuts & Scurr, 2020). The long history of farm labour originates with slave labour, a system of oppression and exploitation that has, and continues to, receive considerable attention in heritage and social studies (Smuts & Scurr, 2020). That this system can be understood to culminate, in a sense, with the eviction of the residents from this site as recently as the mid-2000s is

less widely acknowledged and, therefore, has not widely been considered as a legitimate contributor to site significance until recently (Smuts & Scurr, 2020).

Regarding the potable water line, that runs from the Boschendal gate to Lanquedoc links the historic workers' village of Lanquedoc with the R310 (Smuts & Scurr, 2021). Lanquedoc consists of its historic core of cottages designed by Sir Herbert Baker for Rhodes' workers at the turn of the C20th, and more recent RDP and low-cost workers' accommodation (Smuts & Scurr, 2021). The historic settlement of Lanquedoc carries high significance in terms of architectural and landscape significance, as well as social significance (Smuts & Scurr, 2021). In terms of archaeology, historic material from the c20th is likely to be found within the settlement of Lanquedoc itself, but significant material beyond the limits of the village, and within the road reserve, are not anticipated (Smuts & Scurr, 2021).

In terms of the tentative UNESCO recognition, it is important to note that the CWCL is not yet recognised as a WHS, but the Heritage Impact Assessment recommendations align as if it were.

Influence on the proposed development:

There is substantial development potential in the York Farm site which arises from a confluence of the interplay between site and landscape significance and site location and position (Smuts & Scurr, 2020). The relatively lower significance of the surrounding landscape, (relative to the western extent of Boschendal) combined with the lack of intrinsic significance of the materiality, form and fabric of the cottages makes development of this site and these structures viable from a cultural landscape and heritage perspective (Smuts & Scurr, 2020). Further to this, from a social heritage perspective, the location of the site along the ou wapad, makes it a logical site for development in keeping with organic, historic development patterns and strategies across Boschendal Farm and the Dwars River valley (Smuts & Scurr, 2020).

Finally, a degree of synchronicity arises from the proposed use of this site and these buildings to house the Bertha Foundation, and Ngo that focuses on achieving social and environmental justice, and human rights for political and climate activists (Smuts & Scurr, 2020). It has previously been noted that, while not all 1980s Amfarms cottages on Boschendal warrant retention, a sample structure should be retained, largely unaltered, as an example of the type and times that it represents (Smuts & Scurr, 2020). The New Retreat provides a logical and apposite location to achieve this end, and to tell this story, through the retention of a single cottage that is largely unaltered but made good and fit for purpose (Smuts & Scurr, 2020).

The proposed development also respects the need to retain the internal courtyard and does so by retaining it in the proposal and intending to use it for communal activities (which it was used for historically) (Smuts & Scurr, 2020). The proposal makes use of the internal courtyard space for communal activities, with kitchen gardens and private spaces created in the area outside of the ring of cottages (Smuts & Scurr, 2020) which honours the historic vegetable gardens used by the previous occupants. It is further proposed that part of the internal space be made available for producers and traders from the local communities to showcase and sell their items (Smuts & Scurr, 2020), thereby increasing the link between the site and nearby communities.

Internal design and décor would respond to the distinct character of the context through appropriate use of colour texture and materials as well as making use of organic shapes and informal arrangements that reflect the "wilderness" of the context and landscape (Smuts & Scurr, 2020). The variation would be further enhanced through a variety of expression in a way that is fit for the various uses intended for the proposed development (e.g. reception, Lalela, accommodation) (Smuts & Scurr, 2020). The informal and irregular patters in the landscape are also reflected in the proposed landscape plan, which also pays homage to the small vegetable gardens and individual gardens enjoyed by historic residents (Smuts & Scurr, 2020).

The siting of the proposed development along the Ou Wa-pad, as well as the nature of the proposal's connectivity to the communities around it, serve to initiate the re—invigoration and reconnection of the ou wapad, thereby taking steps toward authentic restorative redevelopment (Smuts & Scurr, 2020).

The siting of the proposed potable water pipeline has been deliberately within an area which has already been excavated and so would not have a great potential for significant archaeological material (Smuts & Scurr, 2021). However, in order to protect any potential finds, archaeological monitoring is still required as part of the EMPt.

It should also be noted that the Stellenbosch Interest Group provided comment on the pre-application draft Basic Assessment Report and, in that comment, confirmed their support for the findings of the HIA and recommended that they be endorsed as fulfilling section 38 (3) of the NHRA. Furthermore, they also indicated their support for the hybrid strategy of development such that reception/community centre is retained in largely unaltered form and other cottages are adapted, the low key detailed as indicated in the proposal, as well as the support for avoidance of orthogonal patterns and other landscaping recommendations as per the HIA.

Furthermore, when discussing life on the site, Mr Manuel (the Lanquedoc Ward Councillor) echoed the stories gathered by the Bertha Foundation from those who used to live on site as he grew up nearby and would often visit his "aunt" who had lived on the site (*pers comms*, C. Manuel, 01/02/2021). He told of how there were always chickens, geese, and "bunnies" on the site and shared another memory of living on the site whereby the community used to walk through the wetlands and swim in the rivers and wetlands, and they also used to do a lot of mountaineering on the farm (*pers comms*, C. Manuel, 01/02/2021).

7. Historical and Cultural Aspects

Explain whether there are any culturally or historically significant elements as defined in Section 2 of the NHRA that will be affected and how has this influenced the proposed development.
Section 2 of the NHRA defines "cultural significance" as "aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance".
The response of the proposed development to the cultural and social landscape of the site and its context are discussed above.

8. Socio/Economic Aspects

8.1.	Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.																				
	<p>The site falls within the Stellenbosch Municipality. An economic profile was done for Stellenbosch Municipality by the Western Cape Government (WCG) in 2017. This study was used to inform the information in this section of the BAR.</p> <p>The Stellenbosch municipal area had an estimated population of 176 523 people in 2018 with an estimated five-year growth rate of 8% (2.3% higher than that of the Cape Winelands) (WCG, 2019).</p> <p>A large proportion of the population is of working age (refer to Figure 37). The dependency ratio indicated in Figure 37 describes the ratio of those within the workforce to those depending on them (e.g. children and the elderly) and a higher dependency ratio indicates greater pressure on social systems and delivery of basic services (WCG, 2019). The trend indicates an increase in this ratio.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Children: 0 - 14 Years</th> <th>Working Age: 15 - 65 Years</th> <th>Aged: 65 +</th> <th>Dependency Ratio</th> </tr> </thead> <tbody> <tr> <td>2011</td> <td>35 544</td> <td>112 583</td> <td>7 652</td> <td>38.4</td> </tr> <tr> <td>2018</td> <td>41 354</td> <td>125 042</td> <td>10 123</td> <td>41.2</td> </tr> <tr> <td>2023</td> <td>44 103</td> <td>134 294</td> <td>12 208</td> <td>42.0</td> </tr> </tbody> </table> <p>Figure 37 Age cohorts of Stellenbosch Municipality (source: WCG, 2019)</p> <p>With respect to education, the latest figure on learner-teacher ratio is for 2016 which indicates 32.4. This figure, if it increases could affect learner performance (WCG, 2019) as teachers would be spread more thinly across learners and be potentially unable to assist with certain issues that individuals may have. The learner-teacher ratio has been steadily dropping slightly from 2014. There is also a high level of Grade 12 drop-out rates, with 23% identified in 2016 (WCG, 2019). WCG (2019) indicates that drop-outs are "influenced by a wide array of economic factors including unemployment, poverty, indigent households, high levels of households with no income or rely on less than R515 a month and teenage pregnancies". In 2016, 39 schools were recorded in Stellenbosch, 64.1% of which were no-fee schools. The matric pass rate, which is an access point for learners to enter higher education, was at 86.9% in 2016, which is the highest when compared to the other regions in the Cape Winelands District (WCG, 2019).</p> <p>In terms of health, the municipality has 14 public healthcare clinics (as of 2016) and a coverage of 3.4 ambulances per 10 000 inhabitants (WCG, 2019). HIV/AIDS and tuberculosis cases have been on a decline from 2015 to 2016 and child health has improved with an increase in the immunisation rate, a decrease in the malnutrition rate as well as the neonatal mortality rate (WCG, 2019). Maternal health has been positive in terms of a zero maternal mortality ration achieved in 2016, however delivery rate to women under 18 years has increased from 4.3% in 2015 to 4.5% in 2016, indicating an increase in teenage pregnancies.</p> <p>Stellenbosch's real GDP per capita was at 61,871 in 2016 and higher than the Cape Winelands District (but slightly below that of the Western Cape) (WCG, 2019). Income inequality (indicated by the Gini coefficient) in Stellenbosch is comparatively higher than the Cape Winelands District and Western Cape in general and was at 0.62 in 2016. The Human Development Index (HDI) has enjoyed a general increasing trend in Stellenbosch, which is indicative of improvements in education, housing, access to basic services and health (WCG, 2019). Interestingly, the number of indigent households within the municipality has shown a steady increase from 2014 to 2016, at 6,262 in 2016.</p> <p>Basic service delivery in the municipality aims to ensure that households enjoy a decent standard of living through provision of access to housing and access to services such as potable water, basic sanitation, safe energy sources and refuse removal services (WCG, 2019). There were 52,374 households in Stellenbosch in 2016 and, although the number of formal dwellings has increased it could not match the pace of growth in total household numbers, which</p>	Year	Children: 0 - 14 Years	Working Age: 15 - 65 Years	Aged: 65 +	Dependency Ratio	2011	35 544	112 583	7 652	38.4	2018	41 354	125 042	10 123	41.2	2023	44 103	134 294	12 208	42.0
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¹ https://www.westerncape.gov.za/assets/departments/treasury/Documents/Socio-economic-profiles/2017/wc024_stellenbosch_2017_socio-economic_profile_sep-la_-_22_december_2017.pdf

resulted in 65.1% of houses with access to a formal dwelling (WCG, 2019). Access to piped water (to within 200 metres of the yard) was provided to 98.5% of households in 2016 and, similarly, access to sanitation services (i.e. flush toilet connected to the sewerage system) was at 98.1% of households in 2016 (WCG, 2019). Most households (i.e. 90.9%) had access to electricity as a primary source of lighting in 2016, but access to refuse removal services has been on a steady decline and reached 71% of households in 2016 (WCG, 2019).

Crime in Stellenbosch has been on a decline with respect to murder and sexual offences, while drug-related crimes and burglaries have increased somewhat and were at 1,532 cases (per 100,000 population) and 1,118 cases (per 100,000 population) respectively in 2017 (WCG, 2019). Cases of driving under the influence of alcohol have been on the increase in Stellenbosch with 136 cases in 2017 (WCG, 2019).

Stellenbosch is a key contributor to the economy of the Cape Winelands District, being the second largest contributor with a GDP of R13.5 billion (in 2015) (WCG, 2019). Stellenbosch has a well-developed tertiary sector (note that tourism is part of this), but still receives a significant contribution from the manufacturing sector (WCG, 2019). The sectors achieving above average growth over a ten-year period is the construction sector, the finance, insurance, real estate, and business services as well as the transport, storage, and communication sector, showing continued investment in these sectors (WCG, 2019). WCG (2019) concede that the Stellenbosch municipal area has not yet fully recovered from the recession as five-year average growth rates have been lower than 10-year average growth rates, attributed primarily to the primary and secondary sectors.

Labour and employment in Stellenbosch is summarised by WCG (2019) which indicates that the sectors that contribute the most to the 75 425 jobs within the Stellenbosch municipal area are the wholesale and retail trade, catering and accommodation sector (26.6 per cent), the finance, insurance, real estate and business services sector (15.3 per cent), the community, social and personal services sector (13.0 per cent) and the agriculture, forestry and fishing sector (12.4 per cent). The WCG (2019) economic analysis also indicates that job creation in the local economy is slowing down between 2015 and 2016, highlighting that the agriculture, forestry and fishing, the manufacturing and the transport, storage and communication sectors jointly shed 528 jobs in 2016. Unemployment in the Stellenbosch municipal area was estimated at 11.9% in 2016 (WCG, 2019).

At a local level, the nearest towns/residential areas to Boschendal include Pniel, Kylemore and Lanquedoc. Key statistics from the Stats SA (2011 Census) has been assimilated below to provide a snapshot of each of these communities.

Pniel²

In terms of the 2011 Census by Statistics South Africa the total population of Pniel (refer to Figure 38) is estimated at 1,975 with around 497 households. This averages to a household size of 4 people.



Figure 38 Pniel (source: Adrian Frith- <https://census2011.adrianfrith.com/place/167006> [accessed 17 July 2019])

The dependency ratio for Pniel is 38.8.

The demographic profile is predominantly Coloured (97.7%) and slightly skewed toward female inhabitants (at 50.4% of the population). The sex and age distribution are indicated in Figure 39. Most of Pniel (72.1%) is of a working age, with the bulk of the remaining population being under 15 (Refer to Figure 39). There is, however, an unusually larger than typical proportion of the population in the 40 to 49 age group.

² http://www.statssa.gov.za/?page_id=4286&id=100

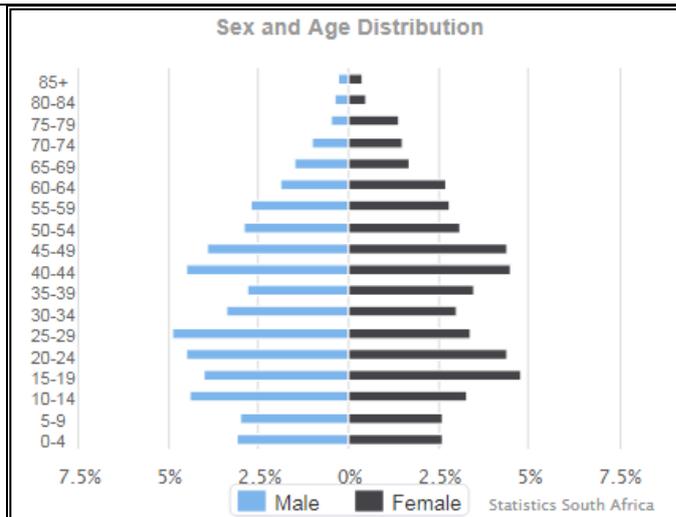


Figure 39 Age pyramid for Pniel (source: Stats SA, 2011)

The following provides key features of the Pniel area:

- The population is predominantly Coloured (97.7%);
- 92% of the population speaks Afrikaans, with English coming in second at 6.7%;
- 51.7% of those aged 20 years and older have completed Grade 12 or higher;
- 12.7% of households have no income;
- 98.6% of households live in formal dwellings;
- 96% of households have access to piped water in their dwelling;
- 97.8% of households have access to a flush toilet connected to the public sewer system;
- 94.6% of households have their refuse removed at least once a week; and
- 98.6% of households use electricity for lighting in their dwelling.

Most households earn an average income of R19, 601 or more, however 10.1% earn less than this and there is a large percentage (12.7%) of households which have no income at all. Most of the population has a qualification of Grade 12 or higher, with a small percentage of people (0.4%) having no schooling at all. Most of the population (61.4%) has access to the internet and 34% has internet access via their cell phones and 24.4% accessing the internet via home/work. 91.1% of households own a cell phone and 58.1% own a computer.

Kylemore³

In terms of the 2011 Census by Statistics South Africa the total population of Kylemore (refer to Figure 40) is estimated at 4,328 with around 994 households. This averages to a household size of 4.35 people.



Figure 40 Kylemore (source: Adrian Frith- <https://census2011.adrianfrith.com/place/167016>[accessed 17 July 2019])

The dependency ratio for Kylemore is 42.7.

The demographic profile is predominantly Coloured (91.7%) and slightly skewed toward female inhabitants (at 50.3% of the population). The sex and age distribution are indicated in Figure 41. Most of Kylemore (70.1%) is of a working age, with the bulk of the remaining population is under 15 (Refer to Figure 41). There is, however, a much larger proportion of the population in the 15 – 24 age group when compared to the other age groups.

³ http://www.statssa.gov.za/?page_id=4286&id=110

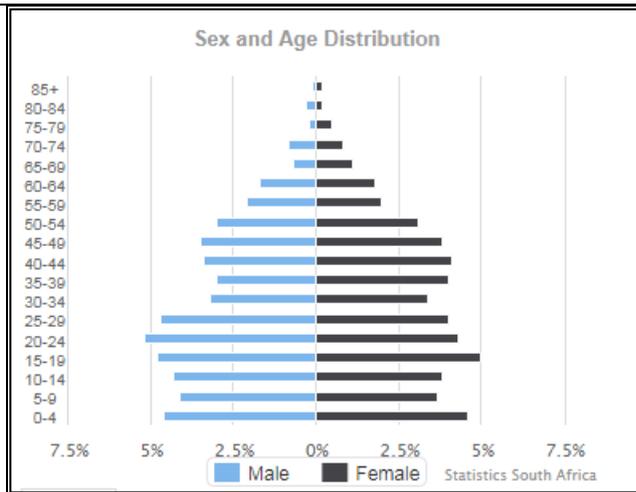


Figure 41 Age pyramid for Kylemore (source: Stats SA, 2011)

The following provides key features of the Kylemore area:

- The population is predominantly Coloured (91.7%);
- 94.6% of the population speaks Afrikaans, with English coming in second at 2.7%;
- 38.2% of those aged 20 years and older have completed Grade 12 or higher;
- 9.3% of households have no income;
- 77.7% of households live in formal dwellings;
- 87.9% of households have access to piped water in their dwelling;
- 92.4% of households have access to a flush toilet connected to the public sewer system;
- 99.6% of households have their refuse removed at least once a week; and
- 97.6% of households use electricity for lighting in their dwelling.

Most households earn an average income of R19, 601 or more, however 12.6% earn less than this and there is a large percentage (9.3%) of households which have no income at all. Most of the population has a qualification of Grade 12 or lower, with a small percentage of people (7.7%) holding a qualification higher than Grade 12. Just over half of the population (53.2%) does not have access to the internet and 32.7% has internet access via their cell phones. 89.6% of households own a cell phone and 36% own a computer.

Lanquedoc⁴

In terms of the 2011 Census by Statistics South Africa the total population of Lanquedoc (refer to Figure 42) is estimated at 4,289 with around 946 households. This averages to a household size of 4.5 people.



Figure 42 Lanquedoc (source: Adrian Frith- <https://census2011.adrianfrith.com/place/167008> [accessed 17 July 2019])

The dependency ratio for Lanquedoc is 44.6.

The demographic profile is predominantly Coloured (76.8%), with Black African (22.4%) being the second largest group. The gender demographics are slightly skewed toward male inhabitants (at 50.7% of the population). The sex

⁴ http://www.statssa.gov.za/?page_id=4286&id=102

and age distribution are indicated in Figure 43. Most of Lanquedoc (69.1%) is of a working age, with the bulk of the remaining population being under 15 (Refer to Figure 43), notably, a large proportion is 0 to 4.

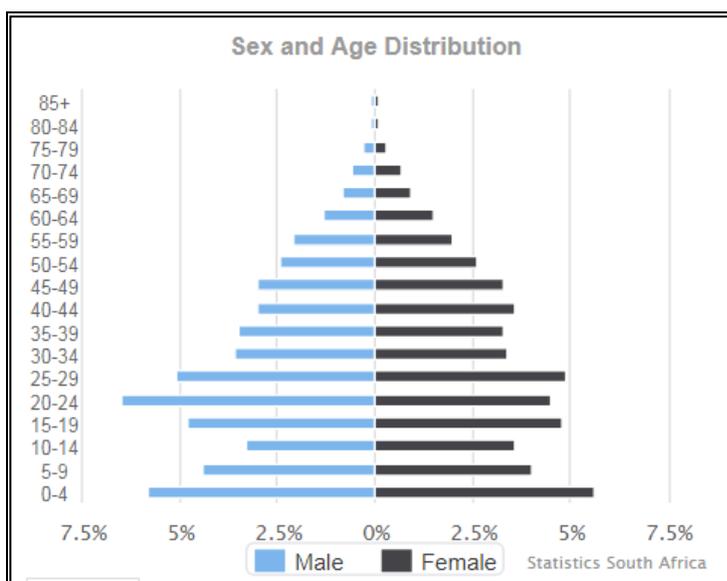


Figure 43 Age pyramid for Lanquedoc (source: Stats SA, 2011)

The following provides key features of the Lanquedoc area:

- The population is predominantly Coloured (76.8%) and Black African (22.4%);
- 79.2% of the population speaks Afrikaans, with isiXhosa coming in second at 17.1%;
- 20.5% of those aged 20 years and older have completed Grade 12 or higher;
- 7.4% of households have no income;
- 85.3% of households live in formal dwellings;
- 77.8% of households have access to piped water in their dwelling;
- 83.4% of households have access to a flush toilet connected to the public sewer system;
- 99.9% of households have their refuse removed at least once a week; and
- 97.9% of households use electricity for lighting in their dwelling.

Most households earn an average income of R19, 601 or more, however 18.9% earn less than this and there is a percentage (7.4%) of households which have no income at all. Most of the population has a qualification of Grade 12 or lower, however higher education is rare and a small percentage of people (4.7%) having no schooling at all. Most of the population (78%) does not have access to the internet and most that do access it 17.8% via their cell phones. 88.1% of households own a cell phone and 13.1% own a computer.

8.2. Explain the socio-economic value/contribution of the proposed development.

With regard to the greater contribution of the proposed development to the economy and general work opportunities which may be created through the realisation thereof, the project would provide a short-term injection of funds into the construction industry during the construction phase, with such a contribution also occurring during the operational phase to a lesser degree (refer to Table 5 for an economic snapshot of the entire proposed development). These would also likely be greater than using the site for crop production as the site has been found to be unsuitable for crop production (Lanz, 2021).

Table 5 Economic Summary of Overall Proposed Development as it relates to Socio-Economic Contribution to the area

What is the expected capital value of the project on completion?	R 34 000 000 Excluding VAT
What is the expected yearly income or contribution to the economy that will be generated by or as a result of the project?	R4.5m of expenditure per annum excl. salaries of R3.4 million/ year
How many new employment opportunities will be created during the development phase?	Approx. 925
What is the expected value of the employment opportunities during the development phase?	R18,500,000.00
What percentage of this will accrue to previously disadvantaged individuals?	Approx. 40%
How will this be ensured and monitored (please explain):	
The EMPr (refer to Appendix H) requires that local labour as well as historically disadvantaged individuals be employed as far as possible. Furthermore, the EMPr (Appendix H) also includes requirements for regular auditing and reporting to authorities, as well as fines for non-implementation of specifications. This specification would be audited, along with all other applicable specifications, for the duration of the construction phase.	

How many permanent new employment opportunities will be created during the operational phase of the project?	33 new jobs equating to R3.4million/year
What is the expected current value of the employment opportunities during the first 10 years?	R35million
What percentage of this will accrue to previously disadvantaged individuals?	100%
How will this be ensured and monitored (please explain):	
The EMPr (refer to Appendix H) requires that local labour as well as historically disadvantaged individuals be employed as far as possible. Furthermore, the EMPr (Appendix H) also includes requirements for regular auditing and reporting to authorities, as well as fines for non-implementation of specifications. This specification would be audited, along with all other applicable specifications, for the duration of the operational phase.	
Any other information related to the manner in which the socio-economic aspects will be impacted:	
Indirect impacts on the general tourism industry and slowly recovering secondary and tertiary economy of the greater Stellenbosch area would also be anticipated as the guest who would be accommodated on site, could make use of other services/establishments within the farm/ area. The local community would also benefit socially from the siting of the proposed development closer to the communities who use (and would use) the facilities with the addition of some employment opportunities as well.	
The majority of the labour in the construction sector would be sourced locally and a large majority of this labour would comprise previously disadvantaged individuals. There is also a recommendation contained within the EMPr to this effect, whereby it requires that local labour be sourced as far as possible and that the majority of the labour force be previously disadvantaged individuals, as far as possible.	
Based on the socio-economic profile of the local community and municipality, the income generation and growth in the desirability of the area would be welcomed.	
8.3.	Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.
The proposed development itself is a Bertha Foundation initiative which would serve groups who advocate for human rights. The Bertha Foundation fights for a more just world by supporting activists, storytellers, and lawyers who are working to bring about social and economic justice and human rights for all (Bertha Foundation, 2019 in NMA, August 2020). The Bertha Foundation is creating a network of global retreat spaces that facilitate access to spaces for those working to advance social justice for all and the proposed development is one such space (NMA, August 2020). The proposed New Retreat would accommodate funders, affiliates, grantees, and friends of the Bertha Foundation as transient guests whose core focus is to support those who are working to bring about this vision (NMA, August 2020). The proposed New Retreat would also accommodate local community groups by facilitating access to programmes funded by the Foundation, such as the Lalela educational arts programme which focuses on children from the local community of Pniël (NMA, August 2020). The proposed development is intended as a transformative space where people can gather, align, and work to embolden the field for social justice (Bertha Foundation, 2019 in NMA, August 2020). The Foundation believes that providing sanctuary and space for organizations, movements, and individuals most marginalized within society is a critical intervention in furthering their work towards social justice (NMA, August 2020). Therefore, there would be local and international groups supported by the proposed development. Over time, Bertha intends implementing a localization strategy to support local community programs.	
The siting of the proposed development along the Ou Wapad, as well as the nature of the proposal's connectivity to the communities around it, serve to initiate the re—invigoration and reconnection of the Ou Wapad, thereby taking steps toward authentic restorative redevelopment (Smuts & Scurr, 2020).	
There would also be some minor economic benefits to the local community in that a small number of people would be employed during the operational phase thereof and they would come from the local community.	
8.4.	Explain whether the proposed development will impact on people's health and well-being (e.g. in terms of noise, odours, visual character, and sense of place etc) and how has this influenced the proposed development.

The proposed development is of a relatively small scale and the use thereof would likely not be continuous (i.e. the facilities would only be utilised when guests book or during certain scheduled periods where local community groups make use of the facilities, or during an event). It is, therefore, unlikely that the proposed development would affect the health and well-being of users of the site such as farm workers or anyone who lives nearby (noting that much of the surrounding area does not house anyone and there are few homes or other buildings adjacent to the site).

The visual impact is anticipated to be positive as the proposed development would make use of a low-key, sensitive design approach that responds to the cultural landscape and social heritage of the site and area (i.e. the sense of place of the farm and the story of the site). Notably, it would also begin to reconnect the community along the Ou Wapad.

The structural integrity and, therefore, safety of the existing cottages would also be improved upon through the hybrid development proposal (i.e. utilising a combination of adaptive reuse, renovations, and refurbishment, as well as demolition and rebuild).

No noise and odour impacts are anticipated, other than some short-term noise resulting from the construction-phase. Operational phase noise from the proposed development would be limited as the nature of the proposed development is such that noise anticipated would be low should any specific events be planned, they and the associated noise limits would be subject to local by-Laws in that regard). From an ecological perspective, though certain fauna may be scared off-site from the noise in the short-term, they would return once construction is complete, as well as even at night because construction would not occur then.

Note that there limited residences and no offices adjacent to the site, as the site is well within the farm. Therefore, human exposure to the site would be limited to farm workers/ employees (either passing through that area or when working nearby, which itself is even very limited as the site is not near working hub/active part of the farm) or to tourists/users of the site moving through the farm (as they would not remain on site for very long and the site is not located in a very active part of the farm).

The proposed potable water pipeline to Lanquedoc would not impact health and well-being of people, given that it would be underground and the fact that Stellenbosch Municipality has confirmed availability of these services for the proposed development. Similarly, the interim pipeline would be below ground, and the water sourced from a private irrigation supply.

9. Existing Structures/ Infrastructure (section added to BAR template by EAP)

6.1.	Was a specialist study conducted?	YES	NO
6.2.	Provide the name and/or company who conducted the specialist study.		
<p>MH&A Engineering Consultants have reported on the existing services on the site and existing buildings have been observed by the EAP and indicated in the site photographs in Appendix C. Nadeson Consulting Services (civils) and Nako Triocon (electrical)) also conducted a farm-wide review of exiting services in 2018/2019 and information from those assessments has been used where relevant.</p> <p>MH&A Consulting Engineers also conducted a structural inspection of the buildings to confirm whether and which components would eb salvageable, refer to Appendix G (h) for the report.</p>			
6.3.	Explain how areas existing structures/ infrastructure have influenced the proposed development.		

	<p><u>Buildings</u> There are eight remnants of old worker cottages, each of which are approximately 147 m² in extent. Some of them have sections of walls still in place, but the interiors are completely removed, and the cottages are empty. Many have no roofs, and the walls are crumbling for several of them. The brickwork above window and door height for the community and reception buildings would not be able to support a roof (MH&A, 2020). They do not have any architectural or aesthetic value (Smuts & Scurr, 2020). The heritage value of the buildings is the social layer and memory that they and their layout (particularly with the communal central courtyard and gardening) hold (Smuts & Scurr, 2020).</p> <p><u>Landscaping</u> Engagement between the Bertha Foundation and the previous York residents highlighted that the areas around the buildings used to be planted with flowers and that there were vegetable gardens in the back yards (NMA, August 2020). The central courtyard was also an important space which the former residents used to commune and gather in (Smuts & Scurr, 2020).</p> <p><u>Access</u> The site lies along the ou wapad, which was historically used as a main road which connected the farm to many local communities.</p> <p><u>Services</u></p> <p><u>Stormwater</u> The site drains in a northerly direction towards the Dwars River (Schoonwinkel, 2020). There is currently no formal stormwater infrastructure at the site (Schoonwinkel, 2020)).</p> <p><u>Potable Water</u> The nearest municipal connection to potable water is the Lanquedoc pump station, located along the Ou Wapad. This, the related condition of authorisation from Stellenbosch Municipality as part of the land use application, as well as the existing roadway leading to the line, has informed the long-term preferred servicing alternative with regard to potable water. The existing irrigation water line in proximity to the site has furthermore influenced the design of the interim potable water supply solution while the permanent solution is pursued.</p> <p><u>Sewer</u> There is no existing functional sewer system for development and the historic pipe and septic tanks systems have been abandoned and will not be rehabilitated (Middelmann & Hurworth, 2021). These existing septic tanks are located in close proximity to the cottages, which is not ideal for future development, as this does not meet the requirements of section 133(2) of the Stellenbosch Municipality Water Services Bylaw (August 2017), which states that soakaways are not permitted within 5 metres of a dwelling (Nadeson, 2019). For this reason, the entire sewer infrastructure requires replacement.</p> <p><u>Solid Waste/ Refuse</u> Refuse generated on the Boschendal Estate is collected by a private company and dumped at a registered site (Schoonwinkel, 2020).</p> <p><u>Electrical/ Energy</u> There is an existing 200 kVA transformer that supplies this area (refer to Figure 7). There is also an existing 11kV Eskom overhead line running along the Ou Wapad is owned by Eskom (<i>pers comms</i>, R. Clark, TRAC, 25/03/2021).</p> <p><u>Telecommunications</u> There is no existing telecommunications infrastructure at the site.</p> <p><u>Response</u> The propose development intents to make use of the existing building footprints as a starting point and to expand as minimally as possible upon them. The historic central gathering space would be honoured through the creation of a new gathering space (as per the landscape concept) and the previous garden practices of flower-planting, use of fruit trees (and others) for shade as well as vegetable gardens would also be incorporated into the landscaping. The existing site extent (i.e. the disturbed area) has been used to guide the extent of the proposed development and the site. The location along the Ou Wapad would also serve to initiate a reconnection of the historic route.</p> <p>Existing services, where possible, would be utilised, however there are upgrades required in certain cases in order to be aligned with municipal by-laws and best practice/ what is most practical.</p>
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SECTION H: ALTERNATIVES, METHODOLOGY AND ASSESSMENT OF ALTERNATIVES

1. Details of the alternatives identified and considered

1.1.	Property and site alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
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Provide a description of the preferred property and site alternative.	
The preferred site is located on a portion of Portion 11 of Farm 1674, Paarl. In particular, it is the portion of the property which contains derelict workers' cottages. The location of the site is depicted in Figure 22 and there is a locality map included in Appendix A1.	
Provide a description of any other property and site alternatives investigated.	
No site or location alternatives have been assessed as the proposed development entails the refurbishment and expansion of existing cottages.	
No routing alternative for the proposed potable water pipeline to Lanquedoc has been considered given that the proposed routing has been deliberately designed to avoid sensitive areas and will have a negligible impact. The same holds true for the interim pipeline which would be located within an existing road/road reserve on the side of the road where wetland areas are not located.	
Provide a motivation for the preferred property and site alternative including the outcome of the site selection matrix.	
The proposed site has been selected on the basis of there being existing derelict cottages present with a view to upgrading and improving upon an existing disturbed footprint rather than a previously undisturbed site. The proposed potable water lines have been planned to be located within existing roadway and/or adjacent to it in a compacted dirt pedestrian pathway.	
Furthermore, the location of the site along the Ou Wapad, coupled with the civic intentions of the proposed development would serve to initiate restorative redevelopment and provide connection between the farm and local communities through a historic route (Smuts & Scurr, 2020).	
Provide a full description of the process followed to reach the preferred alternative within the site.	
Refer below	
Provide a detailed motivation if no property and site alternatives were considered.	
No site alternatives were considered as there are existing derelict cottages already present on the site and it is preferable to make use of sites which have already been disturbed both from an ecological perspective (i.e. it is better than clearing a greenfields site), a land use perspective (first making optimal use of existing structures and transformed sites before sprawling into undeveloped areas), a heritage perspective (i.e. developing in a way which remembers the story of the site and responds to the landscape around it) as well as a general practical and aesthetic perspective (i.e. the visual quality of the site would be improved upon, which would replace the derelict and neglected state which the site holds currently). The intended use of the site for tourist accommodation and facilities, noting there would be a great corporate social investment component, is also better placed on land which cannot produce high yielding crops and the proposed site achieves this as it is not suitable for cultivation (Lanz, 2021). The routings for the proposed potable water pipelines also do not cover any sensitive areas and would result in negligible impacts.	
List the positive and negative impacts that the property and site alternatives will have on the environment.	
This is not applicable as there is only this site which can be considered.	
1.2.	Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred activity alternative.	
The proposed development entails the refurbishment and expansion of existing cottages to tourism accommodation which would sleep a maximum of up to approximately 34 people.	
Provide a description of any other activity alternatives investigated.	
Not Applicable, no activity alternatives were considered.	
Provide a motivation for the preferred activity alternative.	
The re-development of the derelict cottages for tourism and community use would be appropriate as the cottages were previously used for accommodation. The footprint and number of cottages is appropriate for a small, self-contained facility that could be used for guest accommodation as well as conferencing or break-away spaces for discussion and contemplation activities, as well as the support facilities like a kitchen and cleaning rooms. It would provide social support for the local community as certain groups would have a venue to use for their activities and it would refurbish a component of the farm that has been derelict for some time (Smuts & Scurr (2020) state that the removal of works from the Boschendal farm occurred in the early 2000s), thus improving the scenic quality of the area.	
Provide a detailed motivation if no activity alternatives exist.	
No activity alternatives were considered as the cottages are well placed in the farm from a tourism perspective (i.e. far enough within the farm to provide a relaxing, rural accommodation experience and not interrupt or disturb the working aspect of the farm, and also beyond any sensitive environmental aspects of the site, in a comparatively low sensitive cultural landscape than other parts of the farm and to be developed in a manner which responds appropriately to the cultural landscape and social history of the site). There are no workers living in the cottages and have not been for some time (which is evidenced by the derelict nature and also Smuts & Scurr (2020) in Appendix G(d). The cottages would also not be suitable as administration or processing buildings as they are located too far from similar buildings and would not necessarily be the right size.	
With respect to the use of the existing buildings and the preference for tourism accommodation and tourist facilities, the evidence for not considering it as a farm or process-related building is indicated in Figure 44, which illustrates that the administrative and support hub of the farm is largely located on the eastern side, tucked close against Helshoogte Road, while the site is located further from Helshoogte Road, some distance from these hubs. The site is also separated from these areas by a river (i.e. the Dwars River) and so access to the site is not quick and convenient as one has to exit the farm to access the site via Lanquedoc Main Road with a normal vehicle. This is not a convenient location for such administrative functions, and it would not, from a spatial planning and land use perspective, be desirable to spread such a use throughout the farm. The proposed tourist accommodation and tourist facilities make sense from the point of view that the Rhone Manor House and Boschendal Werf (not the subject of this application) are located nearby on the adjacent land parcels to the west and north (Farm 1730 and 1674/10 respectively), thereby consolidating tourist accommodation and tourist facilities in this area of the farm. It would also not be convenient for workers to access the site from the existing administrative hub. There is a low-level crossing over the Dwars River to the north of the site, but the river corridor is heavily vegetated, presenting some personal safety challenges to those making the crossing (NMA, August 2020).	

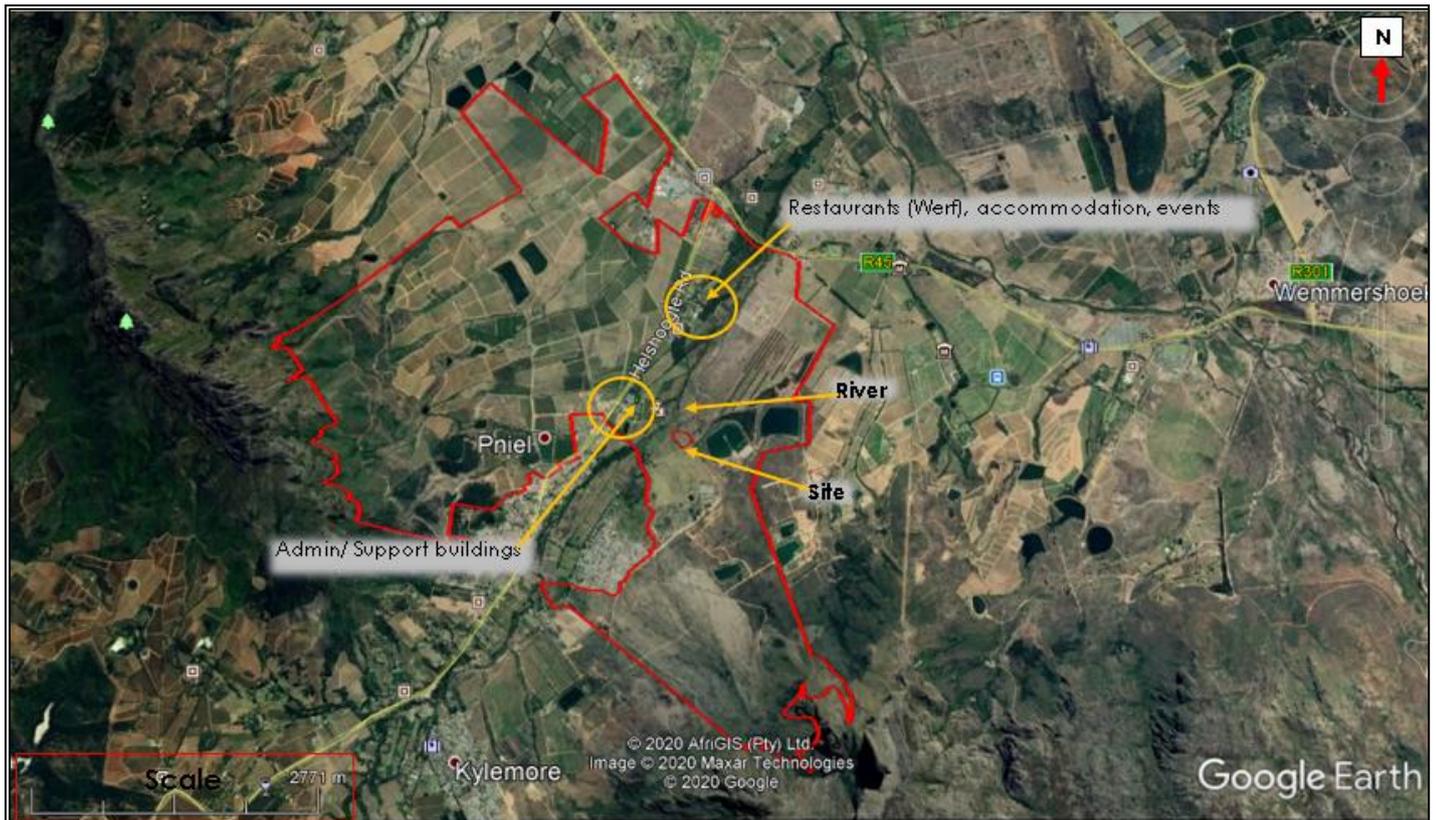


Figure 44 Location of site relative to other support/admin buildings on the farm (created using Google Earth Pro, 2020)

With respect to actively farming the site, rather than using for support, the soil potential of the site is limited and not suitable for cultivation (Lanz, 2021) and so using the site within the existing rights of cultivation would not be the most economical or efficient use thereof.

From a community upliftment perspective, the nature of the proposed development in that it provides space for allies and activists for human rights as well as local community non-profits as well as the fact that it is located on a historic access route (the ou wpaad) would serve to initiate authentic restorative development on the farm and reconnect it with the local and global community. It would be located closer to the local community that would use it (closer than the current Retreat). It is also in synergy with the greater, precinct-level context.

List the positive and negative impacts that the activity alternatives will have on the environment.

Not applicable as only one activity alternative has been considered.

1.3. Design or layout alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts

Provide a description of the preferred design or layout alternative.

The preferred layout alternative is indicated in Figure 1 and Figure 6, as well as Appendix B1 (b) and is referred to as "Alternative 3".

The proposed development entails the development of a "New Retreat", for the Bertha Foundation which would have the capacity to accommodate up to approximately up to 34 overnight guests/attendees.

The existing building footprints of the remnant cottages on site would be used, where possible and the proposed development would comprise of the following buildings:

- Accommodation buildings to accommodate up to 34 overnight guests/attendees, which include bedrooms, bathrooms, a lounge/communal living area and covered outdoor areas/deck space;
- A conference facility which includes a small conference venue and up to approximately two breakaway areas;
- A communal dining and lounge area;
- An administration building with a reception and waiting lounge / library;
- Meeting room(s) for community programmes and a communal library; and
- A kitchen area, with space for staff dining, lockers, and ablution facilities.

Up to approximately 24 parking bays would be included.

There would be a combination of hard and soft landscaping measures applied. Hard landscaping would include an open courtyard and a network of boardwalks, as well as an outdoor landscaped amphitheatre (which would be grassed). Proposed parking areas would also be landscaped, but these would be tucked within further planting to soften the entrance and interface with the ou Wa-pad. Soft landscaping would also be used to bridge scale with the proposed buildings and break-away areas as well as to provide screening and

synergy with the surrounding landscape. Tree lines as well as rehabilitated fynbos corridors would be implemented to provide strong connections to the broader landscape (pers comms, A. Bormans, 29/05/2020). There would be peripheral areas to connect to nature through the provision of a continuous footpath through the rehabilitated fynbos and productive kitchen garden (pers comms, A. Bormans, 29/05/2020). The interface with the historic "Ou Wapad" would be softened with extensive planting. The intention would be for the site to be as self-sufficient as possible, and so a vegetable garden is a major component of the landscape plan. The landscaping would also make use of permeable surfaces as much as possible.

The site would be accessed from the existing Ou Wapad, via the existing access-controlled gate (which would remain).

Stormwater would be managed primarily by infiltration through permeable surfaces (Middelmann & Hurworth, 2021). Surface flow that may be generated by high rainfall events would be allowed to pass through the development by surface escape, without causing flow concentration (Middelmann & Hurworth, 2021). Flood management measures to protect the development from flooding of the adjacent watercourse would be required. These measures comprise the conversion of the existing culvert crossing on Hoof Road to an engineered low level road crossing to contain flood flow safely under and over the new culverts, within the river corridor (Middelmann & Hurworth, 2021). The existing berm on the development side of the watercourse would also be formalised to be continuous, reprofiled and raised. The existing head-cut within the stream would be "flooded" (i.e., water would be allowed to pool therein) so that the erosive cut is less likely to move upstream and there would be some low retaining of the channel side embankments in gabions, as well as floor armouring throughout the structure (Middelmann & Hurworth, 2021).

Potable water supply would in the long-term come from the Stellenbosch Municipality via a connection to their Lanquedoc pump station (Middelmann & Hurworth, 2021). The connection would entail a new, underground 160 mm diameter uPVC link to be installed within the road on Boschendal Estate and within the road reserve along Hoof Road (Middelmann & Hurworth, 2021). The routing of the western segment of the proposed water line would be determined on site but would be limited to the northern side of the roadway. It would either be routed within the northern half of the road (i.e. hard/blacktop) or between the existing hard top and row of gum trees alongside it (there is currently compacted, bare ground presently between the gum trees and hard/blacktop). Capacity for this has been confirmed by the Stellenbosch Municipality (refer to Appendix E16).

In the interim, while the permanent solution is pursued, a temporary pipeline would be constructed to connect into the existing York Dam 300mm diameter irrigation supply line that currently feeds a part of the Boschendal Estate irrigation reticulation. There is an existing "take-off" for water supply to existing houses just off Hoof Road within the York Farm boundary (north-east of the site). The existing connection would be upgraded, and a new 160 mm diameter pipe would be laid to the Retreat. The new pipe route would extend 282 m and be installed within the road reserve on the northern side of Hoof Road (as recommended by Snaddon, 2021 to avoid the York Dam wetland seep). The pipe would cross a perennial stream where approximately 20 m would be fastened to the existing culvert so as not to impact in on the stream. The pipeline will terminate at the entrance of the Retreat. A holding tank and combination sand filter and Ultra-violet water treatment plant will be installed to treat the "irrigation water" to the required quality and standard for Municipal potable water.

The site would be equipped with a conservancy tank of maximum 30 m³ capacity in order to temporarily hold/store the sewage and wash-water on site until off-site disposal occurs (Middelmann & Hurworth, 2021). The wastewater from this tank would be pumped out by a honeysucker as required for off-site disposal (Middelmann & Hurworth, 2021). The siting of these components has been intentionally devised in order to pose the least risk possible on freshwater systems on and around the site. Note that in the long-term, the intention is to connect to municipal supply, but this would be done when capacity is available and approved by the Municipality and would be the subject of a separate application for Environmental Authorisation, should there be any Listed Activities triggered.

The proposed development would be supplied with a 200 KVA (300 Amp three phase) low voltage connection to the new site reticulation (pers comms, R. Clark, TRAC, 25/03/2021). The new supply would be taken from the existing Kylemore Farmers 1 Eskom 11kV line via a new 11kV Tee-off. This would be installed to run across the gravel farm road from the existing Eskom 11 Kv overhead line (pers comms, R. Clark, TRAC, 25/03/2021). The new line would feed a new 11kV/420 Volt 200 Kva pole-mounted transformer, installed on the site and connected to a new 300Amp (200 Kva) three-phase low voltage Eskom bulk supply meter point (pers comms, R. Clark, TRAC, 25/03/2021). It is also the intention to supplement power from the grid with rooftop solar panels in the future (pers comms, R. Clark, TRAC, 25/03/2021).

Refuse generated by the operational phase of the proposed development would be incorporated into existing systems at Boschendal.

A fibre spine is proposed to be installed along Hoof Road in the future, and the development would be equipped with a duct and drawpit system to provide connectivity to all units (pers comms, M. Middelman, MH&A Consulting Engineers, 18/03/2021).

Refer to Figure 6 for the preferred servicing plan as well as to Figure 4 & Figure 5 for the preferred potable water services (i.e. the eventual potable water pipeline to Lanquedoc and the interim pipeline to the existing irrigation supply).

Provide a description of any other design or layout alternatives investigated.

Three development layout/servicing alternatives are formally assessed in this process, namely the preferred alternative (i.e. Alternative 3) and Alternatives 1 and Alternative 2. The alternatives assessed are the same with respect to the building layouts, use of the site and landscape intentions, as well as flood risk mitigation, stream rehabilitation and services for refuse and telecommunications. The alternatives differ with respect to sewer, stormwater, and potable water services. These are indicated in Table 6.

Table 6 Servicing/Layout Alternatives Assessed

Alternative	Project Scope	Sewer	Water	Stormwater	Layout
1	Redevelopment of the cottages for the "New Retreat" to accommodate up to 34 overnight guests with supporting conferencing	Siting of the pumpstation, wastewater treatment tank/treatment package plant (i.e. a tank which would	Several supply alternatives were considered (municipal, borehole, and farm dam), but the final supply had yet to be confirmed. The services	Siting of vegetated swale to the north of the proposed parking area and for a	Refer to Figure 45

	<p>facility, communal lounge and dining area, administration buildings, meeting rooms, outdoor patios and spaces and kitchen and staff areas. Up to 24 parking bays. Hard and soft landscaping to include grassed amphitheatre, parking area planting, central courtyard, tree lines, fynbos gardens and kitchen gardens all in synergy with surrounding landscape.</p>	<p>employ a low energy biological treatment process to treat the wastewater/sewage) of 40 m³ and associated access track all on the north-western "corner" of the site. Treated wastewater would be used for toilet flushing and irrigation of the landscaping on road verges.</p>	<p>layout indicated pumping water to a reservoir (comprising approximately three 10 000 L storage tanks) further south of the site, with the proposed line being located within the existing road limits. No further detail is available for this alternative as feedback from Stellenbosch Municipality in this regard was outstanding at the time of assessment.</p>	<p>short stretch along the stream.</p>	
2	<p>Flood mitigation measures including conversion of the existing culvert on the Ou wapad to an an engineered low level road crossing and reinstatement of berms along riverbanks. River rehabilitation works. 200KVA low voltage electrical connection to the existing Kylemore Farmers 1 Eskom 11kV line. Refuse would be incorporated into the existing system. Telecommunications ducts and drawpit for all units, to connect to future fibre spine along Hoof Road.</p>	<p>Siting of the pumpstation, wastewater treatment tank/ treatment package plant (i.e. a tank which would employ a low energy biological treatment process to treat the wastewater/sewage) of 40 m³ and associated access track to locate the treatment tank/package plant (i.e. the SOG trickling filter component) further from the stream by placing it on the opposite side of the ou wapad, to the south-west of the site. The siting of these components has been intentionally devised in order to pose the least risk possible on freshwater systems on and around the site. Treated wastewater would be used for toilet flushing and irrigation of the landscaping on road verges.</p>		<p>Siting of vegetated swale to the north of the proposed parking area and pulling it away from the stream, which reduces the risk to the watercourse</p>	<p>Refer to Figure 46.</p>
3 (preferred)		<p>Siting of the pumpstation, pipelines, conservancy tank to locate the conservancy tank further from the stream by placing it on the opposite side of the ou wapad, to the south-west of the site. A conservancy tank of 30m³ capacity would be utilised to temporarily hold/store the sewage and wash-water until off-site disposal occurs. The wastewater from this tank would be</p>	<p>Following confirmation of requirements of Stellenbosch Municipality Bulk water would be sourced from the external municipal network in Lanquedoc. An underground 160 mm diameter uPVC link main is proposed to be constructed from a connection point on the Lanquedoc PRV water distribution zone, on the fringe of the Lanquedoc estate, along Hoof Road and into Boschendal (refer to Figure 5). The routing of the western segment of the proposed water line would be determined on site, but</p>	<p>Large areas of permeable surfaces in the parking areas to such a degree that a vegetated swale is not required. The preferred alternative has a larger extent of grassed area (i.e. Grass fix) to improve infiltration.</p>	<p>Refer to Figure 5 and Figure 6.</p>

		<p>pumped out by a honeysucker as required for off-site disposal. The siting of these components has been intentionally devised in order to pose the least risk possible on freshwater systems on and around the site. Note that in the long-term, the intention is to connect to municipal supply, but this would be done when capacity is available and approved by the Municipality and would be the subject of a separate application for Environmental Authorisation, should there be any Listed Activities triggered.</p>	<p>would be limited to the northern side of the roadway. It would either be routed within the northern half of the road (i.e. hard/blacktop) or between the existing hard top and row of gum trees alongside it (there is currently compacted, bare ground presently between the gum trees and hard/blacktop). A bulk meter would be required at the Boschendal boundary, proposed at a convenient location outside the security gate and to the approval of the local authority, and the pipeline would continue as a private main up to the Retreat development, on Ptn 11 of Farm 1674. The pipeline would bridge various stormwater culverts by surface fixing. This link main is in principle in accordance with the alignment proposed in the GLS capacity analysis report and accompanying schematics for the development, dated 5 December 2020, and has been formally endorsed by confirmation of capacity by the local authority. The GLS report proposes a demand of approximately 13 kL per day for the development, and this capacity is available in the network. The main would terminate at the development, and a supply off this main would provide potable and fire water to the Retreat. This supply would be managed through a private sub-meter and would separate on-site into a 110 mm uPVC Class 16 fire ring and a 50 mm uPVC Class 12 domestic system.</p> <p>While the above option is pursued, a temporary pipeline would be constructed to connect into the existing York Dam 300 mm diameter irrigation supply line that currently feeds a part of the Boschendal Estate irrigation reticulation. There is an existing "take-off" for water supply to existing houses just off Hoof Road within the York Farm boundary (north-east of the site). The existing connection would be</p>		
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upgraded, and a new 160 mm diameter pipe would be laid to the Retreat. The new pipe route would extend 282 m and be installed within the road reserve on the northern side of Hoof Road and turn north towards the connection point while continuing within the road reserve. The pipeline will terminate at the entrance of the Retreat. A holding tank and combination sand filter and Ultra-violet water treatment plant will be installed to treat the "irrigation water" to the required quality and standard for Municipal potable water. The internal reticulation would be the same as for the permanent supply.



Figure 45 Alternative 1 Servicing Layout (source: Schoonwinkel, 2020)

management system and obliges with the potable water connection requirements of the Stellenbosch Municipality (as indicated by the Municipality in the land use application). The proposed potable water pipeline to Lanquedoc and the temporary pipeline to the irrigation line would be located within existing road and/or the disturbed area adjacent thereto, outside of any sensitive areas, hence this is considered to be acceptable from an environmental perspective.

The proposed layout has been crafted in such a way as to contain the proposed development both within the existing buildings as well as within close proximity to them and to undertake a hybrid development approach with respect to adaptive reuse, refurbishment and demolition and rebuild which serves to retain the important memory of the site, which fits into the landscape and does not overemphasise unnecessary aspects (such as the old buildings which hold no heritage value). Through this approach, the proposed development aims to concentrate the hard elements of the development footprint within a contained area and then to landscape the surrounding site to respond to the story of the site and the people who lived there before by incorporated kitchen gardens, a shaded central courtyard and wildflowers (which is addressed through the large fynbos rehabilitation component), which also serves the ecological diversity of the site and would in fact improve upon the status quo. The planting list has been reviewed by and received input from a botanist to provide further ecological rigour to the landscaping. The landscaping would also respond to the dramatic cultural landscape and key wilderness aspect through irregular and fluid planting and layout of plants so as to avoid rigid and over-structured patterns.

Provide a detailed motivation if no design or layout alternatives exist.

Not Applicable as layout/servicing alternatives (i.e. Alternative 1 and Alternative 2) are assessed.

Furthermore, it should be noted that there have been other layouts and design alternatives were not formally assessed but scoped out for various reasons.

With respect to layout, the initial layout and footprint that was provided in the NOI was revised in order to keep the additional components of the buildings tucked in closer to the existing footprint. Refer to Figure 47.



Figure 47 First Draft Conceptual Site Development Plan, as included in the NOI (source: Design Scope, 2020)

Potable water line routing

The routes for the potable water lines have been devised through information of environmental sensitivities provided by Snaddon (2021) and Helme (2021) and so has responded to these by routing it in areas which are not environmentally sensitive. Further, it would also be in areas that are not sensitive from a heritage perspective, where archaeological finds are not likely (Sumts & Scurr, 2021). For the permanent supply, the route falls within existing road and where it would need to go outside of the roadway, it would be in an area adjacent to the road (this is the case for the section of Hoof Road where the line of gum trees are, in the southern segment nearest the pump station). Therefore, there is no reason not to accept this routing, given how insignificant the environmental impacts associated with it would be. The

same holds true for the temporary pipeline which would run within an existing roadway, and on the northern side of Hoof Road so as to avoid the York Dam wetland seep south of the road.

Sewage and Access Track (applicable to Alternatives 1 and 2- those not preferred- only)

In terms of design, various surfacing options for the track to the sewage pump were workshopped with the various members of the project team and the freshwater ecologist. The requirements from an ecological, engineering and aesthetic (visual and heritage) had to be balanced with the ecological requirements being one of maximum permeability, the engineering requirement being the need to be structurally sound enough to bear the necessary load of the trucks that empty the pump and require limited maintenance, and the aesthetic requirements being that the track would blend into the landscape (which is also a heritage issue as the landscape is an important cultural landscape).

Grass blocks were considered, but these were found to be unacceptable from an aesthetic point of view, a gravel road was also considered, but this was not ideal from an engineering perspective. The proposed solution of a permeable cover such as gravelfix is one which meets all three requirements from an ecological, engineering, and aesthetic perspective.

Notwithstanding, the preferred alternative (i.e. Alternative 3) does not require a track at all, which necessitates less hard landscaping near the wetland buffers.

Redevelopment Schemes Considered

Three alternative strategies have been considered as possible redevelopment schemes for York Farm cottage and each has been evaluated in terms of merit, applicability, and feasibility in terms of heritage and the needs of the proposed facility (Smuts & Scurr, 2020). These include:

- Adaptive reuse/interpretation
- Renovate and refurbish
- Demolish and rebuild

Adaptive reuse/ Interpretation

Where adaptive reuse is conventionally employed, the building itself is usually robustly built, and holds intrinsic architectural, aesthetic, or historic significance (Smuts & Scurr, 2020). In these instances, the new intervention should serve to enhance and emphasise the old fabric and form (Smuts & Scurr, 2020). Given that the existing buildings do not hold aesthetic or architectural value, the general approach of adaptive reuse is less appropriate, but the approach can aid in retaining the authenticity and memory/social history of the site (Smuts & Scurr, 2020). This approach requires a careful balance between allowing the buildings to be functional, usable and durable, without over-emphasising the importance of the building/structure itself (given that the importance does not lie in the building, but rather the story that is was part of) (Smuts & Scurr, 2020). While this strategy holds the potential to acknowledge the social history of the site and retain and reframe that memory, there is a great risk of the approach affording greater meaning (i.e. wrongly elevating the meaning) to the remnant structures than is relevant (Smuts & Scurr, 2020). This approach is not favoured by the Applicant from a financial and aesthetic perspective.

Renovate and Refurbish

The current state of the buildings in terms of alignment with climatic conditions (placement) as well as the derelict state make renovation and refurbishment challenging for the proposed development. Typically, renovation and refurbishment can breathe new life into old structures, and ensure their ongoing maintenance and upkeep, but undertaking renovation work needs to be done in a considered manner to avoid gentrification and sanitising of structures and sites, which often is a typical (even if unintended) result of such efforts (Smuts & Scurr, 2020). To achieve this, work would need to remain low-key and should respond to the particular site, structure, and precinct in each instance to avoid losing authenticity, meaning and significance. Any attempts to alter extant material to suit a predetermined aesthetic or narrative that is not based on the specific history and location at hand must be avoided (Smuts & Scurr, 2020). If properly executed, this approach could be carried out in a respectful manner and low-key interventions would provide a way to showcase Boschendal's extensive and varied history of settlement and development, but the importance of sustaining the cultural landscape with the proposed development cannot be overstated (Smuts & Scurr, 2020).

Demolish and Rebuild

Demolition of the existing cottages in their entirety can be considered as the cottages are in poor condition, have been poorly constructed and there is no intrinsic significance invested in their built form or fabric (Smuts & Scurr, 2020). This approach could allow for opportunity to enhance the significance of the precinct and provide maximum value for the occupants and users of the site (Smuts & Scurr, 2020). For this site, the retention of the layout is important as the courtyard is important for the retention of the memory of the site and also to respect the past and be appropriate for future use (Smuts & Scurr, 2020). New builds can restore or enhance significance, and meaningfully contribute to the continuation of development processes that have shaped the cultural landscape to date, but demolition is costly and takes time and could risk stripping the site of social significance, meaning and memory (Smuts & Scurr, 2020).

While these were not formally assessed, the pros and cons of each of the above approaches have been considered and the proposed development opts to implement a hybrid of those approaches (i.e. assimilation of all alternatives rather than choosing one approach) which allows for optimal use of the site and an approach which would yield a positive heritage outcome (Smuts & Scurr, 2020). Given that there are particular needs for the Bertha Foundation such as areas for communal and group activities including performative events and story-telling, private areas of refuge and peace, some limited accommodation and catering/dining and conference facilities, the design needs to accommodate a variety of spaces (Smuts & Scurr, 2020). The adaptive reuse strategy would be adopted for the proposed reception and community buildings which would be restored and left largely unchanged (Smuts & Scurr, 2020). The renovate and refurbish strategy would be employed for the propose accommodation block which would include demolition and rebuilding of discrete units closely following the footprints of the existing structures (Smuts & Scurr, 2020). The demolish and rebuild approach would be used for the proposed conference facility as the existing structures would be demolished with a rebuild in a similar footprint (Smuts & Scurr, 2020). These alternatives have also been informed by a structural assessment of the buildings which advises on the structures which could and would not be able to remain (MH&A, 2020).

Note also, that it is not viable from a social history perspective, to develop a layout alternative that does not contain the central courtyard and so the use of the existing buildings and the need for the courtyard guided the proposed development layout to marry the optimal ecological and heritage opportunities for the site and structures thereon.

List the positive and negative impacts that the design alternatives will have on the environment.

These are listed in Table 7.

Table 7 Positive vs Negative Impacts of Preferred Alternative when mitigation is applied

Phase	Positive		Negative	
	Impact	Significance	Impact	Significance
Construction	Socio-economic: Generation of local economic stimulus	Medium	Nuisance Impacts: Noise and Dust	Very Low
	Heritage- Archaeology: Impacts are possible to subsurface remains, should these occur, during developmental stage through trenching and earthmoving activities related to construction activities.	Minor Low if it contributes to site identification	Visual: Adverse visual/ aesthetic impacts	Very Low
	Heritage- Architecture: The cottages hold no architectural significance and no impacts will arise. Unsympathetic alteration could, however, result in the loss of a layer of the farm's history as expressed in the variety of architectural styles present on the farm.	Low	Natural Resources: Depletion of Natural Resources through use as material in the development/construction phase	Very Low
	Heritage- Landscape: Inappropriate landscaping interventions will interfere with the ability of the new development to sit in the landscape in an authentic, sympathetic manner, which is crucial to retaining the significance of the cultural landscape.	Low	Traffic: Traffic Congestion on local road network during construction	Very Low
	Heritage- Social: Redevelopment of former workers' cottages risks erasing traces of those people's lives and labour from the Boschendal landscape, negatively affecting the authenticity of the farm as a heritage site.	Medium	Traffic: Effect on LOS of local road network during the operational phase (Some minor congestion could be experienced during morning peak along the local road network, or a slightly longer waiting period to cross the Dwars River Bridge in the morning peak)	Low
			Freshwater: Leakage or spillage of fuels, oils, etc. from construction / demolition machinery – this would lead to pollution of the wetlands or stream.	Low
			Freshwater: Presence of construction / demolition teams and their machinery on site – this may lead to noise and light pollution in the area, which will disturb aquatic and terrestrial fauna and flora.	Low
			Freshwater: Construction or demolition activities close to the wetlands or stream will lead to the loss of natural vegetation cover, and subsequent loss of biodiversity.	Low
			Freshwater: Construction or demolition activities close to the wetlands or stream may lead to an increased input of mobile sediments, especially during the wet winter months when rain and runoff may cause erosion and sedimentation.	Low
			Freshwater: Topsoil or sand brought onto the site, for filling and landscaping can lead to the	Low

			introduction of alien or invasive seedbanks.	
			Heritage- Archaeology: Impacts are possible to subsurface remains, should these occur, during developmental stage through trenching and earthmoving activities related to construction activities.	Medium (-) or minor Low (+) if it contributes to site identification
Operation	Heritage- Architecture: The cottages hold no architectural significance and no impacts will arise. Unsympathetic alteration could, however, result in the loss of a layer of the farm's history as expressed in the variety of architectural styles present on the farm	Low	Resource- use: Depletion of resources through use of resources such as energy and water and production of waste as a result of domestic activities	Very Low
	Heritage- Landscape: Inappropriate landscaping interventions will interfere with the ability of the new development to sit in the landscape in an authentic, sympathetic manner, which is crucial to retaining the significance of the cultural landscape.	Low	Freshwater: Stormwater discharge into natural areas – water quality impacts.	Negligible
	Heritage- Social: Redevelopment of former workers' cottages risks erasing traces of those people's lives and labour from the Boschendal landscape, negatively affecting the authenticity of the farm as a heritage site.	Medium	Freshwater: Stormwater discharge into natural areas – water quantity impacts.	Negligible
	Socio-economic: Generation of local economic stimulus in perpetuity (Creation of employment opportunities as a result of operation of the proposed development. Note that additional indirect stimulus as a result of attracting more tourists to the area would also result.)	Medium	Freshwater: Proximity of buildings and human activity to the wetlands and Dwars River. This may lead to local disturbance of fauna and flora, through noise, light, trampling, etc. Fauna may move away from the site.	Low
	Freshwater: Disturbance of soils for landscaping / maintenance of gardens/agricultural activities. Alien or invasive seeds and seedlings may be transported onto site. Alien vegetation is well adapted to establishing on previously disturbed soils and road verges.	Low	Ecological- Freshwater: On-site treatment of wastewater – impacts on water quality	Negligible/ Low
	Improved Terrestrial Biodiversity	Low ⁵		

1.4.	Technology alternatives (e.g., to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred technology alternative:	
<p>No technology alternatives were formally assessed, however the best practice measures in terms of resource use efficiency would be employed during the planning, construction, and operation of the proposed development. This would be controlled by the relevant specifications contained in the EMPr (refer to Appendix H) as well as any conditions of authorisation stemming from this Basic Assessment process, the water licensing/registration requirements, and town planning process. Note that the use of rooftop solar panels is also intended in order to reduce the demand on the power grid (given that the proposed development would be supplied by Eskom).</p> <p>Furthermore, in order to keep abreast of best practice in sustainable building methodologies, alternative building methodologies are also being explored by the developer. For example, where buildings need to be demolished and rebuilt on the same footprint, they would consider making use of LSF or timber frame construction.</p> <p>Note that, while the use of a conservancy tank as opposed to a sewage package plant may be considered alternative technologies, they have been discussed under the design/layout alternatives section. The alternatives have been assessed.</p>	
Provide a description of any other technology alternatives investigated.	
Not applicable	
Provide a motivation for the preferred technology alternative.	
Not applicable	

⁵ No formal impact assessment was conducted, but Helme (2019) confirms that positive impact would result from the fynbos rehabilitation and restoration of habitat.

Provide a detailed motivation if no alternatives exist.	
<p>The only technology alternatives which were considered relate to the provision of sanitation services. Given that septic tanks and soakaways are currently on the site, the possibility of retaining (and repairing, where necessary) was considered, however it was scoped out as the soakaway system is not functioning appropriately and would have to be replaced, and two of the soakaways are also located too close to existing buildings and the proposed expansion (the Stellenbosch Municipality Water Services By-Law of August 2017 requires that French drains, soak pits or similar should not be located closer than 5m to any dwelling and that a septic tank or other sewage treatment plant must be located a minimum of 3 m from buildings). Therefore, it was elected to propose a more modern solution.</p> <p>Furthermore, it has been confirmed by the Stellenbosch Municipality on other projects on the farm that septic tank and soakaway systems are no longer considered an acceptable method of dealing with sewage.</p> <p>Therefore, the conservancy tank is proposed as the preferred alternative. This is not formally assessed as the retention of existing septic tank and soakaway system is not a viable consideration.</p> <p>Given that the nature of the proposed development is tourism accommodation, there is not a significant opportunity for the consideration of alternative technologies (i.e. there are no chemical, industrial, mechanical, etc. processes associated with this proposal). However, aspects of the proposed development where efficient technology may be employed have been considered and examples of a suitable energy mix are included in the EMPr. The proposal also makes consideration of roof solar panels to make use of renewable energy, at a later stage. The proposal also considers a best-practise sustainable building approach. Note, however, that none of these have been formally assessed in this process.</p> <p>Specifications have been included in the EMPr (refer to Appendix H) to provide for the most efficient use of resources.</p>	
List the positive and negative impacts that the technology alternatives will have on the environment.	
This is not applicable given that no formal technology alternatives have been assessed, however the best practice measures included in the EMPr would serve to mitigate adverse impacts and best practice in terms of the Stellenbosch Municipality Water Services By-Law would be employed.	
1.5.	Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred operational alternative.	
No alternative operational activities were considered, particularly given that there are limited sensitivities related to the site and proposal, and that it would convert derelict existing infrastructure into something that provides funding to further support the operation of Boschendal as a whole and that would attract tourists to the area.	
Provide a description of any other operational alternatives investigated.	
Not applicable	
Provide a motivation for the preferred operational alternative.	
The preferred operational alternative would be the use of the facilities for tourist accommodation and community use, as is the case currently with the existing Retreat.	
Provide a detailed motivation if no alternatives exist.	
The operational use of the facility for other farm-related activities would not be ideal and is details in section H1.2 above.	
List the positive and negative impacts that the operational alternatives will have on the environment.	
No operational alternatives were formally assessed; therefore, it is only the positive and negative impacts of the preferred alternative that would be relevant in this case (refer to Section H 1.3, Table 7 above). A summary of all impacts is provided in Table 8 and Table 9.	
1.6.	The option of not implementing the activity (the 'No-Go' Option).
Provide an explanation as to why the 'No-Go' Option is not preferred.	
To understand why the no-go option is not preferred, the no-go alternative must first be described. <p>Given that the site is located within an existing farm portion, there are already certain land uses ascribed to it. Therefore, the no-go alternative comprises of the development on site within existing land use rights, which are already in place across the affected farm portion. This alternative has been formally assessed in this report.</p> <p>With respect to existing rights, the site is zoned Agriculture and Rural Zone in terms of the Stellenbosch Municipality Zoning Scheme By-law.</p> <p>The no-go alternative entails the continued use of the site within existing land-use rights for the affected farm portion. This could then include primary uses permitted in terms of its Agricultural and Rural Zoning in the Stellenbosch Municipality Zoning Scheme By-law, including:</p> <ul style="list-style-type: none"> • Agricultural building (≤2000 m²) • Agriculture • Dwelling house • Forestry • Natural environment • Occasional use (one event/year) • Private road • Polytunnel (≤2000 m²) • Second dwelling • Employee housing (one unit) 	

The current zoning would permit agricultural uses on the site (and on the farm portion within which the site is located) such as grazing and crops, and would also permit refurbishment of the cottages utilising the existing structures for agricultural purposes only (i.e. employee housing), but on the other hand not for tourist accommodation and tourist facilities which would necessitate a land use application to the Stellenbosch Municipality to grant its Consent for the establishment of these land uses (NMA, 01/09/2020).

Therefore, when considering land use planning legislation as well as the EIA Regulations, as amended, the no-go alternative may include any combination of the following activities on site:

- Use of the existing cottages (in their current footprint) as farm accommodation or any other farm-related use like storage or administration;
- Use of the site for cultivation (which does not involve the release of GMOs);
- Use of the site for breeding of animals (which does not involve the release of GMOs), below the following thresholds:
 - 20 square metres per large stock (i.e. horses) and less than 500 in total;
 - 30square metres per crocodile and less than 20;
 - 8 square metres per small stock unit (e.g. pigs, chickens, etc.) and less than 1000 in total, unless pigs are kept which would then be less than 250;
 - 3 square metres per rabbit and less than 500;
 - 250 square metres per ostrich/emu and less than 50.

Further to the above, it should be noted that all necessary rights for agricultural use are in place and:

- Thresholds in the no-go/existing rights alternative description are all below Listed Activity thresholds;
- There is a WUL in place for any irrigation required on the entire farm;
- Agricultural use is permitted anywhere on the farm (within the limits of certain NEMA and flood-line rules- and is permitted on this site because of its zoning;
- No further detailed approval for further plans would be required for cultivation, breeding, and concentration of animals;
- While building plan approval from Council would be required for certain structures (e.g. refurbishment of the cottages for worker accommodation, agricultural building, dwelling house, etc.), this is at a more detailed level and such structures are still permitted under the rights currently held by Boschendal for this farm portion.

Given that there are different implications of the which existing rights use is implemented for the freshwater ecosystem, two scenarios have been assessed by Snaddon (2021), namely:

- **No-go Alternative 1:** this is the best case scenario, which would entail renovation of four of the eight buildings (those that lie outside the 32m NEMA buffer for the stream) for farm worker accommodation, and the remaining land is left as is (the remaining cottages would not be demolished); and
- **No-go Alternative 2:** this is the worst-case scenario, which would involve the cultivation of the full site and removal (demolition) of all buildings. It must be noted that this alternative is unlikely, due to the poor quality of the soil on site.

1.7.	Provide an explanation as to whether any other alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist.
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No further alternatives have been considered.

1.8.	Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.
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The proposal (i.e. the preferred alternative) comprises a combination of refurbishment as well as expansion upon existing infrastructure and take a hybrid approach for development in that it would apply a combination of adaptive reuse, renovation and refurbishment, and demolition and rebuilding where the employment of these are most appropriate and responsive to the context and social history of the site. There are eight derelict cottages on the site which would be converted into tourist accommodation and the proposed layout would honour the existing layout which brings with it the social heritage of the site.

The preferred development alternative is for Alternative 3 of the layout/servicing for development a portion of Portion 11 of Farm 1674, Paarl, which provides tourist accommodation and associated facilities and services infrastructure to accommodate up to approximately 34 overnight guests/attendees.

The landscaping proposed would comprise a combination of hard and soft interventions, with a central courtyard, a series of footpaths and/or boardwalks throughout the site as well as a grassed amphitheatre. Planting would make use of environmentally appropriate species of fynbos and trees and a large area would be fynbos rehabilitation. There would also be "kitchen gardens" which would serve as food gardens to be used in the kitchens to cater for guests/ attendees.

All proposed additions and alterations would change the footprint of the built area from 1,182.9 m² to up to 6,682.9 m², resulting in a total proposed expanded footprint (i.e. hard structures) of up to 5,500 m², with the overall site footprint (which includes soft landscaping and an indigenous landscaping component of approx. 6,560 m²) being 1.88 Ha.

The no-go option is not preferred from an agricultural perspective as the site has limited soil potential and is not suitable for cultivation (Lanz, 2021). There is no preference from a terrestrial ecology perspective, however the proposed development would provide an improvement on the status quo with the fynbos rehabilitation component. Given that all three layout/servicing alternatives have the same impact from a heritage perspective (noting that the routing of the potable water line has no significant heritage impact), any of them is preferred and the design strategy of renovation and refurbishment, would retain the authenticity of the built form through low key interventions that ensure the final development is modest in scale and mass. The mitigation measures would also ensure that the form and fabric of the structures would not be elevated to significance they do not hold, nor would they be renovated beyond recognition. This would be preferred over no development, from a heritage perspective.

From an aquatic ecology perspective, the no go alternative 1 would be most preferable as the ecological impacts would be lowest, however Snaddon (2021) states that the preferred development alternative is preferred as all adverse impacts can be mitigated to low significance, and although all development alternatives considered are capable of mitigation to low impact, Alternative 3 would have marginally lower impacts on aquatic ecosystems and there would also be a single positive impact in terms of landscaping rehabilitation.

With respect to the no-go alternative, the site is located within a working farm which is zoned for such use and already has existing land use rights allocated to it, which the Applicant may develop within without obtaining any authority approval. This is the reason that the "existing rights" alternative was assessed as the no-go alternative. In this sense, "no-go" does not refer to a complete absence of development, but rather to not developing the proposed development and rather developing agricultural-related facilities which are already allowed on the farm portion.

The proposed development is preferred over the existing rights alternative for the following reasons:

- The baseline conditions of the site are such that there are limited terrestrial environmental/ecological sensitivities on site and that aquatic ecological sensitivities can be avoided to acceptable levels. Heritage/cultural conditions are also conducive to the proposed development and would yield positive impacts if implemented with care (and as per the mitigation measures prescribed by Smuts & Scurr (2020)). In general, adverse impacts associated with either development would be low and there would be positive impacts from an architecture, landscape and social perspective, as well as from a terrestrial ecology perspective, and even an aquatic ecology perspective with regard to the landscaping component which includes fynbos rehabilitation.
- There are derelict buildings on site already which would better serve the farm in the form of tourism accommodation and socially beneficial uses (which is located nearby the local community), rather than having support buildings located well within the farm, far from other such operational infrastructure and separated from those hubs by a river which prevents easy access thereto.
- The proposed use of the site would be better than using the site for farming as the agricultural sensitivity of the site has been found to be Medium and not recommended for crop production (Lanz, 2021). The employment opportunities created would likely have some minor benefit to the local communities. The cost of establishing the cottages would be relatively lower on the site, given the existing cottages, when compared to any other site. The existing rights alternative would likely not result in any new employment opportunities and unsuitable crop yields or greater expenses to make the land better suited for crop production.
- The anticipated social benefits of providing a space for human rights and environmental activist groups as well as to provide space for local community groups that aim at improving the lives of the people in the area would be positive and this would not be possible with the existing rights alternative. The location of the site is also meaningful as it lies along the ou wapad and in close proximity to the local community which would use it.
- Use of the site for typical agricultural activities could potentially require the demolition of the existing cottages to make space for grazing or crops, which is not desirable given that they provide an opportunity for tourism and community use.
- The principle of 're-use' and rehabilitation and/or refurbishment of existing derelict structures is a primary planning and design principle.

2. "No-Go" areas

Explain what "no-go" area(s) have been identified during identification of the alternatives and provide the co-ordinates of the "no-go" area(s).

Stream 10 and two wetlands and their ecological buffer areas are to be considered no-go areas, but for when specific aspects of the development proposal are constructed therein. The same applies to Stream 11 and the associated seep, which must be kept in mind during the construction of the proposed potable water line to Lanquedoc, and Stream 10 and the York Dam wetland seep when the temporary pipeline is constructed.

For the operational phase, the activities within those areas are to be restricted to the limits of the flood protection measures, footpaths, service track (for Alternatives 1 and 2 only, there is no track in Alternative 3), amphitheater and river rehabilitation and maintenance. In terms of the potable line to Lanquedoc, there are no operational considerations to abide by as the line would be underground.

The stream and wetlands indicated in Figure 25 and Figure 27 have been duplicated in Figure 48 and Figure 49 to provide key coordinates. For construction of the water line to the reservoir (for Alternatives 1 and 2 only), anything beyond the existing road is a no-go (refer to Figure 49), noting that some sections of the existing road are within the ecological buffer for the stream.

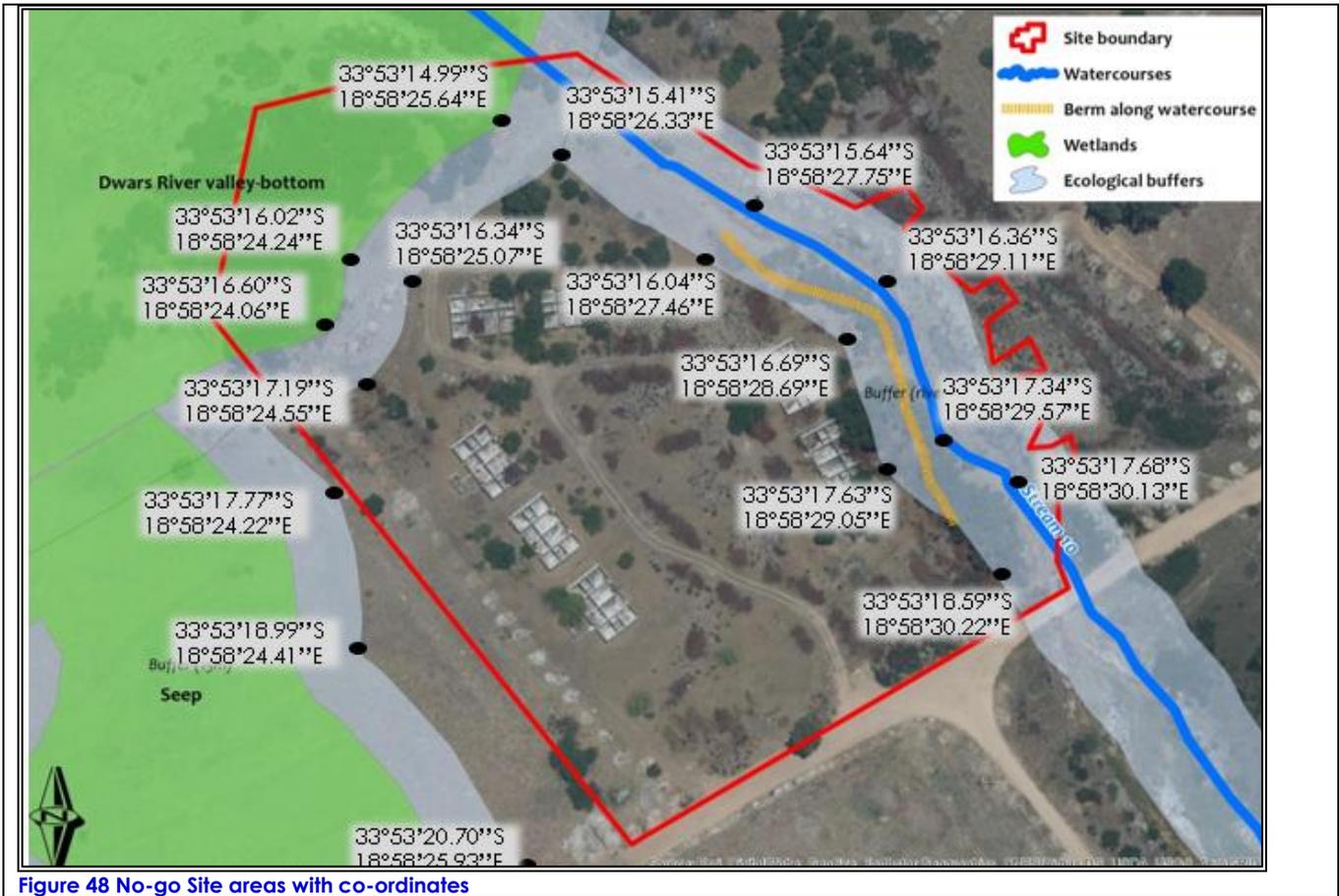




Figure 49 No-go areas along water line with co-ordinates (Alternatives 1 and 2 only)

Figure 50 depicts the no-go areas associated with the proposed potable water line for Alternative 3 (the preferred alternative), namely any areas either side of the existing roadway, with the exception of the southern segment near Lanquedoc where the no-go area is limited to all areas adjacent to the eastern edge of the existing road. Stream 11 and all wetlands and seep are no-go areas.

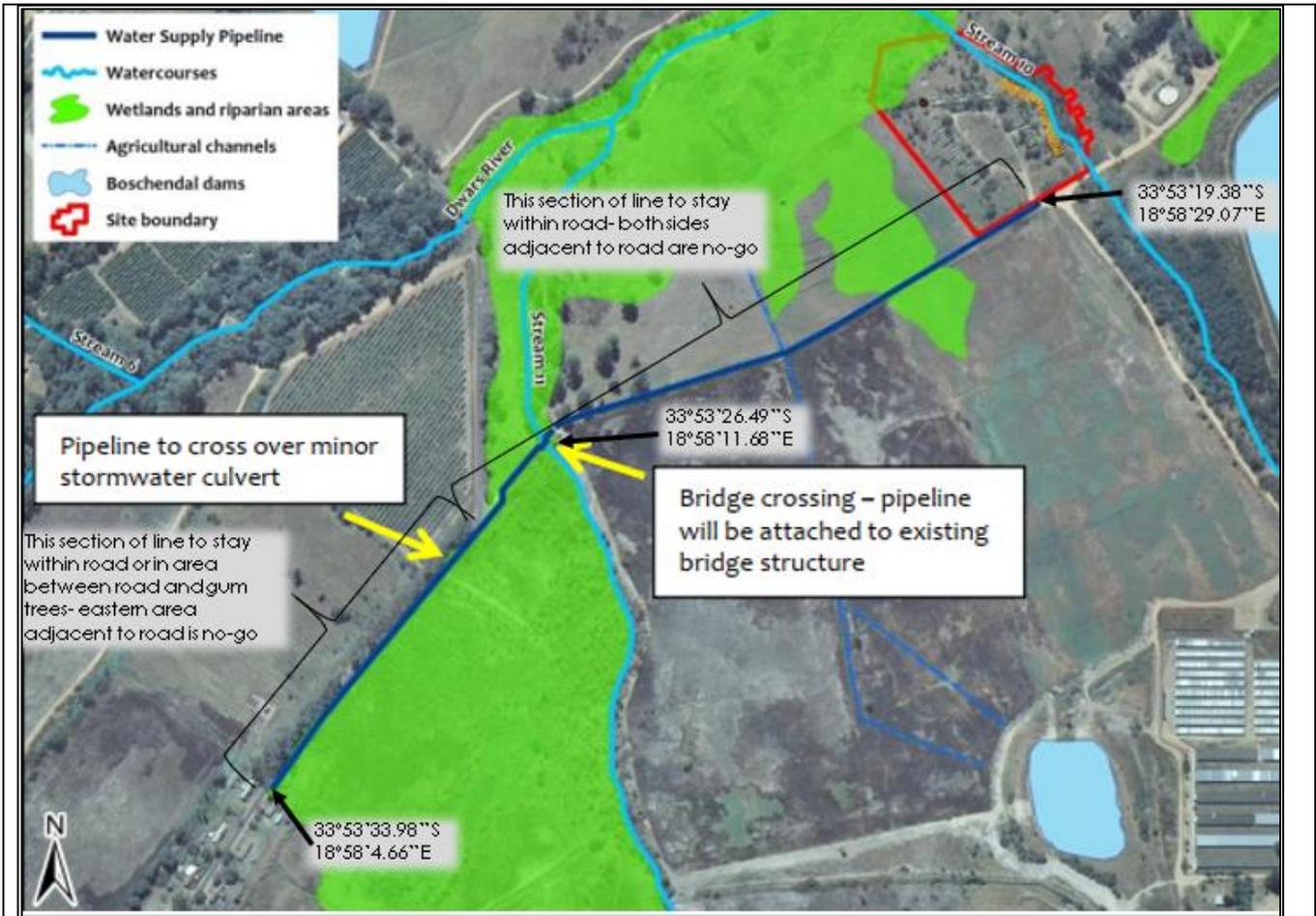


Figure 50 No-Go areas associated with potable water pipeline – Alternative 3 (preferred alternative) only (source: base map from Snaddon, 2021, with additional no-go notes and co-ordinates added by the EAP, 01/06/2021)

Figure 51 depicts the no-go areas associated with the proposed temporary potable water line for Alternative 3 (the preferred alternative), namely the areas south of Hoof Road, the area east of the roadway that extends northwards, Stream 11 and all wetlands and seeps adjacent to the roadway. Trenching must furthermore be contained to the existing roadway.

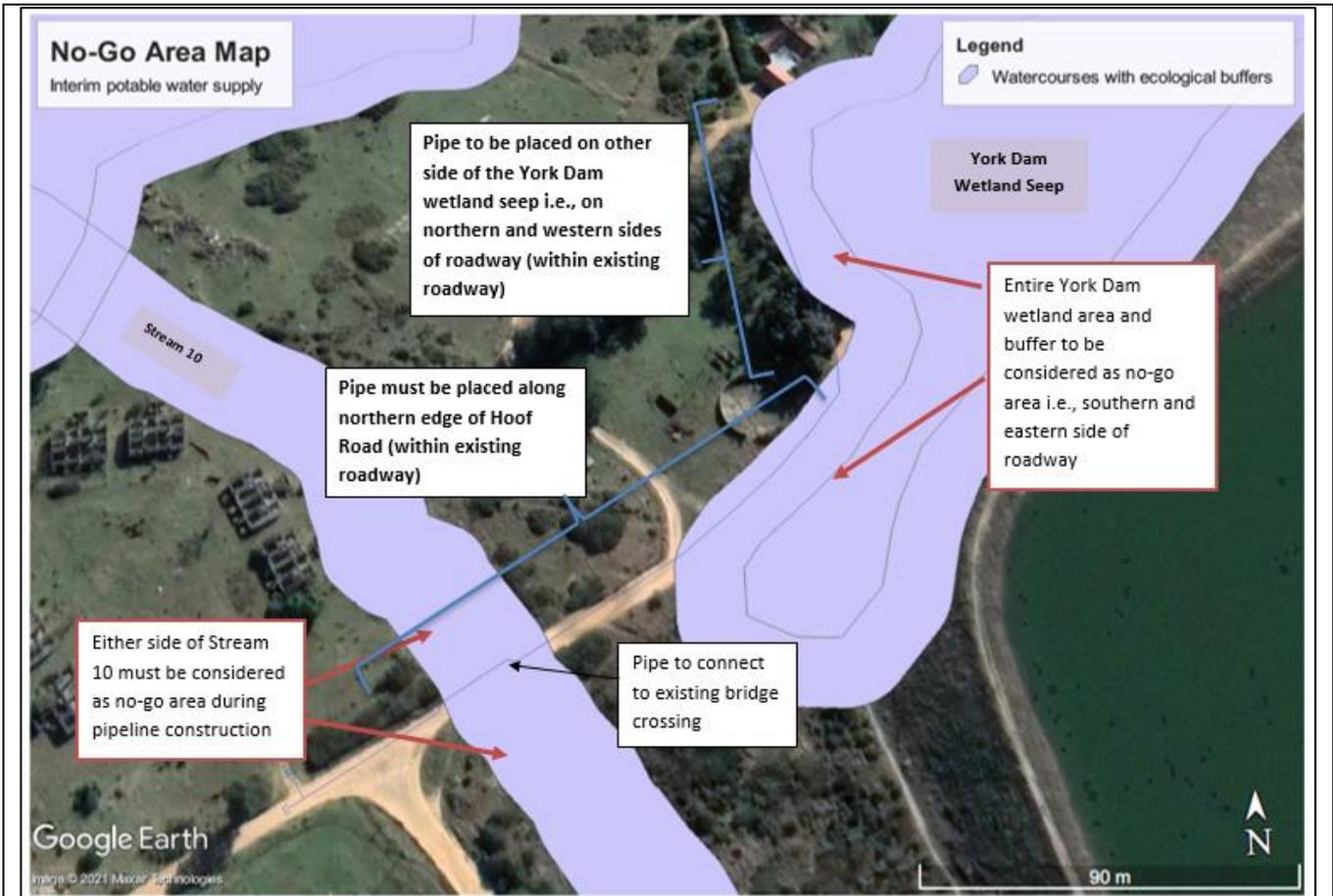


Figure 51: No Go Areas associated with the interim potable water supply pipeline - Alternative 3 (preferred alternative) only (source: base map from Snaddon, 2021, with additional no-go notes added by the EAP, 17/11/2021)

3. Methodology to determine the significance ratings of the potential environmental impacts and risks associated with the alternatives.

Describe the methodology to be used in determining and ranking the nature, significance, consequences, extent, duration of the potential environmental impacts and risks associated with the proposed activity or development and alternatives, the degree to which the impact or risk can be reversed and the degree to which the impact and risk may cause irreplaceable loss of resources.

In response to an I&AP requesting clarity on what "sensitivity" means, in the context of this assessment, this term refers to any aspects of the site or context which hold natural, cultural, or social value which may be affected by the proposed development.

Specialist studies have been conducted which have included Agricultural sensitivity verification, a Terrestrial Biodiversity Compliance Statement, Freshwater Impact Assessment as well as a Heritage Impact Assessment (which includes a Precinct study, visual study, social heritage study and archaeological assessment and references the existing Boschendal Baseline Heritage Report (RSA, 2019)). Civil, electrical, structural, and transport engineers have also provided additional information for this report and have informed and guided the scope of the proposed development. The pre-application draft Basic Assessment Report has also been updated to include a flood lien analysis of Stream 10, flood management measures in the proposed design, as well as river rehabilitation for Stream 10. It has also been updated to include an additional servicing alternative (i.e. Alternative 3- which is preferred) which would make use of a conservancy tank for sewage (this would be emptied as needed by a honeysucker) and to provide potable water to the site through temporarily connecting to an existing irrigation supply and, in the long-term, through a pipeline connecting to the Lanquedoc pump station. These changes to scope have been assessed and considered by all the specialists as well. Confirmation of services provision capacity is also included in this report.

The above-mentioned specialist studies have been conducted by reputable professionals with the aim of identifying potential environmental impacts of the proposed development, as well as measures to mitigate any environmental impacts. The assessment methods are deemed acceptable for the nature and scale of the development and are detailed in Appendix N.

Furthermore, the scope of the study has been determined with reference to the requirements of the relevant legislation, namely the NEMA EIA Regulations, 2014 (as amended in 2017). The main responsibilities of the EAP would include but not be limited to, the following, as stipulated in the EIA Regulations:

- Pre-application consultation with the authorities in order to highlight any key issues and/or requirements early in the process;

- Submission of a Notice of Intent to the DEA&DP in order to make them aware of the proposal and forthcoming application;
- Submission of the required Application Form to the DEA&DP, in order to register the proposed project, and obtain the applicable reference number;
- Consultation with the relevant authorities and stakeholders, through the Basic Assessment process, to ensure that identification of relevant issues or concerns are undertaken;
- Ensure the assessment of and response to the issues that are raised;
- Compilation of the required BAR, describing the proposed activity, the affected environment, the potential environmental impacts, all applicable legislation and applicable guidelines, the detail of the public participation process followed, and the findings of the specialist studies and recommendations and/or mitigations measures to be implemented during construction and operation;
- Submission of the BAR to the public for comment and to the DEA&DP for a decision.

One of the fundamental aims of a Basic Assessment process is to ensure that the demands of sustainable development are met on a project level, within the context of the greater area. The most common definition of sustainable development is development that meets the needs of the present while not compromising the needs of future generations.

The Basic Assessment for the proposed development is therefore being undertaken with sustainable development as a goal. The assessment has looked at the impacts of the proposals on the environment and assessed the significance of these, and proposes mitigation measures, as required, to reduce anticipated impacts to acceptable levels. This is to ensure that the development makes "equitable and sustainable use of environmental and natural resources for the benefit of present and future generations".

The overall assessment criteria are based on the requirements of the National Environmental Management, 1998 (Act 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (as amended). Refer to the methodology included in Appendix N.

The assessment criteria and methods employed by each specialist have been indicated in the various specialist reports contained in Appendix G.

4. Assessment of each impact and risk identified for each alternative

Note: The following table serves as a guide for summarising each alternative. The table should be repeated for each alternative to ensure a comparative assessment. The EAP may decide to include this section as Appendix J to this BAR.

Note that heritage impacts are the same for all three development alternatives, however the tables have been duplicated to honour the format of the template.

Proposed Development Alternative

The construction phase is anticipated to last 8 to 12 months.

Note that there would be insignificant impacts anticipated in terms of **geohydrology** and **geology** because the scale of the proposed development is very small when compared to a geo-hydrological and geological scale and the foundations of the proposed development would tie in with those of existing structures at approximately 1 m deep. Furthermore, foundations would be located at multiple distinct points throughout the site and not the entire site. The extent and depth of the proposed development would, therefore, not be at a significant scale which could affect geohydrology and geology on site and in the local area. The same applies for the potable water lines where the excavations would not be deep and would be within existing (and thus "historically excavated") roadway and/or the compacted dirt area between the roadway and gum trees (for the connection to Lanquedoc).

There are no adverse **agricultural impacts** anticipated (Lanz, 2021) as the site and potable water line routes (for Alternative 3) does not possess ideal soils for planting of crops and would not result in an opportunity cost. No mitigation is required in this regard. Refer to Appendix G(d) for the Agricultural Sensitivity Statement. The proposed development is recommended for approval (Lanz, 2021).

Botanical impacts have not been assessed at the detail of an impact assessment table given the low ecological significance of the site and the proposed potable pipeline routes for Alternative 3 (Helme, 2021). A terrestrial compliance statement has been provided (refer to Appendix G(c)) and this lists likely impacts, but concludes that there are no mitigation requirements other than a note on plant species to be used in the planting list (for landscaping around the New Retreat) because the proposed development could be authorised without any regionally or nationally significant ecological impacts (Helme, 2021). Helme (2021) lists the likely impacts as follows (noting that these would apply to all three alternatives given that they are site related and the extent and proposed rehabilitation is the same for all three):

- The likely construction phase ecological impacts of the proposed development are loss of remnant vegetation and faunal habitat on site (and along the potable water line to Lanquedoc), as well as possible loss of the few individual animals that are unable to move to adjacent sites. Significance is low negative before and after mitigation.
- The rather minor operational phase ecological impacts of the proposed development are primarily habitat fragmentation and loss of current levels of ecological connectivity across the site (note that this is not relevant to the proposed potable water line and only the site of the New Retreat). Significance is low negative before mitigation and low positive after mitigation.

- The proposed development could actually enhance the ecological status of this area, by means of increasing the current indigenous plant diversity and cover (as proposed in development layouts) and making it more attractive to a wider range of birds and insects.

With specific reference to the **listed activity** regarding expansion for tourism accommodation within 5 km of a nature reserve, Helme (2021) confirms that the proposed development could be authorised without any regionally or nationally significant ecological impacts.

No **noise or dust** impacts are anticipated for the **operational** phase as the proposed use is for tourism (which is largely seasonal) and accommodation, which is not a typically noisy or dusty use. The same applies to the two proposed potable water lines (for the preferred alternative) as the lines would be underground.

It should also be noted that Smuts & Scurr (2021) confirm that there are no adverse heritage impacts anticipated as a result of the proposed potable water pipeline to Lanquedoc) and so all heritage impacts contemplated in the tables below apply to the site of the New Retreat itself as it sits in the heritage and cultural context.

The impact of the Alternative 1, Alternative 2 and Alternative 3 are similar in most respects, except for certain aspects related to freshwater ecology. Therefore, the impact tables refer to all three development alternatives, unless otherwise stated.

Alternative: Preferred Alternative (i.e. Alternative 3) and Alternatives 1 and 2	
Planning, design, and development phase	
Physical	
Potential impact and risk:	ALTERING THE SURFACE DRAINAGE REGIME
Nature of impact:	Additional hard surfaces in some portions of the route would provide a marginal increase in hard areas for stormwater run-off
Extent and duration of impact:	Localised within the route boundary and permanent
Consequence of impact or risk:	Additional stormwater volumes in local (i.e. on site and adjacent) infrastructure
Probability of occurrence:	Definite
Degree to which the impact may cause irreplaceable loss of resources:	Very Low to Zero
Degree to which the impact can be reversed:	High
Indirect impacts:	Localised flooding
Cumulative impact prior to mitigation:	Very Low (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	The final stormwater management plan is to be approved by the Stellenbosch Municipality branch mandated to deal with land use and/or catchment/stormwater management prior to construction.
Residual impacts:	Minor additional stormwater volumes accommodated within the stormwater management system
Cumulative impact post mitigation:	Neutral
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Neutral
Note on significance of impact: While surface drainage is an important aspect to take into consideration as part of the final design of the proposed development, the related impacts (assuming engineering solutions are incorporated) would not be significant and would not have any effect on the surrounding areas as the proposed development is intended to achieved maximum permeability (services report). This is addressed in the civil services report (refer to Appendix G(b)).	
Socio-economic	
Potential impact and risk:	Generation of local economic stimulus
Nature of impact:	Creation of employment opportunities as a result of development/ construction of the proposed development for a period of approximately 8 to 12 months.
Extent and duration of impact:	Widespread impact beyond the site boundary and short-term
Consequence of impact or risk:	Marginal increase in income for local communities.
Probability of occurrence:	Definite
Degree to which the impact may cause irreplaceable loss of resources:	Not applicable
Degree to which the impact can be reversed:	Low

Indirect impacts:	Buying power of certain members in the local communities increases for a short period
Cumulative impact prior to mitigation:	Low (+)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (+)
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	Low, but no need to mitigate a positive impact.
Proposed mitigation:	Not applicable
Residual impacts:	Buying power of local communities increases for a short period
Cumulative impact post mitigation:	Low (+)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (+)
Note on significance of impact: This impact has been based on the socio-economic data for the proposed development provided in section G8 relative to the socio-economic information on the local communities and Stellenbosch Municipality as a whole.	
Nuisance Impacts	
Potential impact and risk:	Noise and Dust
Nature of impact:	The land clearing and other construction activities will result in the generation of dust and noise which may be a nuisance to surrounding land users whilst construction is ongoing.
Extent and duration of impact:	Local (on site and, although this would likely be experienced from adjacent to the site, the site is located well within farm limits), short-term
Consequence of impact or risk:	Localised increased dust on surfaces and possible sinus concerns for workers adjacent to the site,
Probability of occurrence:	Definite
Degree to which the impact may cause irreplaceable loss of resources:	None
Degree to which the impact can be reversed:	Irreversible
Indirect impacts:	Workers adjacent to the site may have to clean surfaces more and may require some minor treatment of sinus issues, however this would be unlikely
Cumulative impact prior to mitigation:	Very Low (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	Implementation of the specifications in the EMPr (Appendix H) which pertain to the management of the noise and dust elements of the construction site.
Residual impacts:	Minor additional dust and noise (during working hours) in environments adjacent to the site
Cumulative impact post mitigation:	Neutral
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low (-)
Note on significance of impact: Note that there are a few houses occupied by Boschendal staff nearby the site and the workers move around the farm so would not be permanently stationed adjacent to or on the site. In terms of the potable water line to Lanquedoc, the route does not have houses adjacent to it, with the nearest homes being located about 110m away and so impact on them in that regard would be minimal. Therefore, the implementation of the specifications of the EMPr would serve to reduce dust and noise impacts associated with construction activities. The residual impacts after mitigation is applied are considered adequate for temporary construction related impacts of this nature and are not considered significant.	
Visual	
Potential impact and risk:	Adverse visual/ aesthetic impacts
Nature of impact:	Visual impacts associated with construction activities (machinery, vehicle movement, site camp, signage, lighting and temporary services, wind-blown litter, erosion, and exposed surfaces)
Extent and duration of impact:	Local (on site and, although this would be visible from adjacent to the site, the site is located well within farm limits), short-term
Consequence of impact or risk:	Construction areas look comparatively unsightly for a short period of time and may detract from the overall rural, scenic experience of the farm in that particular area
Probability of occurrence:	Definite

Degree to which the impact may cause irreplaceable loss of resources:	None
Degree to which the impact can be reversed:	High
Indirect impacts:	Passers-by would see a construction site rather than the present site conditions, which are currently unkempt and derelict cottages
Cumulative impact prior to mitigation:	Neutral
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	Implementation of the specifications in the EMPr (Appendix H) which pertain to the management of the visual/aesthetic elements of the construction site.
Residual impacts:	Controlled unsightly areas during construction activities
Cumulative impact post mitigation:	Neutral
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low (-)
<p>Note on significance of impact: The residual impacts after mitigation was applied are considered adequate for temporary construction related impacts of this nature and are not considered significant. In terms of the potable water line to Lanquedoc, the route does not have houses adjacent to it, with the nearest homes being located about 110 m away and so impact on them in that regard would be minimal.</p>	
Natural Resources	
Potential impact and risk:	Depletion of Natural Resources through use as material in the development/construction phase
Nature of impact:	Construction of the development and the associated use of natural resources, such as water, resources for the generation of energy, construction materials etc.
Extent and duration of impact:	Widespread beyond site boundary, Short-term
Consequence of impact or risk:	Depletion in natural resources
Probability of occurrence:	Definite
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Irreversible
Indirect impacts:	Fewer natural resources available for development
Cumulative impact prior to mitigation:	Very low (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Implementation of the specifications in this regard contained in the EMPr (Appendix H).
Residual impacts:	Controlled use of natural resources and avoidance or minimisation of wastage
Cumulative impact post mitigation:	Very low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low (-)
<p>Note on significance of impact: A large component of the proposal entails the refurbishment of existing structures, which in itself would serve to reduce the requirement for resources. Additional measures to further mitigate this impact have been included in the EMPr (Appendix H). Subsequent to mitigation, the residual impacts are deemed to be insignificant.</p>	
Traffic	
Potential impact and risk:	Effect on LOS of local road network during the operational phase
Nature of impact:	Some minor congestion could be experienced during morning peak along the local road network, or a slightly longer waiting period to cross the Dwars River Bridge in the morning peak
Extent and duration of impact:	Medium (beyond site boundary), permanent
Consequence of impact or risk:	Minor additional waiting time in traffic, but continued acceptable LOS
Probability of occurrence:	Medium (could occur frequently, but not continuously)
Degree to which the impact may cause irreplaceable loss of resources:	None
Degree to which the impact can be reversed:	None

Indirect impacts:	Minor additional waiting time in traffic, but continued acceptable LOS
Cumulative impact prior to mitigation:	Negligible
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	Provide 24 parking bays Provide a bus turning route (see Figure 3) Resurface the bellmouth at the Lanquedoc Main Road/Ou Wapad intersection
Residual impacts:	None- continued acceptable LOS for affected intersections
Cumulative impact post mitigation:	Negligible
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Note on significance of impact: The Transport Impact Assessment found that LOS would continue to be acceptable with the proposed development and minor recommendations were made. These have been included in the EMPr. Also note that, while this is an operational impact, it is included in the design component of the impact assessment tables as the mitigation measures would be provided at the design and planning stage.	
Potential impact and risk:	Traffic Congestion on local road network during construction
Nature of impact:	Some minor congestion could be experienced during morning peak along the local road network, or a slightly longer waiting period to cross the Dwars River Bridge in the morning peak during the short construction phase
Extent and duration of impact:	Medium and short-term
Consequence of impact or risk:	Minor additional waiting time in traffic
Probability of occurrence:	Low (i.e. would seldom occur)
Degree to which the impact may cause irreplaceable loss of resources:	None
Degree to which the impact can be reversed:	None
Indirect impacts:	Minor additional waiting time in traffic, but continued acceptable LOS
Cumulative impact prior to mitigation:	Low (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	Mitigations measures for traffic control have been included in the EMPr
Residual impacts:	Minor and occasional additional waiting time in traffic
Cumulative impact post mitigation:	Negligible
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low (-)
Note on significance of impact: Traffic congestion during construction can be managed and controlled.	
Ecological- Freshwater	
Potential impact and risk:	Storage of building or demolition materials (sand, soil, bricks etc) in or close to sensitive areas – this would damage the soil structure and would destroy or shade out plants growing in and around these ecosystems. Dump areas frequently lead to the compaction of soils, which can influence re-growth of plants.
Nature of impact:	Negative
Extent and duration of impact:	Site and short-term
Consequence of impact or risk:	This would lead to deterioration in ecological condition, or possibly permanent loss of natural habitat.
Probability of occurrence:	Improbable
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss
Degree to which the impact can be reversed:	Fully reversible
Indirect impacts:	None – impact is unlikely to be felt off-site or to influence broader ecological functioning
Cumulative impact prior to mitigation:	Low (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)

Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Store materials at least 50 m away from any sensitive areas in bunded areas. Protect piles (must be less than 1.5 m high) of soil and other fine material, such as using shade cloth. Rehabilitate sensitive areas that are impacted by this activity.
Residual impacts:	No residual impact if the mitigation is implemented.
Cumulative impact post mitigation:	No impact
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	No impact
Note on significance of impact: Ecological impacts were assessed by Snaddon (2021) and are included in Appendix G (e).	
Potential impact and risk:	
Leakage or spillage of fuels, oils, etc. from construction / demolition machinery – this would lead to pollution of the wetlands or stream.	
Nature of impact:	Negative
Extent and duration of impact:	Local and short-term
Consequence of impact or risk:	This would lead to deterioration in ecological condition.
Probability of occurrence:	Probable
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss
Degree to which the impact can be reversed:	Partly reversible
Indirect impacts:	Pollution of the Dwars River
Cumulative impact prior to mitigation:	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low to medium (-)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	No mixing of concrete close to (< 50 m) wetlands or stream. All machinery, toilets etc that are prone to leaks or spills must be located at least 50 m away from wetlands and stream and must be well maintained. Construction / demolition work in or close to the wetlands and stream must be during the dry season.
Residual impacts:	There may be some residual impact that will linger after construction due to leaks / spills not being noticed / recorded. Soil pollution is sometimes hard to detect, and pollutants may find their way into sensitive areas.
Cumulative impact post mitigation:	Low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Note on significance of impact: Ecological impacts were assessed by Snaddon (2021) and are included in Appendix G (e).	
Potential impact and risk:	
Foot and vehicular traffic across the site, leading to destruction or deterioration of freshwater habitat.	
Nature of impact:	Negative
Extent and duration of impact:	Site and short-term
Consequence of impact or risk:	This would lead to deterioration in ecological condition or possible loss of wetland or river habitat.
Probability of occurrence:	Improbable
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss
Degree to which the impact can be reversed:	Fully reversible
Indirect impacts:	None – impact is unlikely to be felt off-site
Cumulative impact prior to mitigation:	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Demarcate sensitive areas and avoid during construction / demolition. Work in or close to the wetlands or stream must take

	place during the dry season. Use existing roads and tracks. Rehabilitate impacted sensitive areas.
Residual impacts:	No residual impacts if mitigation is implemented.
Cumulative impact post mitigation:	No impact
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	No impact
Note on significance of impact: Ecological impacts were assessed by Snaddon (2021) and are included in Appendix G (e).	
Potential impact and risk:	Presence of construction / demolition teams and their machinery on site – this may lead to noise and light pollution in the area, which will disturb aquatic and terrestrial fauna and flora.
Nature of impact:	Negative
Extent and duration of impact:	Site and short-term
Consequence of impact or risk:	This would lead to the deterioration in condition of aquatic habitat and the consequent movement of flora and fauna away from the site.
Probability of occurrence:	Probable
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss
Degree to which the impact can be reversed:	Partly reversible
Indirect impacts:	Movement of fauna and flora from the site onto the broader Estate, or movement of species away from the Estate altogether, towards less disturbed sites.
Cumulative impact prior to mitigation:	Low to medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	Demarcate and avoid encroaching into sensitive areas during construction / demolition. Work in or close to the wetlands or stream must take place during the dry season. Direct lights away from sensitive areas.
Residual impacts:	No residual impacts if mitigation is implemented.
Cumulative impact post mitigation:	Low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Note on significance of impact: Ecological impacts were assessed by Snaddon (2021) and are included in Appendix G (e).	
Potential impact and risk:	Construction or demolition activities close to the wetlands or stream will lead to the loss of natural vegetation cover, and subsequent loss of biodiversity.
Nature of impact:	Negative
Extent and duration of impact:	Local and short-term
Consequence of impact or risk:	This would lead to the deterioration in condition of aquatic habitat and loss of biodiversity.
Probability of occurrence:	Highly probable
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss
Degree to which the impact can be reversed:	Partly reversible
Indirect impacts:	None – impact is unlikely to be felt off-site.
Cumulative impact prior to mitigation:	Low (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low to medium (-)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	The proposed river rehabilitation plan must be implemented, during the dry season. The water supply pipelines for all development Alternatives must be laid in the road. For Alternative 3, the pipeline must preferably be located to the north of Hoof Pad, where the landscape is more disturbed. Trenching for laying the water supply

	<p>pipeline must be done in sections, so that trenches are left open for a minimum length of time.</p> <p>Search and rescue of important or sensitive plants should be completed before construction or demolition occurs. Full-grown riparian tree species must not be disturbed or damaged. Where alien species, particularly kikuyu grass, are removed, these must be replaced by indigenous species of similar growth form. Disturbed areas must be checked regularly for alien and invasive seedlings</p>
Residual impacts:	No residual impacts if mitigation is implemented.
Cumulative impact post mitigation:	No impact
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Note on significance of impact: Ecological impacts were assessed by Snaddon (2021) and are included in Appendix G (e).	
Potential impact and risk:	Construction or demolition activities close to the wetlands or stream may lead to an increased input of mobile sediments, especially during the wet winter months when rain and runoff may cause erosion and sedimentation.
Nature of impact:	Negative
Extent and duration of impact:	Local and medium-term
Consequence of impact or risk:	This would lead to the deterioration in condition of aquatic habitat through erosion and sedimentation.
Probability of occurrence:	Highly probable
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss
Degree to which the impact can be reversed:	Partly reversible
Indirect impacts:	May cause sedimentation in the Dwars River downstream, which in turn can lead to head-cut erosion in the Dwars River channel due to change in longitudinal gradient.
Cumulative impact prior to mitigation:	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low to medium (-)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	<p>The proposed river rehabilitation plan must be implemented, during the dry season. Rock for the reno mattress, riprap and rehabilitation gabions may not be sourced from the streams on Boschendal Estate. The water supply pipelines for all development Alternatives must be laid in the road. For Alternative 3, the pipeline must preferably be located to the north of Hoof Pad, where the landscape is more disturbed. Trenching for laying the water supply pipeline must be done in sections, so that trenches are left open for a minimum length of time.</p> <p>Demarcate and avoid encroaching into sensitive areas during construction or demolition. Construction/demolition close to the streams and wetlands must take place during the dry season. The site must be inspected after heavy rainfall to check for erosion damage. If construction / demolition areas are to be de-watered (e.g. after rains), this water must first be pumped into a settlement area, and not directly into the wetlands or stream. Impacted sensitive areas must be rehabilitated.</p>
Residual impacts:	No residual impacts if mitigation is implemented.
Cumulative impact post mitigation:	Low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Note on significance of impact: Ecological impacts were assessed by Snaddon (2021) and are included in Appendix G (e).	
Potential impact and risk:	Topsoil or sand brought onto the site, for filling and landscaping can lead to the introduction of alien or invasive seedbanks.
Nature of impact:	Negative
Extent and duration of impact:	Local and medium-term
Consequence of impact or risk:	This would lead to the deterioration in condition of aquatic habitat and loss of water through higher transpiration rates of IAPs, compared to most fynbos species.

Probability of occurrence:	Probable
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss
Degree to which the impact can be reversed:	Fully reversible
Indirect impacts:	Spread of IAPs from the site onto the broader Estate, and downstream towards the Dwars River.
Cumulative impact prior to mitigation:	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low to medium (-)
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Inspect all soil and fill brought onto site and remove all seedlings. Site must be inspected at least weekly for alien and invasive seedlings, and these removed and destroyed.
Residual impacts:	It is a challenge to ensure that the disturbance of soils and use of imported topsoils does not lead to the spread and establishment of alien plants. It is likely that some will avoid detection. Only constant monitoring and removal will solve this problem.
Cumulative impact post mitigation:	Medium (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Note on significance of impact: Ecological impacts were assessed by Snaddon (2021) and are included in Appendix G (e).	
Heritage- Archaeology	
Potential impact and risk:	Low
Nature of impact:	Impacts are possible to subsurface remains, should these occur, during developmental stage through trenching and earthmoving activities related to construction activities.
Extent and duration of impact:	Impacts are likely throughout construction phase while subsurface excavations related to construction or landscaping are undertaken
Consequence of impact or risk:	Should construction activities uncover an <i>in situ</i> archaeological site, damage or destruction of that site would result
Probability of occurrence:	Low
Degree to which the impact may cause irreplaceable loss of resources:	Very High
Degree to which the impact can be reversed:	Not possible
Indirect impacts:	No indirect impacts will occur to archaeological resources as a result of this development
Cumulative impact prior to mitigation:	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (-)
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	Periodic site inspection by an archaeologist should be undertaken to ensure that no <i>in situ</i> , subsurface pre-Colonial archaeological material is located within the development area.
Residual impacts:	Low
Cumulative impact post mitigation:	Low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (-) or minor Low (+) if it contributes to site identification
Note in impact: Should a site similar to that uncovered at Solms Delta be present on site, avoidance of that area, or mitigation through excavation might be necessary. The likelihood of such a site being encountered is very low, however.	
Heritage- Architecture	
Potential impact and risk:	Very low
Nature of impact:	The cottages hold no architectural significance and no impacts will arise. Unsympathetic alteration could, however, result in the loss of a layer of the farm's history as expressed in the variety of architectural styles present on the farm.
Extent and duration of impact:	Impacts would arise during the construction phase.
Consequence of impact or risk:	Renovation of all derelict buildings on the farm, particularly to reflect a standard aesthetic will obscure the layered history of the farm.
Probability of occurrence:	Low

Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	Indirect impacts can arise to the associated cultural landscape and the authenticity of the farm more broadly
Cumulative impact prior to mitigation:	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (-)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Retain a single example of the Amfarms cottage type in largely unaltered form to illustrate and inform about this period of Boschendal's history
Residual impacts:	Low
Cumulative impact post mitigation:	Low (+)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (+)
Heritage- Landscape	
Potential impact and risk:	High
Nature of impact:	Inappropriate landscaping interventions will interfere with the ability of the new development to sit in the landscape in an authentic, sympathetic manner, which is crucial to retaining the significance of the cultural landscape.
Extent and duration of impact:	Impacts would arise during construction phase
Consequence of impact or risk:	Unsympathetic landscape interventions will serve to increase the visual impact of the development, and set it outside of the surrounding landscape, rather than within and part of it.
Probability of occurrence:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	Indirect impacts can arise to the associated cultural landscape and the authenticity of the farm more broadly
Cumulative impact prior to mitigation:	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (-)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Sympathetic landscaping and planting that recognizes the differences in the East Precinct landscape to the rest of Boschendal. Avoidance of orthogonal planting, lines, and grids, and use of appropriate indigenous, endemic species.
Residual impacts:	Low
Cumulative impact post mitigation:	Low (+)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (+)
Heritage- Social	
Potential impact and risk:	Medium
Nature of impact:	Redevelopment of former workers' cottages risks erasing traces of those people's lives and labour from the Boschendal landscape, negatively affecting the authenticity of the farm as a heritage site.
Extent and duration of impact:	Developments serve as opportunities to redress social injustices. Where these opportunities are neglected, the extent and duration of impacts can be understood to be throughout the lifetime of the project from inception onwards.
Consequence of impact or risk:	Severing the landscape from its history of workers and the conditions and fact of their life and labour on the farm not only directly impacts those who occupied the cottages in the past but permeates all aspects of the farm's viability.
Probability of occurrence:	Medium

Degree to which the impact may cause irreplaceable loss of resources:	High
Degree to which the impact can be reversed:	Low
Indirect impacts:	Missed opportunities of achieving or implementing social redress have extensive indirect impacts that function at the site, farm, and valley scale, and are felt throughout South African society
Cumulative impact prior to mitigation:	Very High (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High (-)
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	Mitigation partly arises from the consultation of former inhabitants in the design phase and the retention of a single cottage in largely unchanged form as testament to the lives of former occupants. Most importantly, the future use of the site as a Bertha Retreat facility, and of the creation of spaces and opportunities for local communities to benefit directly and indirectly from the development offset the impacts.
Residual impacts:	Medium
Cumulative impact post mitigation:	Medium (+)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (+)
Note in impact: Ongoing redevelopment of workers' cottages for the provision of high-end tourist facilities cannot be seen as achieving the goals of social redress. Socially conscious initiatives such as Berth Foundation provide a vital key to unlocking development potential in a socially conscious way.	
Operational phase	
Traffic	
Note that operational impacts have been assessed in the design, planning and construction phase above. Impacts would be Low (-).	
Ecological- Terrestrial Biodiversity	
Helme (2021) has also confirmed that the proposed development would have a positive impact on terrestrial biodiversity as it would result in an improved fynbos habitat on site (note that this just does not apply to the proposed potable water pipeline route because the surface would remain as it currently is).	
Fauna	
Potential impact and risk:	Impacts on faunal movement through the site
Nature of impact:	Restriction of passage of fauna through the site
Extent and duration of impact:	Local (within site boundary) and throughout the lifetime of the project
Consequence of impact or risk:	Reduction of faunal movement through the area mapped as a faunal corridor (refer to Figure 33) and diversion of fauna around the proposed development
Probability of occurrence:	Possible for certain species of fauna
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Medium
Indirect impacts:	Narrowing of passage for fauna in this area could restrict the movement between breeding and foraging habitats
Cumulative impact prior to mitigation:	Low (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (-)
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Replanting a portion of site with suitable locally indigenous Fynbos species Avoid fencing off the site
Residual impacts:	Diversion of faunal passage around hard structures, noting that passage would still occur within the gardens and rehabilitated fynbos area
Cumulative impact post mitigation:	Very Low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)

Note on significance of impact: The mitigation measure regarding the rehabilitation of land with fynbos is included in the proposed development as the fynbos landscaping area in Appendix G(L). Furthermore, this area is located in close proximity to the stream, where the bulks of the habitat corridor indicated in Figure 33 is located. It is also not the intention of the Applicant to fence off the site. Note that this impact has been assessed by the EAP, based on the faunal corridors indicated in Figure 33 and the fact that the site is located on the outer edge of the corridor and also notes the fact the much of the proposed development comprises buildings which exist already, therefore there may already be a certain level of obstruction to their passage. The rehabilitated fynbos area would also provide better quality habitat/ passage in an area where such a habitat is currently not available, or at least highly limited (Helme, 2021, indicates that little indigenous vegetation occurs on site).

Heritage - Archaeology

Potential impact and risk:	N/A
Nature of impact:	No impacts are anticipated to archaeological heritage during the operational phase
Extent and duration of impact:	No impacts are anticipated to archaeological heritage during the operational phase
Consequence of impact or risk:	Very Low
Probability of occurrence:	Very Low
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	N/A
Indirect impacts:	No indirect impacts will occur to archaeological resources as a result of this development
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A

As mitigation will occur prior to operational phase, no further impacts are likely to arise out of the operational lifespan of the site.

Heritage- Architecture

Potential impact and risk:	Very low
Nature of impact:	The cottages hold no architectural significance and no impacts will arise. Unsympathetic alteration could, however, result in the loss of a layer of the farm's history as expressed in the variety of architectural styles present on the farm.
Extent and duration of impact:	Operational phase impacts relate to enduring loss of character that arises during the redevelopment
Consequence of impact or risk:	Renovation of all derelict buildings on the farm, particularly to reflect a standard aesthetic will obscure the layered history of the farm.
Probability of occurrence:	Low
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	Indirect impacts to the associated cultural landscape and the authenticity of the farm more broadly can persist
Cumulative impact prior to mitigation:	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (-)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Retain a single example of the Amfams cottage type in largely unaltered form to illustrate and inform about this period of Boschendal's history
Residual impacts:	Low
Cumulative impact post mitigation:	Low (+)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (+)

Heritage- Landscape	
Potential impact and risk:	High
Nature of impact:	Inappropriate landscaping interventions will interfere with the ability of the new development to sit in the landscape in an authentic, sympathetic manner, which is crucial to retaining the significance of the cultural landscape.
Extent and duration of impact:	Impacts would arise during construction phase and continue to affect the cultural landscape throughout the lifetime of the facility.
Consequence of impact or risk:	Unsympathetic landscape interventions will serve to increase the visual impact of the development, and set it outside of the surrounding landscape, rather than within and part of it.
Probability of occurrence:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	Indirect impacts to the associated cultural landscape and the authenticity of the farm more broadly can persist
Cumulative impact prior to mitigation:	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (-)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Sympathetic landscaping and planting that recognizes the differences in the East Precinct landscape to the rest of Boschendal. Avoidance of orthogonal planting, lines, and grids, and use of appropriate indigenous, endemic species.
Residual impacts:	Low
Cumulative impact post mitigation:	Low (+)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (+)
Note on significance of impact:	
Heritage- Social	
Potential impact and risk:	Medium
Nature of impact:	Redevelopment of former workers' cottages risks erasing traces of those people's lives and labour from the Boschendal landscape, negatively affecting the authenticity of the farm as a heritage site.
Extent and duration of impact:	Developments serve as opportunities to redress social injustices. Where these opportunities are neglected, the extent and duration of impacts can be understood to be throughout the lifetime of the project from inception onwards.
Consequence of impact or risk:	Severing the landscape from its history of workers and the conditions and fact of their life and labour on the farm not only directly impacts those who occupied the cottages in the past but permeates all aspects of the farm's viability.
Probability of occurrence:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	High
Degree to which the impact can be reversed:	Low
Indirect impacts:	Missed opportunities of achieving or implementing social redress have extensive indirect impacts that function at the site, farm, and valley scale, and are felt throughout South African society
Cumulative impact prior to mitigation:	Very High (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High (-)
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	Mitigation partly arises from the consultation of former inhabitants in the design phase and the retention of a single cottage in largely unchanged form as testament to the lives of former occupants. Most importantly, the future use of the site as a Bertha Retreat facility, and of the creation of spaces and opportunities for local communities to benefit directly and indirectly from the development offset the impacts.

Residual impacts:	Medium
Cumulative impact post mitigation:	Medium (+)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (+)
Note on significance of impact: Ongoing redevelopment of workers' cottages for the provision of high-end tourist facilities cannot be seen as achieving the goals of social redress. Socially conscious initiatives such as Bertha Foundation provide a vital key to unlocking development potential in a socially conscious way.	
Socio-economic	
Potential impact and risk:	Generation of local economic stimulus in perpetuity
Nature of impact:	Creation of employment opportunities as a result of operation of the proposed development. Note that additional indirect stimulus as a result of attracting more tourists to the area would also result.
Extent and duration of impact:	Widespread impact beyond the site boundary and long-term
Consequence of impact or risk:	Marginal increase in income for local communities.
Probability of occurrence:	Definite
Degree to which the impact may cause irreplaceable loss of resources:	Not applicable
Degree to which the impact can be reversed:	Medium
Indirect impacts:	Buying power of certain members in the local communities, as well as indirect income to local communities increases
Cumulative impact prior to mitigation:	Low (+)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (+)
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	Low, but no need to mitigate a positive impact.
Proposed mitigation:	Not applicable
Residual impacts:	Buying power of local communities increases to a small degree in perpetuity
Cumulative impact post mitigation:	Low (+)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (+)
Note on significance of impact: This impact has been based on the socio-economic data for the proposed development provided in section G 8, which indicates potential employment opportunities for about 33 individuals during this phase, relative to the socio-economic information on the local communities and Stellenbosch Municipality as a whole.	
Resource-Use	
Potential impact and risk:	Depletion of resources through use of resources such as energy and water and production of waste as a result of domestic activities
Nature of impact:	Use of natural resources, such as water, resources for the generation of energy, as well as additional pressure on landfills as a result of waste generation
Extent and duration of impact:	Widespread beyond site boundary, long-term
Consequence of impact or risk:	Depletion in resources
Probability of occurrence:	Definite
Degree to which the impact may cause irreplaceable loss of resources:	High
Degree to which the impact can be reversed:	Irreversible
Indirect impacts:	Fewer resources available
Cumulative impact prior to mitigation:	Very low (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Implementation of the specifications in this regard contained in the EMPr (Appendix H), for the operational phase.
Residual impacts:	Controlled use of resources and avoidance or minimisation of wastage
Cumulative impact post mitigation:	Very low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low (-)
Note on significance of impact: The proposed units would require potable water and electricity as well as natural resources used in the manufacture of household consumables. They would also produce waste. However, given the nature and scale	

of the development, this impact is not considered to be significant. Confirmation of available service capacity has been provided by Eskom and the Stellenbosch Municipality and the proposed development (preferred alternative) includes a conservancy tank for emptying by a honeysucker when needed, therefore the site and proposed development can be adequately serviced.

Decommissioning and closure phase

Potential impact and risk:	Not Applicable
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It is not the intention of the Applicant to decommission the proposed development as it would provide accommodation for tourists in perpetuity. However, should the facility be decommissioned (i.e. through the removal of the infrastructure) the impacts would be the same as the following construction-related impacts discussed in Section G 2(b) above:

- Socio-Economic aspects: Creation of employment opportunities as a result of development and construction on the site. Marginal additional indirect economic impacts (stimulus) would also be experienced.
- Nuisance impacts - dust and noise: The land clearing and other construction activities will result in the generation of dust and noise which may be a nuisance to surrounding land users whilst construction is ongoing.
- Visual aspects: Visual impacts associated with construction activities (machinery, vehicle movement, site camp, signage, lighting and temporary services, wind-blown litter, erosion, and exposed surfaces).
- Use of natural resources: Construction of the development and the associated use of natural resources, such as water, resources for the generation of energy, construction materials etc.
- Ecological: damage the soil structure, and would destroy or shade out plants growing in and around these ecosystems, compaction of soils, pollution of the wetlands or stream, destruction or deterioration of aquatic habitat, damage of soils, substrate (in the stream) and vegetation, noise and light pollution, disturbance to aquatic and terrestrial fauna and flora, loss of natural vegetation cover, and subsequent loss of biodiversity and erosion and sedimentation.

During the " decommissioning" phase, the geographical and physical impact on the surface drainage regime would be removed and a reduction in hardened surfaces would result in stormwater run-off which would be slightly less than that of the present day, given that there are presently structures on site.

The following operational impacts would be foregone/no longer applicable and therefore neutralised:

- Ecological aspects: Low positive impact of some rehabilitation of fynbos on site.
- Ecological aspects: Low negative impact of restriction of passage of fauna through the site.
- Socio-economic aspects- Medium positive impacts of creation of employment opportunities as a result of operation of the proposed development. Note that additional indirect stimulus as a result of attracting more tourists to the area would also result.
- Heritage- positive architectural, landscape and social heritage impacts
- Resource-use aspects: Very low negative impacts of use of natural resources, such as water, resources for the generation of energy, as well as additional pressure on landfills as a result of waste generation.

Note that the above-mentioned impacts are the same for all three development alternatives, with the exception of one of the ecological impacts pertaining to freshwater resources. The ecological impacts for the three development alternatives are tabled below.

Ecological: Freshwater/ Aquatic Biodiversity - Operational Phase			
	Alternative 1	Alternative 2	Alternative 3
Potential impact and risk:	Stormwater discharge into natural areas – water quality impacts.		
Nature of impact:	Negative	Negative	Negative
Extent and duration of impact:	Local and long-term	Local and long-term	Local and long-term
Consequence of impact or risk:	May lead to pollution of wetlands, rivers, and groundwater.		
Probability of occurrence:	Probable	Probable	Probable
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss	Marginal loss	Marginal loss
Degree to which the impact can be reversed:	Partly reversible	Partly reversible	Partly reversible
Indirect impacts:	Pollution of the Dwars River downstream, and of groundwater.		
Cumulative impact prior to mitigation:	Medium (-)	Medium (-)	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (-)	Medium (-)	Low (-)
Degree to which the impact can be avoided:	Medium to high	Medium to high	High
Degree to which the impact can be managed:	High	High	High
Degree to which the impact can be mitigated:	High	High	High
Proposed mitigation:	Limit hardening of surfaces to within the developable area (outside buffers). The pathways and amphitheatre planned within the wetlands and the ecological buffers must not be hardened, and compaction of soils along the pathways minimised to a narrow area (less than 1 metre). Pathways outside the ecological buffers and the aquatic ecosystems can be constructed with gravel of Gravel Fix. Hardened surfaces should discharge into filtration areas.		
	The vehicle track leading to the waste treatment components must be constructed with permeable materials, such as permeable paving, Gravel Fix, mulch, or earth.	Not applicable to this alternative.	
Residual impacts:	None	None	None
Cumulative impact post mitigation:	Low (-)	Low (-)	Low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Low (-)	Negligible
Note on significance of impact: Ecological impacts were assessed by Snaddon (2021) and are included in Appendix G(e)			

Potential impact and risk:	Stormwater discharge into natural areas – water quantity impacts.		
Nature of impact:	Negative	Negative	Negative
Extent and duration of impact:	Local and long-term	Local and long-term	Local and long-term
Consequence of impact or risk:	May lead to change in hydrological patterns in wetlands, rivers (stream 10 and Dwars River) and groundwater.		
Probability of occurrence:	Probable	Probable	Probable
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss	Marginal loss	Marginal loss
Degree to which the impact can be reversed:	Partly reversible	Partly reversible	Partly reversible
Indirect impacts:	Changed hydrology in the Dwars River downstream		
Cumulative impact prior to mitigation:	Medium (-)	Medium (-)	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low to medium (-)	Low to medium (-)	Low (-)
Degree to which the impact can be avoided:	Medium to high	Medium to high	High
Degree to which the impact can be managed:	High	High	High
Degree to which the impact can be mitigated:	High	High	High
Proposed mitigation:	Limit hardening of surfaces to within the developable area (outside buffers). The pathways and amphitheatre planned within the wetlands and the ecological buffers must not be hardened, and compaction of soils along the pathways minimised to a narrow area (less than 1 metre). Pathways outside the ecological buffers and the aquatic ecosystems can be constructed with gravel of Gravel. Fix Hardened surfaces should discharge into filtration areas.		
	The vehicle track leading to the waste treatment components must be constructed with permeable materials, such as permeable paving, Gravel Fix, mulch, or earth	Not applicable to this alternative.	
Residual impacts:	None	None	None
Cumulative impact post mitigation:	Low to medium (-)	Low to medium (-)	Low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Low (-)	Negligible
Note on significance of impact: Ecological impacts were assessed by Snaddon (2021) and are included in Appendix G(e)			
Potential impact and risk:	On-site treatment and/or storage of waste water- impacts on water quality		
Nature of impact:	Negative	Negative	Negative
Extent and duration of impact:	Local and long-term	Local and long-term	Local and long-term
Consequence of impact or risk:	May lead to contamination of soils, groundwater and aquatic ecosystems.		
Probability of occurrence:	Probable	Probable	Probable
Degree to which the impact may cause irreplaceable loss of resources:	Significant loss	Significant loss	Significant loss

Degree to which the impact can be reversed:	Partly reversible	Partly reversible	Partly reversible
Indirect impacts:	Pollution of the Dwars River downstream, and of groundwater		
Cumulative impact prior to mitigation:	Medium (-)	Medium (-)	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (-)	Medium (-)	Low (-)
Degree to which the impact can be avoided:	Medium to High	Medium to High	High
Degree to which the impact can be managed:	High	High	High
Degree to which the impact can be mitigated:	Medium	Medium	High
Proposed mitigation:	Place conveyance, storage and treatment components of waste water infrastructure outside of ecological buffers, and as far as possible from sensitive areas. Place a berm around the components to avoid contamination of surface flows from leaks or overflows. All facilities must be regularly checked for leaks and overflow.		
	Treated waste water should preferably be recycled back into the toilet system, thus creating essentially a closed system. Treated waste water can also be used for irrigation of landscaped areas, but should be directed towards road verges, rather than the margins of the stream or the wetlands	NA	
Residual impacts:	There may be some residual impact on quality of water in the aquatic environment.		
Cumulative impact post mitigation:	Low to medium (-)	Low (-)	Low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low to medium (-)	Low (-)	Negligible/ Low (-)
Potential impact and risk:	Proximity of buildings and human activity to the wetlands and Dwars River. This may lead to local disturbance of fauna and flora, through noise, light, trampling, etc. Fauna may move away from the site.		
Nature of impact:	Negative	Negative	Negative
Extent and duration of impact:	Local and long-term	Local and long-term	Local and long-term
Consequence of impact or risk:	May lead to a loss of habitat quality and movement of flora and fauna away from the site.		
Probability of occurrence:	Probable	Probable	Probable
Degree to which the impact may cause irreplaceable loss of resources:	Significant loss	Significant loss	Significant loss
Degree to which the impact can be reversed:	Fully reversible	Fully reversible	Fully reversible
Indirect impacts:	Movement of fauna and flora from the site onto the broader Estate, or movement of species away from the Estate altogether, towards less disturbed sites.		
Cumulative impact prior to mitigation:	Low to medium (-)	Low to medium (-)	Low to medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low to medium (-)	Low to medium (-)	Low to medium (-)

Degree to which the impact can be avoided:	Medium to high	Medium to high	Medium to high
Degree to which the impact can be managed:	High	High	High
Degree to which the impact can be mitigated:	High	High	High
Proposed mitigation:	Lighting should face away from the wetlands, and stream. Visitors should be discouraged from walking on the bed and banks of the stream, and into the wetter areas, through construction of walkways and benches, guiding visitors to use specific pathways and areas.		
Residual impacts:	There will be some residual impacts even after mitigation, as there will be an unavoidable increase in human activity in the immediate area.		
Cumulative impact post mitigation:	Low (-)	Low (-)	Low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Low (-)	Low (-)
Note on significance of impact: Ecological impacts were assessed by Snaddon (2021) and are included in Appendix G(e)			
Potential impact and risk:	Disturbance of soils for landscaping / maintenance of gardens/agricultural activities. Alien or invasive seeds and seedlings may be transported onto site. Alien vegetation is well adapted to establishing on previously disturbed soils and road verges.		
Nature of impact:	Negative	Negative	Negative
Extent and duration of impact:	Local and long-term	Local and long-term	Local and long-term
Consequence of impact or risk:	May lead to a loss of habitat quality, and increased water uptake through transpiration.		
Probability of occurrence:	Probable	Probable	Probable
Degree to which the impact may cause irreplaceable loss of resources:	Significant loss	Significant loss	Significant loss
Degree to which the impact can be reversed:	Fully reversible	Fully reversible	Fully reversible
Indirect impacts:	Spread of IAPs from the site onto the broader Estate, and downstream towards the Dwars River.		
Cumulative impact prior to mitigation:	Low to medium (-)	Low to medium (-)	Low to medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Low (-)	Low (-)
Degree to which the impact can be avoided:	Medium to high	Medium to high	Medium to high
Degree to which the impact can be managed:	High	High	High
Degree to which the impact can be mitigated:	High	High	High
Proposed mitigation:	Landscaping/gardening around the units must be kept to a minimum in the ecological buffers. Gardens should rather be natural areas, where the locally indigenous vegetation is allowed to grow. No kikuyu grass is allowed anywhere on site. The spread of alien plant species into all natural areas must be prevented and monitored. Road verges must be monitored for alien species, especially grasses.		
Residual impacts:	No residual impacts if mitigation is effectively implemented.		
Cumulative impact post mitigation:	Low (+)	Low (+)	Low (+)

Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (+)	Low (+)	Low (+)
Note on significance of impact: Ecological impacts were assessed by Snaddon (2021) and are included in Appendix G(e)			

Existing Rights Alternative

Note that there would be insignificant impacts anticipated in terms of **geohydrology** and **geology** for the existing rights alternative as it would entail farming activities which do not typically extend far enough underground.

No impact assessment from a **botanical** perspective is necessary as there is a **terrestrial biodiversity** compliance statement and the ecological significance of the site is low. Therefore, there is no formal assessment of the impact of the no-go alternative on terrestrial ecology, but the site would continue as per the *status quo*, which is a site that houses some low diversity and low significance indigenous vegetation as a result of historic agricultural use on and around the site. The site is also not zoned or formally "earmarked" for conservation.

No **traffic** impacts are anticipated for the "existing rights" alternative as the current road capacity and infrastructure is adequate.

The **surface drainage regime** of the site would likely not be altered as the site would retain the existing structures and other farming-related activities would typically retain the "earth"/ topsoil layer, which is currently present on site. Therefore, impacts in this regard are anticipated to be insignificant.

With regard to **socio-economic** aspects, it is not anticipated that the "existing rights" alternative would generate additional employment opportunities as, given the extent of the site relative to the remaining agricultural activities on the farm, it is most likely that it would be incorporated into existing planting and maintenance systems.

There would be insignificant **noise** impacts associated with the existing rights alternative as it would be similar to surrounding uses (i.e. farm animals or crops). Should crops be planted, then there would be no noise generated other than when farm machinery is used on site for maintenance.

While **agricultural impacts** are not anticipated to be negative, the site is located in soil which has limited potential for cultivation and is not recommended for cultivation (Lanz, 2021).

There would be no **archaeological impacts** (Smuts & Scurr, 2020).

Alternative 4 (i.e. the existing rights/ no-go):		
PLANNING, DESIGN AND DEVELOPMENT PHASE		
Ecological- Freshwater		
	No-go Alternative 1	No-go Alternative 2
Potential impact and risk:	Storage of building or demolition materials (sand, soil, bricks etc) in or close to sensitive areas – this would damage the soil structure and would destroy or shade out plants growing in and around these ecosystems. Dump areas frequently lead to the compaction of soils, which can influence re-growth of plants.	
Nature of impact:	Negative	
Extent and duration of impact:	Site and short-term	
Consequence of impact or risk:	This would lead to deterioration in ecological condition, or possibly permanent loss of natural habitat.	
Probability of occurrence:	Improbable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss	
Degree to which the impact can be reversed:	Fully reversible	
Indirect impacts:	None – impact is unlikely to be felt off-site or to influence broader ecological functioning	
Cumulative impact prior to mitigation:	Low (-)	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-) to no impact	Low (-)
Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	Store materials at least 50 m away from any sensitive areas in bunded areas. Protect piles (must be less than 1.5 m high) of soil and other fine material, such as using shade cloth. Rehabilitate sensitive areas that are impacted by this activity.	
Residual impacts:	Although Duty of Care applies to the No-go alternatives, it is unlikely that mitigation measures will be implemented. Residual impacts are likely.	
Cumulative impact post mitigation:	Low (-)	

Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-) to no impact	Low (-)
Note on impact: Given that different uses within what is permitted would have somewhat different effects on the freshwater ecosystem, the no-go alternative has been split into two categories for the freshwater impact assessment.		
Potential impact and risk:	Leakage or spillage of fuels, oils, etc. from construction / demolition machinery – this would lead to pollution of the wetlands or stream.	
Nature of impact:	Negative	
Extent and duration of impact:	Local and short-term	
Consequence of impact or risk:	This would lead to deterioration in ecological condition.	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss	
Degree to which the impact can be reversed:	Partly reversible	
Indirect impacts:	Pollution of the Dwars River	
Cumulative impact prior to mitigation:	Medium (-)	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Low (-) to medium (-)
Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	No mixing of concrete close to (< 50 m) wetlands or stream. All machinery, toilets etc that are prone to leaks or spills must be located at least 50 m away from wetlands and stream and must be well maintained. Construction / demolition work in or close to the wetlands and stream must be during the dry season.	
Residual impacts:	Although Duty of Care applies to the No-go alternatives, it is unlikely that mitigation measures will be implemented. Residual impacts are likely.	
Cumulative impact post mitigation:	Medium (-)	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Low (-) to medium (-)
Note on impact: Given that different uses within what is permitted would have somewhat different effects on the freshwater ecosystem, the no-go alternative has been split into two categories for the freshwater impact assessment.		
Potential impact and risk:	Foot and vehicular traffic across the site, leading to destruction or deterioration of freshwater habitat.	
Nature of impact:	Negative	
Extent and duration of impact:	Site and short-term	
Consequence of impact or risk:	This would lead to deterioration in ecological condition or possible loss of wetland or river habitat.	
Probability of occurrence:	Improbable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss	
Degree to which the impact can be reversed:	Fully reversible	
Indirect impacts:	None – impact is unlikely to be felt off-site	
Cumulative impact prior to mitigation:	Medium (-)	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Low (-) to medium (-)
Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	

Proposed mitigation:	Demarcate sensitive areas and avoid during construction / demolition. Work in or close to the wetlands or stream must take place during the dry season. Use existing roads and tracks. Rehabilitate impacted sensitive areas.	
Residual impacts:	Although Duty of Care applies to the No-go alternatives, it is unlikely that mitigation measures will be implemented. Residual impacts are likely.	
Cumulative impact post mitigation:	Medium (-)	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Low (-) to medium (-)
Note on impact: Given that different uses within what is permitted would have somewhat different effects on the freshwater ecosystem, the no-go alternative has been split into two categories for the freshwater impact assessment.		
Potential impact and risk:	Presence of construction / demolition teams and their machinery on site – this may lead to noise and light pollution in the area, which will disturb aquatic and terrestrial fauna and flora.	
Nature of impact:	Negative	
Extent and duration of impact:	Site and short-term	
Consequence of impact or risk:	This would lead to the deterioration in condition of aquatic habitat and the consequent movement of flora and fauna away from the site.	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss	
Degree to which the impact can be reversed:	Partly reversible	
Indirect impacts:	Movement of fauna and flora from the site onto the broader Estate, or movement of species away from the Estate altogether, towards less disturbed sites.	
Cumulative impact prior to mitigation:	Low (-) to medium (-)	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Low (-) to medium (-)
Degree to which the impact can be avoided:	Medium	
Degree to which the impact can be managed:	Medium	
Degree to which the impact can be mitigated:	Medium	
Proposed mitigation:	Demarcate and avoid encroaching into sensitive areas during construction / demolition. Work in or close to the wetlands or stream must take place during the dry season. Direct lights away from sensitive areas.	
Residual impacts:	Although Duty of Care applies to the No-go alternatives, it is unlikely that mitigation measures will be implemented. Residual impacts are likely.	
Cumulative impact post mitigation:	Low (-) to medium (-)	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Low (-) to medium (-)
Note on impact: Given that different uses within what is permitted would have somewhat different effects on the freshwater ecosystem, the no-go alternative has been split into two categories for the freshwater impact assessment.		
Potential impact and risk:	Construction or demolition activities close to the wetlands or stream will lead to the loss of natural vegetation cover, and subsequent loss of biodiversity.	
Nature of impact:	Negative	
Extent and duration of impact:	Local and short-term	
Consequence of impact or risk:	This would lead to the deterioration in condition of aquatic habitat and loss of biodiversity.	
Probability of occurrence:	Highly probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss	
Degree to which the impact can be reversed:	Partly reversible	
Indirect impacts:	None – impact is unlikely to be felt off-site	
Cumulative impact prior to mitigation:	Low (-)	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	

Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	Search and rescue of important or sensitive plants should be completed before construction occurs. Full-grown riparian tree species must not be disturbed or damaged. Where alien species, particularly kikuyu grass, are removed, these must be replaced by indigenous species of similar growth form. Disturbed areas must be checked regularly for alien and invasive seedlings.	
Residual impacts:	Although Duty of Care applies to the No-go alternatives, it is unlikely that mitigation measures will be implemented. Residual impacts are likely.	
Cumulative impact post mitigation:	Low (-)	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	
Note on impact: Given that different uses within what is permitted would have somewhat different effects on the freshwater ecosystem, the no-go alternative has been split into two categories for the freshwater impact assessment.		
Potential impact and risk:	Construction or demolition activities close to the wetlands or stream may lead to an increased input of mobile sediments, especially during the wet winter months when rain and runoff may cause erosion and sedimentation.	
Nature of impact:	Negative	
Extent and duration of impact:	Local and medium-term	
Consequence of impact or risk:	This would lead to the deterioration in condition of aquatic habitat through erosion and sedimentation.	
Probability of occurrence:	Highly probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss	
Degree to which the impact can be reversed:	Partly reversible	
Indirect impacts:	May cause sedimentation in the Dwars River downstream, which in turn can lead to head-cut erosion in the Dwars River channel due to change in longitudinal gradient	
Cumulative impact prior to mitigation:	Medium (-)	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Low (-) to medium (-)
Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	Demarcate and avoid encroaching into sensitive areas during construction. Construction close to the stream and wetlands must take place during the dry season. The construction site must be inspected after heavy rainfall to check for erosion damage. If construction areas are to be de-watered (e.g. after rains), this water must first be pumped into a settlement area, and not directly into the wetlands or stream. Impacted sensitive areas must be rehabilitated.	
Residual impacts:	Although Duty of Care applies to the No-go alternatives, it is unlikely that mitigation measures will be implemented. Residual impacts are likely.	
Cumulative impact post mitigation:	Medium	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Low (-) to medium (-)
Note on impact: Given that different uses within what is permitted would have somewhat different effects on the freshwater ecosystem, the no-go alternative has been split into two categories for the freshwater impact assessment.		
Potential impact and risk:	Topsoil or sand brought onto the site, for filling and landscaping can lead to the introduction of alien or invasive seedbanks.	
Nature of impact:	Negative	
Extent and duration of impact:	Local and medium-term	
Consequence of impact or risk:	This would lead to the deterioration in condition of aquatic habitat and loss of water through higher transpiration rates of IAPs, compared to most fynbos species.	

Probability of occurrence:	Probable
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss
Degree to which the impact can be reversed:	Fully reversible
Indirect impacts:	Spread of IAPs from the site onto the broader Estate, and downstream towards the Dwars River
Cumulative impact prior to mitigation:	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Inspect all soil and fill brought onto site and remove all seedlings. Site must be inspected at least weekly for alien and invasive seedlings, and these removed and destroyed.
Residual impacts:	Although Duty of Care applies to the No-go alternatives, it is unlikely that mitigation measures will be implemented. Residual impacts are likely.
Cumulative impact post mitigation:	Medium (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Note on impact: Given that different uses within what is permitted would have somewhat different effects on the freshwater ecosystem, the no-go alternative has been split into two categories for the freshwater impact assessment.	

Nuisance Impacts	
Potential impact and risk:	Dust
Nature of impact:	The land clearing and other site preparation activities would result in the generation of dust which may be a nuisance to surrounding land users whilst construction is ongoing.
Extent and duration of impact:	Local (on site and, although this would likely be experienced from adjacent to the site, the site is located well within farm limits), short-term
Consequence of impact or risk:	Localised increased dust on surfaces and possible sinus concerns for workers adjacent to the site,
Probability of occurrence:	Definite
Degree to which the impact may cause irreplaceable loss of resources:	None
Degree to which the impact can be reversed:	Irreversible
Indirect impacts:	Workers adjacent to the site may have to clean surfaces more and may require some minor treatment of sinus issues, however this would be unlikely
Cumulative impact prior to mitigation:	Very Low (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated:	Low
Proposed mitigation:	Implementation of the specifications in the EMPr (Appendix H) which pertain to the management of the dust elements of the construction site.
Residual impacts:	Minor additional dust (during working hours) in environments adjacent to the site
Cumulative impact post mitigation:	Neutral
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low (-)
Note on significance of impact: Note that there are a few houses occupied by Boschendal staff nearby the site and the workers move around the farm so would not be permanently stations adjacent to or on the site. The impacts of this alternative	

would be slightly greater than that of the proposed development alternative given that planting of crops would result in more exposed ground.	
Heritage- Architecture	
Potential impact and risk:	Medium
Nature of impact:	Loss of the cottages through either demolition or dereliction would constitute a loss of a layer of the farm's history as expressed in the variety of architectural styles present on the farm.
Extent and duration of impact:	N/A
Consequence of impact or risk:	Loss of layers of history across the farm
Probability of occurrence:	High
Degree to which the impact may cause irreplaceable loss of resources:	Medium
Degree to which the impact can be reversed:	Low
Indirect impacts:	Indirect impacts can arise to the associated cultural landscape and the authenticity of the farm more broadly
Cumulative impact prior to mitigation:	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (-)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Retain examples of the Amfarms cottage types in largely unaltered form to illustrate and inform about this period of Boschendal's history
Residual impacts:	Low
Cumulative impact post mitigation:	Low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Note on significance of impact: From a heritage perspective, impacts are not a reflection of degree of intervention or retention of fabric. As such, the no-go alternative only reflects no development, not partial development, and partial retention of fabric and/or form.	
Heritage- Landscape	
Potential impact and risk:	Low
Nature of impact:	Loss of built fabric illustrative of different periods of Boschendal history will reduce the heritage significance of the farm as a whole
Extent and duration of impact:	N/A
Consequence of impact or risk:	Negative impacts will arise to the layered nature of the cultural landscape through loss of categories of built forms, in this case, recent farmer workers' cottages
Probability of occurrence:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	Indirect impacts can arise to the associated cultural landscape and the authenticity of the farm more broadly
Cumulative impact prior to mitigation:	Medium (neutral, slightly negative)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (neutral, slightly negative)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Retention of examples of all categories of built form enhance the authenticity of the cultural landscape as a layered expression of the farm's past
Residual impacts:	Low
Cumulative impact post mitigation:	Low (neutral, slightly negative)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (neutral, slightly negative)
Note on significance of impact: This impact would present an opportunity cost in that there would be a lost opportunity for development which could contribute positively to the landscape.	

Heritage- Social	
Potential impact and risk:	Medium
Nature of impact:	The loss of these cottages through either demolition or dereliction represents the loss of representative samples of recent labour practices and worker's lives on the farm
Extent and duration of impact:	N/A
Consequence of impact or risk:	Severing the landscape from its history of workers and the conditions and fact of their life and labour on the farm not only directly impacts those who occupied the cottages in the past but permeates all aspects of the farm's viability.
Probability of occurrence:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	High
Degree to which the impact can be reversed:	Low
Indirect impacts:	Missed opportunities of achieving or implementing social redress have extensive indirect impacts that function at the site, farm, and valley scale, and are felt throughout South African society
Cumulative impact prior to mitigation:	Very High (neutral, slightly negative)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High (neutral, slightly negative)
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	This loss cannot be mitigated
Residual impacts:	High
Cumulative impact post mitigation:	Very High (neutral, slightly negative)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very High (neutral, slightly negative)
Note on significance of impact: This impact would present an opportunity cost in that there would be a lost opportunity for development which could contribute positively to social redress.	
Resource-use	
Potential impact and risk:	Depletion of resources through use of resources such as energy and water and production of waste as a result of domestic activities
Nature of impact:	Use of natural resources, such as water, resources for the generation of energy, as well as additional pressure on landfills as a result of waste generation
Extent and duration of impact:	Widespread beyond site boundary, long-term
Consequence of impact or risk:	Depletion in resources
Probability of occurrence:	Definite
Degree to which the impact may cause irreplaceable loss of resources:	High
Degree to which the impact can be reversed:	Irreversible
Indirect impacts:	Fewer resources available
Cumulative impact prior to mitigation:	Very low (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Implementation of the specifications in this regard contained in the EMPr (Appendix H), for the operational phase.
Residual impacts:	Controlled use of resources and avoidance or minimisation of wastage
Cumulative impact post mitigation:	Very low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low (-)
Note on impact: This assumes that there would be some demolition and redevelopment of the cottages for use as workers cottages or administrative buildings.	

OPERATIONAL PHASE

Ecological- Freshwater

	No-go Alternative 1	No-go Alternative 2
Potential impact and risk:	Stormwater discharge into natural areas – water quality impacts.	
Nature of impact:	Negative	
Extent and duration of impact:	Local and long-term	
Consequence of impact or risk:	May lead to pollution of wetlands, rivers, and groundwater.	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss	
Degree to which the impact can be reversed:	Partly reversible	
Indirect impacts:	Pollution of the Dwars River downstream, and of groundwater	
Cumulative impact prior to mitigation:	Medium (-)	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Medium (-)
Degree to which the impact can be avoided:	Medium to high	Medium
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	Downpipes from renovated buildings to discharge to filtration areas.	Runoff from agricultural lands should discharge into filtration areas some distance from the stream and wetlands, to allow for infiltration to ground.
Residual impacts:	Although Duty of Care applies to the No-go alternatives, it is unlikely that mitigation measures will be implemented. Residual impacts are likely.	
Cumulative impact post mitigation:	Medium (-)	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Medium (-)
Note on impact:	Given that different uses within what is permitted would have somewhat different effects on the freshwater ecosystem, the no-go alternative has been split into two categories for the freshwater impact assessment.	
Potential impact and risk:	Stormwater discharge into natural areas – water quantity impacts.	
Nature of impact:	Negative	
Extent and duration of impact:	Local and long-term	
Consequence of impact or risk:	May lead to change in hydrological patterns in wetlands, rivers (stream 10 and Dwars River) and groundwater.	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss	
Degree to which the impact can be reversed:	Partly reversible	
Indirect impacts:	Changed hydrology in the Dwars River downstream.	
Cumulative impact prior to mitigation:	Medium (-)	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Medium (-)
Degree to which the impact can be avoided:	Medium to high	Medium
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	Downpipes from renovated buildings to discharge to filtration areas.	Runoff from agricultural lands should discharge into filtration areas some distance from the stream and wetlands, to allow for infiltration to ground.
Residual impacts:	Although Duty of Care applies to the No-go alternatives, it is unlikely that mitigation measures will be implemented. Residual impacts are likely.	
Cumulative impact post mitigation:	Medium (-)	

Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	Low (-) to medium (-)
Note on impact: Given that different uses within what is permitted would have somewhat different effects on the freshwater ecosystem, the no-go alternative has been split into two categories for the freshwater impact assessment.		
Potential impact and risk:		
On-site treatment of wastewater – impacts on water quality		
Nature of impact:	Negative	n/a
Extent and duration of impact:	Local and long-term	n/a
Consequence of impact or risk:	May lead to contamination of soils, groundwater, and aquatic ecosystems.	
Probability of occurrence:	Probable	n/a
Degree to which the impact may cause irreplaceable loss of resources:	Minimal loss	n/a
Degree to which the impact can be reversed:	Partly reversible	n/a
Indirect impacts:	Pollution of the Dwars River downstream, and of groundwater	
Cumulative impact prior to mitigation:	Medium (-)	n/a
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	n/a
Degree to which the impact can be avoided:	Medium to high	n/a
Degree to which the impact can be managed:	High	n/a
Degree to which the impact can be mitigated:	Medium	n/a
Proposed mitigation:	n/a	
Residual impacts:	Although Duty of Care applies to the No-go alternatives, it is unlikely that mitigation measures will be implemented. Residual impacts are likely.	n/a
Cumulative impact post mitigation:	Medium (-)	n/a
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	n/a
Note on impact: Given that different uses within what is permitted would have somewhat different effects on the freshwater ecosystem, the no-go alternative has been split into two categories for the freshwater impact assessment.		
Potential impact and risk:		
Proximity of buildings and human activity to the wetlands and Dwars River. This may lead to local disturbance of fauna and flora, through noise, light, trampling, etc. Fauna may move away from the site.		
Nature of impact:	Negative	
Extent and duration of impact:	Local and long-term	
Consequence of impact or risk:	May lead to a loss of habitat quality and movement of flora and fauna away from the site.	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Significant loss	
Degree to which the impact can be reversed:	Fully reversible	
Indirect impacts:	Movement of fauna and flora from the site onto the broader Estate, or movement of species away from the Estate altogether, towards less disturbed sites.	
Cumulative impact prior to mitigation:	Low (-) to medium (-)	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	
Degree to which the impact can be avoided:	Medium to high	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	Lighting should face away from the wetlands, and stream. Visitors should be discouraged from walking on the bed and banks of the stream, and	

	into the wetter areas, through construction of walkways and benches, guiding visitors to use specific pathways and areas.
Residual impacts:	Although Duty of Care applies to the No-go alternatives, it is unlikely that mitigation measures will be implemented. Residual impacts are likely.
Cumulative impact post mitigation:	Low (-) to medium (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Note on impact: Given that different uses within what is permitted would have somewhat different effects on the freshwater ecosystem, the no-go alternative has been split into two categories for the freshwater impact assessment.	
Potential impact and risk:	
	Disturbance of soils for landscaping / maintenance of gardens/agricultural activities. Alien or invasive seeds and seedlings may be transported onto site. Alien vegetation is well adapted to establishing on previously disturbed soils and road verges.
Nature of impact:	Negative
Extent and duration of impact:	Local and long-term
Consequence of impact or risk:	May lead to a loss of habitat quality, and increased water uptake through transpiration.
Probability of occurrence:	Probable
Degree to which the impact may cause irreplaceable loss of resources:	Significant loss
Degree to which the impact can be reversed:	Fully reversible
Indirect impacts:	Spread of Invasive Alien Plants from the site onto the broader Estate, and downstream towards the Dwars River.
Cumulative impact prior to mitigation:	Low (-) to medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	Medium to high
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Remove alien vegetation from the site.
Residual impacts:	Removal of alien vegetation on site is unlikely to occur, so the impact will remain.
Cumulative impact post mitigation:	Low (-) to medium (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Note on impact: Given that different uses within what is permitted would have somewhat different effects on the freshwater ecosystem, the no-go alternative has been split into two categories for the freshwater impact assessment.	

Alternative 4 (no-go/existing rights):	
Potential impact and risk:	Impacts on faunal movement through the site
Nature of impact:	Restriction of passage of fauna through the site
Extent and duration of impact:	Local (within site boundary) and throughout the lifetime of the project
Consequence of impact or risk:	Reduction of faunal movement through the area mapped as a faunal corridor (refer to Figure 33) and diversion of fauna around the proposed development, particularly if fencing is implemented around the site for demarcation as a grazing area
Probability of occurrence:	Possible for certain species of fauna
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	Medium
Indirect impacts:	Narrowing of passage for fauna in this area could restrict the movement between breeding and foraging habitats, the inclusion of a fence around the area may exacerbate this
Cumulative impact prior to mitigation:	Low (-)

Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (-)
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Implementation of the specifications in the EMPr (Appendix H) which pertain to the design and management of faunal movement through the farm. Note, however, that development within existing land use rights would not require any mitigation.
Residual impacts:	Diversion of faunal passage around hard structures, facilitation of movement through appropriately designed fencing, noting that passage would still likely occur
Cumulative impact post mitigation:	Very Low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
<p>Note on significance of impact: This impact has been assessed by the EAP and considers the possibility of fencing being implemented around the site should it be used for grazing, the retention of existing structures (which would serve as a nominal barrier and require fauna to divert around structures), as well as the possibility of dense crops on site. However, it also assumes that general measures to facilitate faunal movement would be included in the fence design (i.e. makes use of wooden farm fences where the lowest truss is sufficiently high off the ground for smaller fauna to pass underneath) as well as spacing of crop rows. It has also been considered that the site would not contain any indigenous vegetation and thus not provide a natural habitat for local fauna.</p>	
Nuisance Impacts	
Potential impact and risk:	Dust
Nature of impact:	The cultivation or used of the site for grazing would result in the generation of dust which may be a nuisance to surrounding land users, in perpetuity.
Extent and duration of impact:	Local (on site and, although this would likely be experienced from adjacent to the site, the site is located well within farm limits), long-term
Consequence of impact or risk:	Localised increased dust on surfaces and possible sinus concerns for workers adjacent to the site,
Probability of occurrence:	Definite
Degree to which the impact may cause irreplaceable loss of resources:	None
Degree to which the impact can be reversed:	Irreversible
Indirect impacts:	Workers adjacent to the site may have to clean surfaces more and may require some minor treatment of sinus issues, however this would be unlikely
Cumulative impact prior to mitigation:	Low (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated:	Low
Proposed mitigation:	Implementation of the specifications in the EMPr (Appendix H) which pertain to the management of the dust elements of the operational activities on the farm. Note, however, that development within existing land use rights would not require any mitigation.
Residual impacts:	Minor additional dust (during working hours) in environments adjacent to the site
Cumulative impact post mitigation:	Very Low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low (-)
<p>Note on significance of impact: Note that there are a few houses occupied by Boschendal staff nearby the site and the workers move around the farm so would not be permanently stations adjacent to or on the site. The impacts of this alternative would be slightly greater than that of the proposed development alternative given that planting of crops would result in more exposed ground.</p>	
Heritage- Architecture	
Potential impact and risk:	Medium

Nature of impact:	Loss of the cottages through either demolition or dereliction would constitute a loss of a layer of the farm's history as expressed in the variety of architectural styles present on the farm.
Extent and duration of impact:	N/A
Consequence of impact or risk:	Loss of layers of history across the farm
Probability of occurrence:	High
Degree to which the impact may cause irreplaceable loss of resources:	Medium
Degree to which the impact can be reversed:	Low
Indirect impacts:	Indirect impacts can arise to the associated cultural landscape and the authenticity of the farm more broadly
Cumulative impact prior to mitigation:	Medium (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (-)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Retain examples of the Amfarms cottage types in largely unaltered form to illustrate and inform about this period of Boschendal's history
Residual impacts:	Low
Cumulative impact post mitigation:	Low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Note on significance of impact: From a heritage perspective, impacts are not a reflection of degree of intervention or retention of fabric. As such, the no-go alternative only reflects no development, not partial development, and partial retention of fabric and/or form.	
Heritage- Landscape	
Potential impact and risk:	Low
Nature of impact:	Loss of built fabric illustrative of different periods of Boschendal history will reduce the heritage significance of the farm as a whole
Extent and duration of impact:	N/A
Consequence of impact or risk:	Negative impacts will arise to the layered nature of the cultural landscape through loss of categories of built forms, in this case, recent farmer workers' cottages
Probability of occurrence:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Low
Degree to which the impact can be reversed:	High
Indirect impacts:	Indirect impacts can arise to the associated cultural landscape and the authenticity of the farm more broadly
Cumulative impact prior to mitigation:	Medium (neutral, slightly negative)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium (neutral, slightly negative)
Degree to which the impact can be avoided:	High
Degree to which the impact can be managed:	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Retention of examples of all categories of built form enhance the authenticity of the cultural landscape as a layered expression of the farm's past
Residual impacts:	Low
Cumulative impact post mitigation:	Low (neutral, slightly negative)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (neutral, slightly negative)
Note on significance of impact: This impact would present an opportunity cost in that there would be a lost opportunity for development which could contribute positively to the landscape.	
Heritage- Social	
Potential impact and risk:	Medium
Nature of impact:	The loss of these cottages through either demolition or dereliction represents the loss of representative samples of recent labour practices and worker's lives on the farm

Extent and duration of impact:	N/A
Consequence of impact or risk:	Severing the landscape from its history of workers and the conditions and fact of their life and labour on the farm not only directly impacts those who occupied the cottages in the past but permeates all aspects of the farm's viability.
Probability of occurrence:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	High
Degree to which the impact can be reversed:	Low
Indirect impacts:	Missed opportunities of achieving or implementing social redress have extensive indirect impacts that function at the site, farm, and valley scale, and are felt throughout South African society
Cumulative impact prior to mitigation:	Very High (neutral, slightly negative)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High (neutral, slightly negative)
Degree to which the impact can be avoided:	Medium
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	This loss cannot be mitigated
Residual impacts:	High
Cumulative impact post mitigation:	Very High (neutral, slightly negative)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very High (neutral, slightly negative)
Note on significance of impact: This impact would present an opportunity cost in that there would be a lost opportunity for development which could contribute positively to social redress.	
Resource-use	
Potential impact and risk:	Depletion of resources through use of resources such as energy, fuel, and water
Nature of impact:	Use of natural resources, such as water, resources for the generation of energy and fuel
Extent and duration of impact:	Widespread beyond site boundary, long-term
Consequence of impact or risk:	Depletion in resources
Probability of occurrence:	Definite
Degree to which the impact may cause irreplaceable loss of resources:	High
Degree to which the impact can be reversed:	Irreversible
Indirect impacts:	Fewer resources available
Cumulative impact prior to mitigation:	Very low (-)
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	Medium
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Implementation of, primarily, water saving measures or planting of crops which are more drought-tolerant. However, use within existing rights would not require the enforcement of mitigation measures.
Residual impacts:	Controlled use of resources
Cumulative impact post mitigation:	Very low (-)
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low (-)
Note on significance of impact: This alternative would require a significant amount of water, should crops be planted. If the buildings are used, then they would require energy and potable water as well. Fuel would be needed for the machinery used to maintain the crops.	
DECOMMISSIONING AND CLOSURE PHASE	
Decommissioning or closure of existing land use rights has not been assessed as the rights are legally in place and would not require Environmental Authorisation or any associated conditions of authorisation in order to be realised.	

SUMMARY OF IMPACTS

Table 8 Summary of Impacts

Phase	Impact	Alternatives 1, 2 and 3 (preferred)		No- Go Alternative 1		No- Go Alternative 2	
		Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Planning, design, and development	Physical: Altering the surface drainage regime	Low (-)	Neutral	N/A	N/A	N/A	N/A
	Socio-economic: Generation of local economic stimulus	Medium (+)	Medium (+)	N/A	N/A	N/A	N/A
	Nuisance Impacts: Noise and Dust	Low (-)	Very Low (-)	Low (-)	Very Low (-)	Low (-)	Very Low (-)
	Visual: Adverse visual/ aesthetic impacts	Low (-)	Very Low (-)	N/A	N/A	N/A	N/A
	Natural Resources: Depletion of Natural Resources through use as material in the development/construction phase	Low (-)	Very low (-)	Low (-)	Very low (-)	Low (-)	Very low (-)
	Traffic: Effect on LOS of local road network during the operational phase (Some minor congestion could be experienced during morning peak along the local road network, or a slightly longer waiting period to cross the Dwars River Bridge in the morning peak)	Low (-)	Low (-)	N/A	N/A	N/A	N/A
	Traffic: Traffic Congestion on local road network during construction	Low (-)	Very Low (-)	N/A	N/A	N/A	N/A
	Freshwater: Storage of building or demolition materials (sand, soil, bricks etc) in or close to sensitive areas – this would damage the soil structure and would destroy or shade out plants growing in and around these ecosystems. Dump areas frequently lead to the compaction of soils, which can influence re-growth of plants.	Low (-)	No impact	Low (-) to no impact	Low (-) to no impact	Low (-)	Low (-)
	Freshwater: Leakage or spillage of fuels, oils, etc. from construction / demolition machinery – this would lead to pollution of the wetlands or stream.	Low to medium (-)	Low (-)	Low (-)	Low (-)	Low (-) to medium (-)	Low (-) to medium (-)
	Freshwater: Foot and vehicular traffic across the site, leading to destruction or deterioration of freshwater habitat.	Low (-)	No impact	Low (-)	Low (-)	Low (-) to medium (-)	Low (-) to medium (-)
	Freshwater: Presence of construction / demolition teams and their machinery on site – this may lead to noise and light pollution in the area, which will disturb aquatic and terrestrial fauna and flora.	Low (-)	Low (-)	Low (-)	Low (-)	Low (-) to medium (-)	Low (-) to medium (-)
	Freshwater: Construction or demolition activities close to the wetlands or stream will lead to the loss of natural vegetation cover, and subsequent loss of biodiversity.	Low to medium (-)	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)
	Freshwater: Construction or demolition activities close to the wetlands or stream may lead to an increased input of mobile sediments, especially during the wet winter months when rain and runoff may cause erosion and sedimentation.	Low to medium (-)	Low (-)	Low (-)	Low (-)	Low (-) to medium (-)	Low (-) to medium (-)
	Freshwater: Topsoil or sand brought onto the site, for filling and landscaping can lead to the introduction of alien or invasive seedbanks.	Low to medium (-)	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)
Heritage- Archaeology: Impacts are possible to subsurface remains, should these occur, during developmental stage through	Medium (-)	Medium (-) or minor Low (+) if it contributes to site identification	None	None	None	None	

	trenching and earthmoving activities related to construction activities.						
	Heritage- Architecture: The cottages hold no architectural significance and no impacts will arise. Unsympathetic alteration could, however, result in the loss of a layer of the farm's history as expressed in the variety of architectural styles present on the farm.	Medium (-)	Low (+)	Medium (-)	Low (-)	Medium (-)	Low (-)
	Heritage- Landscape: Inappropriate landscaping interventions will interfere with the ability of the new development to sit in the landscape in an authentic, sympathetic manner, which is crucial to retaining the significance of the cultural landscape.	Medium (-)	Low (+)	Medium (neutral, slightly negative)	Low (neutral, slightly negative)	Medium (neutral, slightly negative)	Low (neutral, slightly negative)
	Heritage- Social: Redevelopment of former workers' cottages risks erasing traces of those people's lives and labour from the Boschendal landscape, negatively affecting the authenticity of the farm as a heritage site.	High (-)	Medium (+)	High (neutral, slightly negative)	Very High (neutral, slightly negative)	High (neutral, slightly negative)	Very High (neutral, slightly negative)
Operational Phase	Fauna: Impacts on faunal movement through the site (Restriction of passage of fauna through the site)	Medium (-)	Low (-)	Medium (-)	Low (-)	Medium (-)	Low (-)
	Heritage-Archaeology: No impacts are anticipated to archaeological heritage during the operational phase	N/A	N/A	N/A	N/A	N/A	N/A
	Heritage- Architecture: The cottages hold no architectural significance and no impacts will arise. Unsympathetic alteration could, however, result in the loss of a layer of the farm's history as expressed in the variety of architectural styles present on the farm.	Medium (-)	Low (+)	Loss of the cottages through either demolition or dereliction would constitute a loss of a layer of the farm's history as expressed in the variety of architectural styles present on the farm. Medium (-)	Low (-)	Medium (-)	Low (-)
	Heritage- Landscape: Inappropriate landscaping interventions will interfere with the ability of the new development to sit in the landscape in an authentic, sympathetic manner, which is crucial to retaining the significance of the cultural landscape.	Medium (-)	Low (+)	Loss of built fabric illustrative of different periods of Boschendal history will reduce the heritage significance of the farm as a whole Medium (neutral, slightly negative)	Low (neutral, slightly negative)	Medium (neutral, slightly negative)	Low (neutral, slightly negative)
	Heritage- Social: Redevelopment of former workers' cottages risks erasing traces of those people's lives and labour from the Boschendal landscape, negatively affecting the authenticity of the farm as a heritage site.	High (-)	Medium (+)	The loss of these cottages through either demolition or dereliction	Very High (neutral, slightly negative)	High (neutral, slightly negative)	Very High (neutral, slightly negative)

				represents the loss of representative samples of recent labour practices and worker's lives on the farm High (neutral, slightly negative)			
	Socio-economic: Generation of local economic stimulus in perpetuity (Creation of employment opportunities as a result of operation of the proposed development. Note that additional indirect stimulus as a result of attracting more tourists to the area would also result.)	Medium (+)	Medium (+)	N/A	N/A	N/A	N/A
	Resource- use: Depletion of resources through use of resources such as energy and water and production of waste as a result of domestic activities	Low (-)	Very low (-)	Low (-)	Very low (-)	Low (-)	Very low (-)
	Nuisance Impacts- Dust- The cultivation or used of the site for grazing would result in the generation of dust which may be a nuisance to surrounding land users, in perpetuity.	N/A	N/A	Low (-)	Very Low (-)	Low (-)	Very Low (-)
	Terrestrial Biodiversity	Low (+)	N/A	N/A	N/A	N/A	N/A

Table 9 Summary of Impacts (2)

Phase	Impact	Alternative 1		Alternative 2		Alternative 3 (Preferred)		No-Go Alternative 1		No-Go Alternative 2		
		Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation	
Operational Phase	Freshwater: Stormwater discharge into natural areas – water quality impacts.	Medium (-)	Low (-)	Medium (-)	Low (-)	Low (-)	Negligible	Low (-)	Low (-)	Medium (-)	Medium (-)	
	Freshwater: Stormwater discharge into natural areas – water quantity impacts.	Low to medium (-)	Low (-)	Low to medium (-)	Low (-)	Low (-)	Negligible	Low (-)	Low (-)	Medium (-)	Low (-) to medium (-)	
	Freshwater: Proximity of buildings and human activity to the wetlands and Dwars River. This may lead to local disturbance of fauna and flora, through noise, light, trampling, etc. Fauna may move away from the site.	Low to medium (-)	Low (-)	Low to medium (-)	Low (-)	Low to medium (-)	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)
	Freshwater: Disturbance of soils for landscaping / maintenance of gardens/agricultural activities. Alien or invasive seeds and seedlings may be transported onto site. Alien vegetation is well adapted to establishing on previously disturbed soils and road verges.	Low (-)	Low (+)	Low (-)	Low (+)	Low (-)	Low (+)	Low (-)	Low (-)	Low (-)	Low (-)	Low (-)

	Ecological- Freshwater: On-site treatment of wastewater – impacts on water quality	Medium (-)	Low to medium (-)	Medium (-)	Low (-)	Low (-)	Negligible/ Low (-)	Low (-)	Low (-)	N/A	N/A
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SECTION I: FINDINGS, IMPACT MANAGEMENT AND MITIGATION MEASURES

1.	Provide a summary of the findings and impact management measures identified by all Specialist and an indication of how these findings and recommendations have influenced the proposed development.
<p>Visual/Landscape</p> <p>Baseline and Findings</p> <p>Although located along an important historic connection route, the site itself is not highly visible (Smuts & Scurr, 2020). From the north it is obscured from view by trees planted around the York Farm managers' cottages which are located just north of the site and from the south it is visible at the Boschendal property gate on the road to Lanquedoc, but not further than that as the road curves towards Lanquedoc (Smuts & Scurr, 2020). As such, the site is not visible for most of the alignment of the waped and the cluster of cottages (also then the proposed cottages as the footprint and massing would be very similar) is not visible either from the R310 or the R45, both of which are scenic routes (Smuts & Scurr, 2020). The site is further not visible from Boschendal werf or much visible from any parts of the farm west of the R310 due to the undulating topography across the area, the mature plantings across much of Boschendal and the modest scale of the structures (Smuts & Scurr, 2020).</p> <p>The most significant view corridor for the proposed development is that from the Rhone werf and to the Rhone werf (Smuts & Scurr, 2020). Both sites are visible to the other, however the views from the werf to the proposed development is of low significance because of the mature trees surrounding the werf, which obscure views of the cottages, as well as the north-facing orientation of the Rhone werf (Smuts & Scurr, 2020). Furthermore, Smuts & Scurr (2020) conclude that the proposed redevelopment of the cottages (with mitigation) would not result in any further visual impacts on Rhone than are already affected by the existing settlement. The views of Rhone from York Farm would also serve to embed the settlement in the Boschendal cultural landscape and would not be occluded or crowded by any of the proposed development interventions (Smuts & Scurr, 2020).</p> <p>Impacts and Mitigation</p> <p>Mitigation measures provided in the HIA are listed under "heritage" in section I 2 below.</p> <p>Response</p> <p>The site lies in the fertile valley created by the Dwars River and is situated in the flood-plain between the historic "Ou Wa-pad" and the current main access route (<i>pers comms</i>, A. Bormans, 29/05/2020).</p> <p>The proposed design of the cottages maintains their simple design and modest scale/ massing. The proposed modest scale of redevelopment, combined with the low key additions and extensions to the existing cottages limits the visual impacts from the various vantage points across Boschendal and the Dwars River valley at which the location is visible (Smuts & Scurr, 2020).</p> <p>The landscape plan was developed by TERRA+ Landscape Architects to ensure that the site could be integrated into the existing landscape and in doing so, not negatively impact on the local and broader landscape from a visual perspective. To ensure integration of the site with the landscape, the plan focuses on restoration of remnants of the natural systems and habitats in the area, and the recreation of a domestic scale productive landscape similar to what might have existed prior to the previous site occupants' removal (see also section 1.6 and Annexure J). The latter is in response to the need to memorialise in some way, past use of the site. The intention is for the site to be as self-sufficient as possible, and so a vegetable garden is a major component of the landscape plan. The site has been described as disturbed from an environmental perspective, thus all interventions will contribute to its rehabilitation.</p> <p>Following a tree survey (refer to Appendix G(g)) and a contextual and visual analysis, local landscape patterns and landscape design indicators were identified. The design response is directly influenced by these indicators as is the spatial ordering of the site on a meta-scale, through the use of tree lines and strong connections to the broader landscape using rehabilitated fynbos corridors (refer to Error! Reference source not found. for the Landscape Plan)</p> <p>Heritage</p> <p>Baseline/ Findings</p> <p>The site does not have any apparent archaeological sensitivity (Smuts & Scurr, 2020) as a result of the pasturage history and location of the site far from historic werfs. It remains possible that significant subsurface archaeological remains could be encountered during development.</p> <p>Smuts & Scurr (2020) confirms that there is a tangible heritage resources in the wider study area which forms a vital component of, and inform, the site and these include the Ou Waped (an historic route which runs from the R45 in the north to Lanquedoc, Pniel and Kylemore in the south).</p> <p>The cultural landscape is also highly significant, and different than the rest of the farm, and comprises an exposed, less tended, wilderness which also forms part of the very important Grade I CWCL.</p> <p>In terms of intangible heritage, while the derelict cottages themselves have been confirmed to hold no architectural or aesthetic significance, Smuts & Scurr (2020) state that they are representative of a social layer of history which imprints significant memory on the site. The site was once lived on by farm workers who enjoyed various aspects of the site itself and the farm and natura context it is situation within, a life which was disrupted and truncated by the removal of workers off Boschendal in the early 2000s (Smuts & Scurr, 2020). The social significance of the farm and the site is high given its long history of use, and the particular sensitivities arising from the unequal and discriminatory labour practices from the time of slavery to the recent past (Smuts & Scurr, 2020).</p> <p>Overall, Smuts & Scurr (2020) conclude that the proposed development (with mitigation) could go ahead without impacting the built heritage or highly sensitive cultural landscape which his typical of the surrounding context of that part of the farm or</p>	

the heritage significance of the site, the memory of which can be carried through the proposed development. It is further added that the proposed development provides an opportunity to revitalise a site that conforms to historical settlement patterns and provide greater connection along the ou wapad between the farm and the local community (Smuts & Scurr, 2020).

Regarding the potable water line, that runs from the Boschendal gate to Lanquedoc links the historic workers' village of Lanquedoc with the R310 (Smuts & Scurr, 2021). Lanquedoc consists of its historic core of cottages designed by Sir Herbert Baker for Rhodes' workers at the turn of the C20th, and more recent RDP and low-cost workers' accommodation (Smuts & Scurr, 2021). The historic settlement of Lanquedoc carries high significance in terms of architectural and landscape significance, as well as social significance (Smuts & Scurr, 2021). In terms of archaeology, historic material from the c20th is likely to be found within the settlement of Lanquedoc itself, but significant material beyond the limits of the village, and within the road reserve, are not anticipated (Smuts & Scurr, 2021).

Impact Mitigation

Smuts & Scurr (2020) list several recommendations which must be fulfilled in order to ensure that adverse impacts are kept to a minimum and that positive impacts are enhanced. These are all listed under "heritage" in Section I 2 below.

No significant impacts on heritage resources are anticipated as a result of the proposed potable water line to Lanquedoc (Smuts & Scurr, 2021).

Many of the design, layout and landscaping measures are implicit in the proposed development. These have all been included in the EMPr.

Response

There is substantial development potential in the York Farm site which arises from a confluence of the interplay between site and landscape significance and site location and position (Smuts & Scurr, 2020). The relatively lower significance of the surrounding landscape, (relative to the western extent of Boschendal) combined with the lack of intrinsic significance of the materiality, form and fabric of the cottages makes development of this site and these structures viable from a cultural landscape and heritage perspective (Smuts & Scurr, 2020). Further to this, from a social heritage perspective, the location of the site along the ou wapad, makes it a logical site for development in keeping with organic, historic development patterns and strategies across Boschendal Farm and the Dwars River valley (Smuts & Scurr, 2020).

Finally, a degree of synchronicity arises from the proposed use of this site and these buildings to house the Bertha Foundation, an NGO that focuses on achieving social and environmental justice, and human rights for political and climate activists (Smuts & Scurr, 2020). It has previously been noted that, while not all 1980s Amfarms cottages on Boschendal warrant retention, a sample structure should be retained, largely unaltered, as an example of the type and times that it represents (Smuts & Scurr, 2020). The New Retreat provides a logical and apposite location to achieve this end, and to tell this story, through the retention of a single cottage that is largely unaltered but made good and fit for purpose (Smuts & Scurr, 2020).

The proposed development also respects the need to retain the internal courtyard and does so by retaining it in the proposal and intending to use it for communal activities (which it was used for historically) (Smuts & Scurr, 2020). The proposal makes use of the internal courtyard space for communal activities, with kitchen gardens and private spaces created in the area outside of the ring of cottages (Smuts & Scurr, 2020) which honours the historic vegetable gardens used by the previous occupants. It is further proposed that part of the internal space be made available for producers and traders from the local communities to showcase and sell their items (Smuts & Scurr, 2020), thereby increasing the link between the site and nearby communities.

Internal design and décor would respond to the distinct character of the context through appropriate use of colour texture and materials as well as making use of organic shapes and informal arrangements that reflect the "wilderness" of the context and landscape (Smuts & Scurr, 2020). The variation would be further enhanced through a variety of expression in a way that is fit for the various uses intended for the proposed development (e.g. reception, Lalela, accommodation) (Smuts & Scurr, 2020). The informal and irregular patterns in the landscape are also reflected in the proposed landscape plan, which also pays homage to the small vegetable gardens and individual gardens enjoyed by historic residents (Smuts & Scurr, 2020).

The siting of the proposed development along the Ou Wapad, as well as the nature of the proposal's connectivity to the communities around it, serve to initiate the re—invigoration and reconnection of the ou wapad, thereby taking steps toward authentic restorative redevelopment (Smuts & Scurr, 2020).

The routing of the proposed potable water line to Lanquedoc has also been devised to avoid sensitive heritage resources (and it would be underground) and there would be archaeological monitoring implemented during construction through the EMPr.

Terrestrial Biodiversity Sensitivity

Baseline/ Findings

The site and potable water pipeline routes are of Low botanical and faunal diversity and sensitivity, and presents no faunal or botanical constraints to the proposed development, other than the seasonal drainage line on the eastern edge of the site (to be addressed by freshwater specialist), where development planning should be in line with what is recommended by the freshwater specialist.

The overall ecological significance of the development of the site (excluding the seasonal drainage line on the eastern edge of the site) and installation of the potable water pipelines would be Low negative (before mitigation) on a regional scale.

The proposed development could actually enhance the ecological status of the site and surrounding area, by means of increasing the current indigenous plant diversity and cover (as proposed in development layouts) and making it more attractive to a wider range of birds and insects.

Impact Mitigation

No specific ecological mitigation is thus required, but it is noted that the landscaping plan is proposing extensive use of indigenous plants, which is supported. The proposed *Podocarpus falcatus* (Real yellowwood) should be replaced with *Ekebergia capensis* (Cape ash) or *Harpephyllum caffrum* (Wild plum), as the former is not adapted to the hot, dry summers in this area. The tall restio, *Restio paniculatus*, should also be added to the planting list, for damper areas.

Response

Helme (2021) confirms that the proposed development could be authorised without any regionally or nationally significant ecological impacts.

The proposed landscaping includes a large fynbos rehabilitation component which would enhance the terrestrial ecological condition the site and provide for improved terrestrial biodiversity.

In general, the proposed development is also located in an area of low ecological sensitivity and around existing structures to make better use of transformed areas. This also applies to the proposed potable water line to Lanquedoc which has been deliberately planned to be located outside of any sensitive areas. No further impact assessment is necessary regarding the proposed bulk water pipeline routing given that the location of the line would be routed within the low sensitivity areas confirmed in Helme (2021). This routing has been intentionally devised so as not to affect more sensitive habitat and thus avoids potential adverse impact in this regard (Helme, 2021). The same holds true for the temporary pipeline which would run within an existing roadway.

Freshwater

Baseline/ Findings

Snaddon (2021) confirmed three freshwater resources on/near the site, namely the perennial stream 10 which runs along the eastern edge of the site, the Dwars River valley-bottom wetland and the seep wetland to the west of the site. The upper reaches of stream 10 has a high ecological importance and sensitivity, while the lower river is of moderate EIS (Snaddon, 2021). Both wetlands are transformed from the natural state, as a result of the long history of cultivation of the Estate and there is evidence of excavations and berms in both wetlands, as well as roads and tracks (Snaddon, 2021). The "New Retreat seep" wetland was assessed to be in a Category D – largely modified – while the Dwars River valley-bottom wetland lies in a category C – moderately modified (Snaddon, 2021). Overall, the Dwars River valley-bottom wetland was placed in the High EIS category, and the seep wetland in the Moderate category (Snaddon, 2021).

Two Ecological Corridors pass through the New Retreat site, one along Stream 10 and the other following the Dwars River (Snaddon, 2021).

The route for the proposed water supply line to Lanquedoc would cross stream 11 as well as its associated seep. Stream 11 is an earth-lined channel with cobble and fine sediments and the watercourse has been heavily invaded by invasive alien plants, with few indigenous riparian plants remaining in the riparian area (Snaddon, 2021). Stream 11 is surrounded by a seep wetland that extends uphill towards Lanquedoc and the diversion channel, with the seep having approximately 10% invasive alien plants and the remainder as indigenous vegetation (Snaddon, 2021). Stream 11 and its associated seep both hold a moderate ecological importance and sensitivity and in terms of Present Ecological Status (PES), they are both category D (largely modified) watercourses (Snaddon, 2021).

The interim water supply line would cross stream 10 as well as run very close to a seep below the York Dam. The York Dam seep wetland has been assessed as being in a PES category C – this seep has also been transformed by the presence of the road and the dam, and a few farm buildings. The wetland vegetation persists, however, including palmet, *Prionium serratum* (Snaddon, 2021). In terms of EIS, the seep lies in the Moderate category (Snaddon, 2021). The key mitigation measure recommended by Snaddon (2021) to protect the York Dam seep wetland is to place the temporary pipeline on the side of the road that is away from the seep wetland, so as to avoid the wetland..

The impact of the proposed development has been assessed, with the assessment covering three layout/servicing alternatives, as well as two versions of the no-go alternative (all within the existing rights currently permitted, but split out because certain of those land uses would have different impacts on the freshwater system). Note also that the freshwater impact assessment for the two development alternatives that are not preferred covers the potential water line and reservoirs required for one of the municipal bulk water connections proposed as well as the proposed (and preferred) interim and permanent potable water line of the preferred alternative It also covers the proposed flood remediation and rehabilitation works to stream 10.

In general, the impacts anticipated would be similar for all alternatives assessed (including the existing rights/ no-go alternative), but the severity/ significance would differ among alternatives. Construction phase impacts of freshwater resources are anticipated to include compaction and damage of soil structures, pollution of the wetlands or stream, disturbance of aquatic and terrestrial fauna, loss of natural vegetation cover and subsequent loss of biodiversity, erosion and sedimentation and the introduction of alien or invasive seedbanks which adversely affects natural biodiversity (Snaddon ,2021). The operational impacts anticipated include decreased water quality as a result of stormwater run-off, changes to water quantity through additional run-off and increased frequency of flood peaks and volume entering the freshwater systems, contamination of soils, groundwater and aquatic ecosystems from leaks in the sewage package plant, disturbance of fauna and flora, as well as compromised biodiversity through import of alien or invasive seeds and seedlings (Snaddon, 2021).

Primary cumulative impacts relate to the loss of open space, through catchment hardening, loss of riverine or wetland habitat, as a result of encroachment into ecosystems and/or their ecological buffers, as well as deterioration in water quality, from discharge of stormwater or treated waste water into natural areas (Snaddon, 2021).

The implementation of mitigation measures would reduce the above-mentioned impacts to low and/or negligible levels for the proposed development (note, the preferred alternative).

With mitigation, development Alternative 3 poses at worst a low (with much negligible) risk to the characteristics of the inland aquatic ecosystems affected by the development, and it is recommended that the development be generally authorised in terms of a Section 21 (i) water uses (Snaddon, 2021), an approach which has also been confirmed by the DWS (refer to Appendix M for evidence thereof). Use of treated effluent for toilet flushing and on-site containment and infiltration of stormwater, would also avoid Section 21 (e) and (g) water uses, but this is not part of the preferred alternative (Snaddon, 2021). The preferred alternative would eliminate the risks in this regard to low (-)/negligible through the use of the conservancy tank as proposed in the preferred alternative (i.e. Alternative 3).

Overall, No-go Alternative 1 is the preferred option from an aquatic ecological perspective, due to minimal disturbance and limited continued use of the site. In terms of the development options, Alternative 3 will have a comparatively (and marginally so) lower impact on the aquatic ecosystems than Alternative 1 and Alternative 2 and is thus the preferred development alternative. The implementation of all mitigation measures proposed may ultimately be a positive impact on the environment (Snaddon, 2021), noting that there is a river rehabilitation plan that would be implemented with the flood management measures indicated in the proposed development description.

Impact Mitigation

Mitigation measures to limit the impact of the proposed development on the wetlands and stream are listed in Snaddon (2021) and included in Section 1 2 under "Freshwater" below.

Response

Through the freshwater impact assessment, appropriate buffers have been established and these are responded to in the proposed development by avoiding development of buildings within those areas (note that the expanded footprint would stick closely to the limits of existing buildings). Some components of landscaping would fall within the buffers or within the Dwars River valley-bottom wetland, but mitigation measures for design and construction have been provided and their implementation would ensure low impact on the wetlands and stream.

By ensuring that any new hard development avoids the corridors, which align with the ecological buffers, and with implementation of the mitigation measures recommended in the freshwater impact assessment report, the ecological integrity of the corridors should be maintained (Snaddon, 2021). Furthermore, the development alternative which is preferable from an ecological perspective (i.e. Alternative 3) has also been put forward as the preferred alternative for Environmental Authorisation, given that it would have a comparatively lower risk/adverse impact on the freshwater resources on and near the site. There is also a stream rehabilitation plan included in the proposed development.

Several mitigation measures have been provided by Snaddon (2021) which have all been included in the EMPr. With the implementation of all mitigation measures, specifically including implementation of the rehabilitation plan, effective site monitoring, the conservation of all mature riparian trees, use of compacted earth for pathways in the buffers, and the removal of invasive alien plants (IAPs) from the site, there may ultimately be a positive impact on the environment.

Traffic

Baseline/ Findings

The Transport Impact Assessment confirmed the following existing roadways in the vicinity of the site:

- **R45 (MR 191):** Provincial Main Road: One lane per direction, with paved narrow shoulders and no sidewalks.
- **Helshoogte Road (MR 172/R301):** Provincial Main Road: One lane per direction, with paved sidewalk located on the eastern side of the road.
- **Lanquedoc Main Road:** One lane per direction, no shoulder, and no sidewalks. This reduces to one travel lane over the Dwars River Bridge. One directional traffic flow is maintained over the Dwars River following a first-come, first-cross principle. Speed humps on either side of the bridge.
- **Ou Wapad:** It is a gravel road, located within a 6m wide servitude, which traverses over Boschendal owned property, gated at both ends

The assessment focused on the above roads and the Helshoogte Road/Lanquedoc Main Road and Lanquedoc Main Road/Ou Wapad intersections (Pretorius & Sequeira, 2020). Pretorius & Sequeira (2020) confirm that all the intersections are operating satisfactorily with no capacity conditions being experienced and, while the Dwars River Bridge acts as a pinch-point, the delay is only 2.2 seconds per vehicle. When considering the traffic growth, background traffic conditions as well as the additional trips (28 during the morning peak hour) that would result from the proposed development and their distribution, it was found that impact would have a low impact and no capacity upgrades would be required. No NMT interventions are recommended. Recommendations have been made regarding parking capacity and resurfacing of the bellmouth at the Lanquedoc Main Road/ Ou Wapad intersection.

It is noted that there are plans by the Stellenbosch Municipality to upgrade the Dwars River Bridge in the near future, funding permitting.

Impact Mitigation

Given that impacts are anticipated to be low, minimal mitigation is required. The measures are included in "traffic & transport" in Section 1 2 below.

Response

The proposed development responds to the transport context through including the recommendations from the Transport Impact Assessment into the proposed layout (i.e. the parking), or the operational intentions (i.e. bus turning route) and the requirements of the EMPr (i.e. resurfacing of the Lanquedoc Main Road/Ou Wapad intersection bellmouth). Given the low impacts anticipated, no further response would be necessary.

Fauna

Baseline/ Findings

The site is largely located within a low sensitivity faunal area, however the high-sensitivity faunal areas and the association faunal corridors correlate with the wetlands and river (and associated ecological buffers) associated with the site (refer to Figure 35). The proposed development is consistent with the goals for low and high sensitivity areas indicated in Jackson *et al* (2019). Helme (2021) states that the faunal diversity of the site is low, and typical of disturbed, remnant habitat in the region. No animal Species of Conservation Concern were recorded in the study area, and none are expected to survive in this disturbed area. Faunal sensitivity is Low on a regional scale (Helme, 2021). Fauna noted in the stream included the Cape River Crab, *Potomonautes perlatus*, blackfly larvae, *Simulium* spp., and numerous mayfly nymphs of the family Baetidae. These species are all hardy taxa, tolerant of impacted water quality (Snaddon, 2021).

Ecological sensitivity has also been considered relative to the proposed water supply line and the reservoir for Alternative 2 and this is either adjacent to, or at times encroaching into a faunal corridor. The potable water line along Hoof Road to Lanquedoc pump station for the preferred alternative has also been considered from a faunal sensitivity perspective. Given that the line would be underground and located within the existing farm road and then within existing tarred road or the compacted ground between the edge of the black top and the gum trees, this would not provide any constraints during operation and would, therefore, only require careful management during construction, particularly regarding trenching and measures to limit faunal from getting trapped in the trenches.

Overall impacts on fauna would be low during construction, if mitigation is implemented, and would be positive during operation as the ecological status of the site would be improved upon and more, better quality habitat would be provided in a habitat which is currently transformed (i.e. some of it would become fynbos habitat, which is significant in the area).

Impact Mitigation

Mitigation measures have been included in the EMPr in order to ensure continued movement through the ecological corridors and the site in general, as well as to limit harm to fauna. These measures would be included in the EMPr and are listed in Section 1.2 under "Fauna" below.

Response

The measures included in Snaddon (2021) and Helme (2021) relate to the preservation and improvement of the habitat for riverine and terrestrial fauna respectively, and those methods would respond to the fauna on site and continue to provide them with habitat. Built structures would be located closely to existing structures and would remain outside of any faunal sensitive areas, with the exception of three of the existing easternmost cottages which overlap into this zone. There are also measures in the EMPr to ensure that animals are not harmed during the construction phase and that workers are also educated on potential animal threats to keep all parties safe.

The landscape plan also includes proposed planting of trees and other indigenous vegetation in order to rehabilitate the site and would provide habitat for fauna, which would increase over time as the landscape matures. The EMPr includes measures to consider the use of plants which would attract bees and other insects as well.

Given the proximity of the buildings to a faunal corridor, the proposed development also includes measures that would facilitate faunal movement such as having no fencing around the site, reshaping of river banks for easier faunal access (as recommended in Snaddon, 2021), and ensuring an organic layout with significant planting.

The EMPr includes the relevant measures provided by Jackson *et al* (2019) and also includes measures to be considered which would support protection of fauna during construction and to provide for movement of fauna to the site during operation.

Agricultural Sensitivity

Baseline/ Findings

An Agricultural Sensitivity verification and compliance statement has been conducted (refer to Appendix G(d)) and the findings indicate that detailed soil mapping identifies the soil map unit, on which the site and potable water pipeline routes are located, as being of medium-low soil potential and not recommended for cultivation (Lanz, 2021).

The soil on site is a poorly drained, 80cm deep, sandy soil of the Kroonstad 2000 soil family with a high rock content and a soil potential rating of 3.5 (Lanz, 2021). The soil potential rating is in a category that is not recommended for crop production. Further evidence of the soil being unsuitable for crop production is the fact that this soil map unit has not been cultivated within at least the last 17 years (which is the limit of Google Earth historical imagery), while the surrounding map units, with higher potential rating, are under cultivation (Lanz, 2021).

Because of the poor soils, the site and potable water pipeline routes do not deserve a land capability of more than 7 and the correct agricultural sensitivity, in terms of the four screening tool sensitivity categories (low; medium; high; very high), should therefore be medium (Lanz, 2021).

It is concluded that the proposed development would not have an unacceptable impact on agricultural resources, it would not result in a loss of agricultural potential and that the proposed development is indeed recommended from an agricultural perspective with no further conditions or assessment required.

Impact Mitigation

No adverse impacts on agricultural resources are anticipated and no mitigation measures have been recommended (Lanz, 2021).

Response

The proposed development responds appropriately to the agricultural / soil potential of the site through the selection of a site which has limited soil potential and would be better suited for other activities. The site is not recommended for cultivation and the proposed development on site is recommended from an agricultural perspective.

Structural Investigation

Baseline/ Findings & Mitigation

A structural investigation from an engineering perspective was also undertaken for the derelict cottages on site. The findings and recommendations are combined and essentially the report provides advice on which aspects of the buildings could remain and which would need to be replaced/ reinforced.

Response

The proposed development responds to these recommendations in terms of the hybrid development approach whereby certain aspects would be retained, others refurbished, and others demolished and rebuilt.

2. List the impact management measures that were identified by all Specialist that will be included in the EMPr

Services:

- Services are to be installed as per the plan in Figure 6 (should the preferred alternative be granted Environmental Authorisation).
- A new 160 mm diameter uPVC link main is proposed to be constructed from a connection point (exact location still to be finalised) on the northern fringe of the Lanquedoc PRV water distribution zone (Middelmann & Hurworth, 2021), if the preferred alternative is granted Environmental Authorisation.
- This pipe (the abovementioned pipe) will be aligned along Hoof Road and into Boschendal property (Middelmann & Hurworth, 2021).
- A bulk meter will be required at the Boschendal boundary, and the pipeline will continue as a private main up to the Retreat development, on Ptn 11 of Farm 1674 (Middelmann & Hurworth, 2021). The route investigation and detail design of this link infrastructure will be subject to a formal engineering approval process (Middelmann & Hurworth, 2021).
- The link main will continue into Boschendal farm, along Hoof Road, and terminate at the New Retreat, to supply both potable and fire water to the development. This supply will be managed through a private sub-meter, and is proposed to separate on-site into a 110 mm uPVC Class 16 fire ring and a 50 mm uPVC Class 12 domestic system (Middelmann & Hurworth, 2021).
- A temporary 160 mm diameter uPVC pipeline would be constructed to tie into the existing York Dam 300 mm diameter irrigation supply line that currently feeds a part of the Boschendal Estate irrigation reticulation. The connection would be at an existing "take-off" for water supply to existing houses just off Hoof Road within the York Farm boundary. The existing connection would be upgraded to a 160mm connection. The pipeline would be aligned along the northern side of Hoof Road and the western side of the roadway which extends north towards the connection point. The pipeline will terminate at the entrance of the Retreat. A 160 mm diameter uPVC Class 12 connection will be tied into the main line and feed the proposed meter chamber within the development boundary (Middelmann & Hurworth, 2021).
- A holding tank and combination sand filter and Ultra-violet water treatment plant will be installed at the New retreat site to treat the "irrigation water" to the required quality and standard for potable water.
- The new private sewer system comprises a conventional underground 110 mm diameter class 34 uPVC gravity pipe and manhole system, collecting waste and ablation flow from all the cottages, as well as washdown from the refuse enclosure (Middelmann & Hurworth, 2021).
- The system will gravitate to a small underground pumpstation at the western edge of the development. This pumpstation is proposed to comprise two 1,5kW pumps that will operate 'flip-flop' (alternating standby and duty), with simple flexible hoses, non-return valves, external wall mounted control panel and alarm link (Middelmann & Hurworth, 2021).
- The 75 mm diameter rising main will be aligned along the south-western edge of the development footprint, and discharge is proposed to be contained in a conservancy tank located outside of the development but on private property on the south side of Hoof Road (Middelmann & Hurworth, 2021).
- The conservancy tank will have capacity for 30m³, approximately 3 x the daily flow of 10m³ (Middelmann & Hurworth, 2021).
- The conservancy tank is proposed to be a structure suitable for conversion to a main pumpstation, at a future time when the local authority capacity upgrades to the Dwars River Wastewater Treatment Works (WWTW) between Pniel and Lanquedoc are complete (Middelmann & Hurworth, 2021). At this time, the conservancy tank will be equipped as a pumpstation, and a new rising main is proposed along Hoof Road to discharge into the Lanquedoc pumpstation, which in turn lifts effluent to the WWTW (Middelmann & Hurworth, 2021). This has been confirmed in principle by Stellenbosch Municipality (refer capacity letter of 19 April), and again will be subject to a formal engineering approval process (Middelmann & Hurworth, 2021). Further to that, it should be noted (as added by the EAP), that this solution would also be subject to any relevant NEMA process where listed activities in this regard are triggered because it is not included in this application for Environmental Authorisation.
- Stormwater will be managed sensitively, primarily by infiltration through existing soft or new landscaped or permeable surfaces (Middelmann & Hurworth, 2021).
- Car parking areas will be constructed from permeable gravel-fix systems, or permeable grass blocks, and edge restraints will be low and/or have drainage gaps (Middelmann & Hurworth, 2021).
- There will not be any increase in hard surfaces under the post development scenario and it is therefore not envisaged that on-site attenuation will be necessary (Middelmann & Hurworth, 2021).
- Surface flow that may be generated by extreme or high rainfall events will be allowed to pass through the development by surface escape, without causing flow concentration (Middelmann & Hurworth, 2021).
- Flood management measures to protect the development from flooding of the adjacent watercourse will be required (Middelmann & Hurworth, 2021). These measures comprise the conversion of the existing culvert crossing on Hoof Road to an engineered low level road crossing to contain flood flow safely under and over the new culverts, within the river

corridor (Middelmann & Hurworth, 2021). The existing berm on the development side of the watercourse will also be formalised to be continuous, reprofiled and raised (Middelmann & Hurworth, 2021).

- The proposed development would be supplied with a 200KVA (300 Amp three phase) low voltage connection to the new site reticulation (*pers comms*, R. Clark, TRAC, 25/03/2021).
- The new supply would be taken from the existing Kylemore Farmers 1 Eskom 11kV line via a new 11kV Tee-off. This would be installed to run across the gravel farm road from the existing Eskom 11Kv overhead line (*pers comms*, R. Clark, TRAC, 25/03/2021).

The new line would feed a new 11 kV/420 Volt 200 Kva pole-mounted transformer, installed on the site and connected to a new 300 Amp (200 Kva) three-phase low voltage Eskom bulk supply meter point (*pers comms*, R. Clark, TRAC, 25/03/2021).

Flood Management (as per the flood line report):

- The bridge structure must be enlarged or lowered to allow excess flow to pass over the structure and back into the watercourse, so as to ensure that the full flow remains in the watercourse. The flood lines for the proposed development are based on the assumption that this will be done (Obree, 2021).
- It must further be noted that the sides of the watercourse have previously been raised by the construction of longitudinal berms on either bank (Obree, 2021). This has presumably been done to contain the flow within the watercourse and prevent floodwaters from affecting the areas alongside (Obree, 2021). However, these berms vary in height, resulting in the possibility of flow escaping to the areas alongside in places where they are of insufficient height (Obree, 2021). In order to protect the areas adjacent to the watercourse from occasional flooding it will be necessary to be repair and extend the berms in certain areas (Obree, 2021).
- Since the proposed development is located on the left bank of the watercourse, it may not be necessary to provide berms to protect the areas on the right bank at this time (Obree, 2021). Nevertheless, it is recommended that the improvements to the berms on the left bank be sufficient to contain the flood, should any work be carried out on the right bank in due course (Obree, 2021).
- It is further recommended that consideration be given to the prevention of further erosion on the bed and banks of the watercourse in the lower reaches, so as to prevent further development of the erosion that is already evident (Obree, 2021).
- It is proposed that new culverts be installed consisting of 5 units each 1.5 m wide x 0.9 m high (Obree, 2021). The total area will then be 6.75 m² (Obree, 2021). The road surface will be lowered at the culverts and raised on either side, to allow any surplus flows to pass over the road and return to the watercourse downstream (Obree, 2021).

Traffic/Transport:

- The bellmouth at the Lanquedoc Main Road/Ou Wapad intersection must be surfaced (Pretorius & Sequeira, 2020).
- The proposed access to the Retreat on the Ou Wapad be aligned in the future with the Delta Farm (old Piggery) access road, if the Delta Farm is developed further (Pretorius & Sequeira, 2020).
- No additional pedestrian and cycling facilities are recommended for the proposed development (Pretorius & Sequeira, 2020).
- A bus route is proposed north-east of the development for the bus to turn around (Pretorius & Sequeira, 2020).
- A total of 24 parking bays will be provided by the development. This is acceptable as it is more than the required 14 bays (Pretorius & Sequeira, 2020).

Terrestrial Biodiversity/ Botanical:

- No specific ecological mitigation is thus required, but it is noted that the landscaping plan is proposing extensive use of indigenous plants, which is supported (Helme, 2021). The proposed *Podocarpus falcatus* (Real yellowwood) should be replaced with *Ekebergia capensis* (Cape ash) or *Harpephyllum caffrum* (Wild plum), as the former is not adapted to the hot, dry summers in this area. The tall restio, *Restio paniculatus*, should also be added to the planting list, for damper areas (Helme, 2021).
- All woody alien invasive species on the south side of the Lanquedoc road section of pipeline, and within 20 m of the pipeline, should be removed during the construction phase. All cut stems must be painted with herbicide immediately after felling to prevent resprouting (Helme, 2021).
- Trenching for the proposed pipeline should be minimised, and should be closed up as soon as possible, to prevent entrapment of animals. Twice daily inspection of the trench should be undertaken by the ECO to remove any trapped animals (Helme, 2021).

Agriculture:

No measures have been recommended (Lanz, 2021) and, therefore, nothing in this regard has been included in the EMPr.

Heritage:

- It is recommended that the HIA be endorsed as fulfilling the terms of Section 38(3) of the National Heritage Resources Act (No. 25 of 1999).
- The strategy of hybrid redevelopment modes across the site should be employed, such that the reception/community centre is retained in largely unaltered form, and simply made fit for purpose. Other cottages can then be freely adapted without sacrificing the integrity and authenticity of the original settlement.
- Detailing should be low key to prevent misrepresentation of the significance of form and fabric.
- HWC should endorse the designs presented in the HIA, namely:
 - SK 100 (24/07/2020)
 - SK 102 (14/08/2020)
 - SK 103 (17/08/2020)
 - SK 104 (17/08/2020)
 - SK 105 (17/08/2020)
- Landscaping should avoid orthogonal layouts and geometric planting patterns, and reflect the untended, less formal character of this part of the farm.

- HWC should endorse the Landscape concept Plan of August 2020 presented in the HIA (Figure 56 of the HIA in Appendix G(f), subject to detailed plans being provided for review and endorsement by HWC;
- The development team/site foreman should be advised of the type of archaeological materials that could occur on site;
- An appropriately experienced archaeologist should conduct a site visit, once during and again after any deep excavation activities on site, prior to backfilling or construction, to identify any evidence for in situ, subsurface LSA material;
- Regarding the proposed potable water pipeline, archaeological monitoring of the trenching activities should be undertaken periodically to inspect for any in situ or significant below surface features or artefacts (Smuts & Scurr, 2021). Should any such material be uncovered, the archaeologist should stop work on site in that area and contact HWC to determine the best way to proceed; this could include mitigation by way of excavation of the site (s) (Smuts & Scurr, 2021).
- Should any significant, *in situ* material be encountered on site, work in that area must stop immediately, and HWC should be notified so that they can advise of the appropriate way forward; this may include further inspection and mitigation by an archaeologist;
- Should any human burials, or potential burials be encountered, all work should cease in that area, and HWC should be notified immediately to determine the appropriate course of action.
- A representative example of farm-workers housing from this recent period should be retained as a "memory" of a past land tenure system farm labour, the rural land reform process, and the social-economic impact that resettlement had on its community. the appropriate adaptive reuse of structures should be community based.
- Demolition should be subject to photographic recording and a record of the names and profile of its last occupants
- The subsidiary, modest, domestic scale of the grouping should remain unaltered.
- Physical changes to the cottages should be modest in nature and not overwhelm or obscure their existing character.
- The location, orientation, and arrangement of the cottages in the landscape should be retained or reflected in any new builds. this retention and reflection could be variable across site, ranging from the retention of entire structures, partial elements, footprints, or envelopes.
- Limited on-site parking can be accommodated and should preferably be located outside of the central area, respecting the visibility of the cottages both from the waped and the Boschendal werf.
 - New parking should be informal and fragmented to minimise its impact.
 - New patterns of access should not introduce new formal axes.
 - Vehicular traffic should be directed to the periphery of the cottage clusters and away from the open area between them.
- Landscaping interventions should be in keeping with the broader rural character of the site and its open planted pasture setting.
- The landscaping needs to reflect the openness and informality of the landscape, as well as the lack of clear definition between farmland and wilderness. while some planted blocks are present, and some tree lines, these are not the predominant feature as they are to the west.
- Landscaping around the cottages should be minimal, and unobtrusive, avoiding orthogonal plantings, treed avenues, and lawns. Lush, dense stands of indigenous vegetation would be similarly out of place.
- Telecommunication attachments such as satellite dishes should not be visible from the waped.
- The following design principles have been included in the HIA:
 - Form:**
 - Existing infrastructure could be redeveloped, through creative and sympathetic adaptation;
 - Traditional vernacular forms, allowing for the multiplicity of vernacular forms recognised in terms of the principles of Restorative Redevelopment, should be employed in the redevelopment of existing infrastructure or the construction of new buildings and low-key additions where this is necessary;
 - Modest scale understated modern structures may be inserted where these do not dominate or detract from the dominant rural character.
 - Height:**
 - Structures should not exceed single story height to ensure that patterns and rhythm of traditional forms are respected. Deviations from this would need to be carefully tested on a case by case basis in order to verify why additional height should be permitted.
 - Materials:**
 - The materiality of existing infrastructure should be respected, and redevelopment of such structures should make use of appropriate materials that reflect the vernacular origin of these structures;
 - where replacement of elements, such as asbestos roofing with corrugated iron, will enhance a structure, this should be considered;
 - Modern materials can be considered for use on new structures or additions to existing structures only where these do not detract from the original or become visually dominant.
 - Visibility:**
 - The rural landscape must remain the dominant visual form;
 - Developments should not disrupt or interfere with the existing pattern of land use and settlement
 - No new development should occur in visually prominent locations, including important view cones, slopes, and ridges.
 - Landscape:**
 - Any development must consider its rural landscape setting and the impact the development and intervention will have on the rural landscape character;
 - The landscape character must remain predominantly rural;
 - Interventions must respect traditional settlement patterns and hierarchies;
 - Agricultural blocks and superblocs must be retained and enhanced such that development does not fragment and compartmentalise the rural quality of the landscape.
 - Access and Parking:**
 - Access roads should utilise existing farm roads and tracks wherever possible;
 - Parking areas and roads should not be under hard surfaces;

- Parking areas should be obscured from view as far as possible, and visually fragmented by appropriate landscaping and planting
- Road edges should not be hard landscaped;
- Barriers to movement and access, including fencing and security gates, should be limited, and removed as far as possible such that the landscape reads as a unified, coherent space.

Fauna:

Generic mitigation measures for specific faunal sensitivities are provided in Jackson *et al* (2019) and those relevant to the site and proposed development have been incorporated into the EMP. These include the following:

- **Avoid loss of faunal species:**
 - Where possible, avoid sensitive habitat corridors, e.g. drainage lines and wetlands (this is already responded to in the proposed development layout).
 - Design development footprints and transport linkages around sensitive faunal habitat where practical (this is already responded to in the proposed development layout).
 - Minimise the number of roads required to access the same area, thereby avoiding unnecessary loss of faunal habitat (this is already responded to in the proposed development layout as it uses a single pre-existing access road).
 - Prevent livestock from trampling the riverbank and damaging natural riparian vegetation.
 - Where possible protect habitats such as rocky outcrops, riverine areas and wetlands which provides roosting, breeding and foraging sites and shelter many small faunal species.
 - Keep clearing to a minimum.
 - All clearing activities must deploy search and rescue teams in front of clearing machinery to assist in relocating slower moving faunal species e.g. tortoises out of the clearing path and relocating to ecological corridors.
 - Protect the remaining near natural habitats on site, specifically rocky outcrops, riparian areas and wetlands as these provide roosting, breeding and foraging sites and shelter for many small faunal species (this would be addressed through the recreation of the fynbos on the site included in the landscaping plan).
 - Natural drainage should be maintained and the silt loads into rivers, streams and wetlands must be managed to stay within normal limits.
 - No construction during the hours of darkness.
 - Residents, staff, and visitors must not be allowed to trap animals on site.
 - Prevent employees from killing snakes through environmental training and awareness.
 - Prevent employees from hunting reptiles, amphibians, mammals and birds through environmental awareness and training.
 - Posters of venomous and non-venomous snakes should be used, and selected staff members should be trained in snake handling to remove snakes safely from site. Employees must not kill snakes.
 - Storage facilities for chemicals should be bunded and situated in high lying areas to avoid spillages and damage from flood events.
 - All stationary machinery that store or run-off hydro-carbons (excluding vehicles) must have drip trays to prevent hydrocarbon spillages.
 - Where possible, limit project vehicles from driving on project roads during the hours of darkness.
 - Trenches must be built with slopes that allow fauna that fall in to escape.
 - Any fencing required for domestic or game animals must be wildlife permeable, at least at strategic places such as along drainage lines or other areas of dense vegetation. This allows for small and medium sized animals to move between their natural habitat unencumbered. If electrified strands are to be used, there are to be no strands within 30 cm of the ground. As an example, if a tortoise touches this strand it automatically retreats into its shell and does not move because it senses danger, and the repeated shocks eventually kill it (Arnot & Moteno, 2017). *This would only apply to the existing rights alternative.*
 - All walls and new roads should have culverts through and under them to allow passage for small fauna, these are commonly referred to as wildlife underpasses and over passes.
 - Should night-lighting be required (e.g. security) these should be of the low UV emitting types, such as most LEDs, which attract significantly less insects.
 - Do not poison any faunal species.
- **Minimise the loss of faunal species:**
 - Speed restrictions for all project vehicles (40km/h is recommended) should be in place to reduce the impact of faunal road mortalities on project roads.
 - A search and rescue plan should be developed for fauna which fall into construction trenches, ideally these should be filled.
 - Dust suppression techniques during construction activities, such as the watering of project roads, must be implemented during the dry season.
 - Ensure machinery and vehicles are within noise industry standards.
 - All domestic pets (dogs and cats) must be sterilised and all domestic cats must wear a collar with a bell.
 - Local communities should be made aware of the threats of displaced animals (by development disturbance) especially venomous snakes and pest species. This is particularly true for any community groups who may make use of the site.
- **Mitigate the loss of faunal species:**
 - Any dead amphibians and reptiles found on site should be preserved and donated to the University of Stellenbosch.
 - Impacted areas must be rehabilitated.
 - In order to increase the flow of water in the rivers, an invasive alien plant management plan should be implemented to remove and manage alien invasive plant in the riparian zones and drainage lines.

Freshwater (these are all taken from Snaddon, 2021):

Construction Phase (note that these apply to all development alternatives):

- The recommended buffer for Stream 10 at the site (above the dam) and stream 11 is 21 m for the Construction Phase.
- The recommended ecological buffer for the New Retreat seep, the Dwars River valley-bottom wetland and the seeps associated with stream 11 and the York Dam is 17 m for the Construction Phase. The mitigation measures provided in the freshwater impact assessment report should be incorporated into a construction EMP and audited throughout the construction process.
- An adequately qualified independent environmental control officer (ECO) must be appointed before construction begins.
- The construction EMP must also include recommendations regarding the method statements required by the ECO.
- Ensure that all building materials and rubble are stored at least 50 m away from the edge of the wetlands and stream channel, as demarcated prior to construction. Storage areas should be bunded adequately to prevent contaminated runoff from entering the aquatic ecosystems.
- Materials should be stored in piles that do not exceed 1.5 m in height and should be protected from the wind (such as using shade-cloth), to prevent spread of fine materials across the site.
- All natural areas that are to remain untransformed but that are impacted by the dumping of materials must be ripped and re-planted after construction is complete, to the satisfaction of the Environmental Control Officer (ECO).
- Use existing roads and tracks to access the site during construction.
- Construction/demolition activities that must take place within the aquatic ecosystems (such as the flood protection measures, road drift, amphitheatre and pathways, and the demolition of buildings) or the ecological buffers must be done in the dry season, to reduce the risks of contamination of the aquatic ecosystems through rainfall and runoff.
- No mixing of concrete may occur close to (less than 50 m) the wetlands or stream.
- Machinery prone to oil or fuel leakage must be located at least 50 m away from the edge of the wetlands and stream, and the area adequately bunded in order to contain leakages, and must be well maintained.
- Toilets must be at least 50 m away from the wetlands and streams.
- Water pumps and cement mixers shall have drip trays to contain oil and fuel leaks – these must be cleaned regularly.
- Suitable toilet and wash facilities must be provided to avoid the use of sensitive areas for these activities. These service areas must be maintained, and toilets emptied on at least a weekly basis.
- Pathways and access roads for construction or demolition must avoid the stream and wetlands.
- Sensitive areas, such as the boundaries of the wetlands and the active channel of the stream, must be clearly demarcated and fenced off (using temporary fencing and danger tape) before any work or site preparation begins. These are no-go areas during the construction or demolition process.
- If lights are used, these must be directed away from all sensitive areas.
- The proposed river rehabilitation plan (Section 8 of the freshwater report) must be implemented, during the dry season.
- The water supply pipelines for all development Alternatives must be laid in the road.
- For Alternative 3, the pipeline must preferably be located to the north of Hoof Pad, where the landscape is more disturbed.
- The temporary pipeline must be placed on the side of the road that is away from the York Dam seep wetland, so as to avoid the wetland.
- Trenching for laying the water supply pipeline must be done in sections, so that trenches are left open for a minimum length of time.
- A search and rescue of important or sensitive plants should be completed before construction occurs in sensitive areas.
- Full-grown riparian tree species must not be disturbed or damaged.
- IAPs must be removed from an area up to 20 m from the water supply pipeline.
- Where alien species, particularly kikuyu grass, are removed, these must be replaced by indigenous species of similar growth form.
- Disturbed areas must be checked regularly for alien and invasive seedlings.
- Rock for the reno mattress, riprap and rehabilitation gabions may not be sourced from the streams on Boschendal Estate.
- Special care should be taken around storm and heavy rain events. The construction site should be inspected for erosion damage at these times (i.e., after heavy rainfall).
- If construction areas are to be de-watered (e.g. after rains), this water must first be pumped into a settlement area or portable tank / pool, and not directly into the wetlands or stream.
- Constant monitoring of the construction site by the Site Engineer and ECO must occur.
- All topsoil and sand brought onto the site should be inspected for seedlings throughout construction. Seedlings must be removed regularly. Snaddon (2021) notes that it is a challenge to ensure that the disturbance of soils and use of imported topsoils does not lead to the spread and establishment of alien plants, adding that it is likely that some will avoid detection and only constant monitoring and removal will solve this problem.
- Site must be inspected at least weekly for alien and invasive seedlings, and these removed and destroyed.

Operational Phase

- The recommended buffer for Stream 10 at the site (above the dam) and stream 11 is 15 m for the Operational Phase, noting that any existing infrastructure within these buffers can remain in place.
- The recommended ecological buffer for the New Retreat seep, the Dwars River valley-bottom wetland, and the seeps associated with stream 11 and the York dam is 15 m for the Operational Phase, noting that any existing infrastructure within these buffers can remain in place.
- New hardened surfaces (impermeable) must be limited to the developable area outside the aquatic ecosystems and their buffers (all alternatives).
- The pathways and amphitheatre planned within the wetlands and the ecological buffers must not be hardened, and compaction of soils along the pathways minimised to a narrow area (less than 1 metre) (all development alternatives).
- Pathways outside the ecological buffers and the aquatic ecosystems can be constructed with gravel of Gravel Fix (all development alternatives).

- The vehicle track leading to the waste treatment components located on site, proposed to encroach into the Dwars River valley-bottom wetland buffer for both development Alternatives, must be constructed with permeable materials, such as permeable paving, Gravel Fix, mulch, or earth (alternatives 1 and 2).
- Downpipes from all buildings to discharge to filtration areas (all alternatives).
- Hardened surfaces should discharge into filtration areas.
- As a principle, all hardened areas within the site should be associated (where possible) with vegetated filter strips (broad, sloped vegetated areas that accept shallow runoff from hardened surfaces), bioswales (landscaped areas that are designed to remove silt and a number of pollutants from runoff, through ensuring that water flows slowly along these gently sloping (<6% slope) features, often planted with grass or other plant species, mulch or riprap), and / or bio-retention systems (vegetated areas where runoff is filtered through a filter media layer, e.g. sand, as it percolates downwards), all of which are designed to reduce the quantity of runoff leaving a hardened surface and entering the stormwater system (all alternatives).
- Runoff from agricultural lands should discharge into filtration areas some distance from the stream and wetlands, to allow for infiltration to ground (no-go alternatives).
- Effort should be made to minimise the hardening of surfaces cross the whole site. Natural areas, gardens and road verges are areas where water can filter into the ground (all alternatives). Stormwater should not be conveyed directly (e.g. by pipe or drain) into the wetlands or stream but must flow along unlined swales, permeable areas, and bioswales (all alternatives).
- Parking areas should preferably be constructed using permeable materials to allow for infiltration of water (all development alternatives).
- Waste water conveyance, storage or treatment infrastructure must be placed outside of the delineated ecological buffers. (all alternatives)
- All sewage storage facilities must be regularly checked for leaks and overflow. (all alternatives)
- The SOG filter should be placed as distant from the sensitive natural areas (stream and wetlands and their buffers) as possible, as proposed for Alternative 2 (alternatives 1 and 2).
- The area immediately around the solids separator and SOG filter should be protected with a berm, which would catch surface water flowing out of any of the components (alternatives 1 and 2).
- Treated wastewater should preferably be recycled back.g.,to the toilet system (alternatives 1 and 2).
- Treated wastewater can also be used for irrigation of landscaped areas, but should be directed towards road verges, rather than the margins of the stream or the wetlands (alternatives 1 and 2).
- Lighting should face away from the wetlands, and stream (all alternatives).
- Visitors should be discouraged from walking on the bed and banks of the stream, and into the wetter areas, through construction of walkways and benches, guiding visitors to use specific pathways and areas (all development alternatives).
- Landscaping requiring ongoing maintenance around the units must be kept to a minimum, especially within the ecological buffers. Gardens should rather be natural areas, where the locally indigenous vegetation is allowed to grow (all development alternatives).
- No kikuyu grass is allowed anywhere on site (all development alternatives).
- The spread of alien plant species into all natural areas must be prevented and monitored (all alternatives).
- Road verges must be monitored for alien species, especially grasses (all alternatives).

The rehabilitation plan contained in section 8 of the freshwater report has also been included in the EMPr. This includes monitoring requirements which state that a freshwater ecologist must oversee the rehabilitation activities.

Structural Integrity:

Community and Reception Buildings:

- The brickwork above window and door height has lost all structural integrity and will not support a roof structure. This section of brickwork will have to be removed.
- The plaster has lost its integrity and will have to be removed.
- New window and door positions will require brickwork remedials.
- In-fill brickwork will need remedials.
- New plaster will require mesh and mortar enhancing.
- The floor slabs can remain but will require a 100 mm overlay.
- A new concrete ringbeam will need to be constructed to fix the new roof trusses and new brickwork built above to form the gables.
- There are no roof trusses currently so all roof construction will be new.
- Foundations and plinth brickwork is salvageable and will be re-used

Visitors Cottages and Learning/ Dining/ Lounge Buildings:

- The interventions are such that none of the above slab superstructure brickwork can remain.
- The foundations and plinth brickwork can be re-used.
- The existing floor slab can remain and will be overlain by a new 100 mm thick slab.
- All new superstructure brickwork will be new.
- A new concrete ring-beam above windows and doors will be cast.
- Roof structure will be new

3.	List the specialist investigations and the impact management measures that will not be implemented and provide an explanation as to why these measures will not be implemented.
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There are no requirements from the latest and updated specialist/ professional assessments that have been excluded from the EMPr.

Note that one mitigation measure included in Snaddon (2021) has been expanded upon by the EAP to provide clarity, namely "Use existing roads and tracks" has been elaborated upon to state "Use existing roads and tracks to access the site during construction".

There are measures from the initial services report that are not included in the EMPr, because they have been superseded by the supplementary services report (i.e. Middelman & Hurworth, 2021), which is more relevant to the preferred alternative and changes in scope. The following, outdated measures include the following:

- There are several water supplies options under consideration at present. The recommended water supply would depend on whether a supply from either of the municipal networks can be made available and the capital costs of the supply (Schoonwinkel, 2020). The advantage of the municipal supply is that water of a potable quality will be available and will not require any treatment or operation and maintenance from the farm management (Schoonwinkel, 2020).
- It is recommended that an on-site treatment package plant be installed at the development (Schoonwinkel, 2020). A low energy biological sewage treatment process is recommended, comprising of a solids interceptor, flow balancing and a multi-media biological (SOG) filter (Schoonwinkel, 2020).
- It is recommended that effluent gravitate to the solids separator outside the ecological buffer zone of the river on the northern side of the development (Schoonwinkel, 2020).
- Downpipes from the buildings must discharge on surface and dissipate into the ground (Schoonwinkel, 2020).
- The stormwater run-off from the new road and parking area must be accommodated in a sustainable manner and to the landscape architect's landscape plan (Schoonwinkel, 2020).
- Application for a 100 Kva (150 Amp three phase) low voltage connection is submitted to Eskom (Schoonwinkel, 2020).
- Although the proposed development is situated outside the normal municipal supply area. Preliminary discussions with Stellenbosch Municipality indicated that they would consider a municipal water connection from their bulk supply to Pniel, but an official application with water demands must be lodged (Schoonwinkel, 2020).
- Wastewater treatment would be on site with the construction of a package plant of approximately 40m³ capacity that would treat effluent to the applicable standard that can be used for irrigation (Schoonwinkel, 2020).
- Ducts would be placed at road crossings for a future telecommunication network and the selected service provider will install further ducts and manholes as per their design (Schoonwinkel, 2020).
- Street and area lighting of internal private roads, private open spaces and parking bays and the lighting of features, walls, entrances, water features etc will be provided to the Architect's requirements (Schoonwinkel, 2020).
- Energy efficient lighting technology will be used as far as possible to reduce the energy requirements of the development (Schoonwinkel, 2020). Note that *there are still energy efficiency requirements recommendation included in the EMPr as it is a best-practice.*

It should also be noted that the EMPr does not include the Stellenbosch Municipality requirements for connecting to the municipal sewer system, as indicated in their capacity letter (refer to Appendix E16) because the proposed development does not entail municipal connection, given that availability at the local wastewater treatment works is not currently available. However, in this regard, the EMPr states the following: "Note that future sewage reticulation to connect to municipal supply is not part of this Basic Assessment process and would need to follow the requirements of applicable law at the time, as well as those of the Stellenbosch Municipality."

4. Explain how the proposed development will impact the surrounding communities.

The proposed development is of a small scale but would present benefits for the surrounding community through the social upliftment programmes which make use of the current Retreat and the fact that they would continue to use the proposed New Retreat. There would also be some short-term economic benefits for those members who would be employed in the construction thereof, as well as some permanent economic opportunity for the small number of operational employment opportunities that the proposed development would provide for local people. It is, therefore, unlikely that the proposed development would affect the health and well-being of users of the site such as farm workers or anyone who lives nearby (noting that much of the surrounding area does not house anyone and there are few homes or other buildings adjacent to the site).

From a social history perspective, the proposed development would initiate a reintroduction and reinforcement of historic routes and movement patterns across the wider site with its historic links to the mountains, Pniël, Kylemore, Lanquedoc and the R45.

The impact on the landscape is anticipated to be positive as the proposed development would make use of a low-key, sensitive design approach that responds to the cultural landscape and social heritage of the site and area (i.e. the sense of place of the farm and the story of the site). Notably, there would also be a positive social history impact as the proposed development would also begin to reconnect the community along the Ou Wa-pad.

The structural integrity and, therefore, safety of the existing cottages would also be improved upon through the hybrid development proposal (i.e. utilising a combination of adaptive reuse, renovations, and refurbishment, as well as demolition and rebuild).

No noise and odour impacts are anticipated, other than some short-term noise resulting from the construction-phase. Operational phase noise from the proposed development would be limited as the nature of the proposed development is such that noise anticipated would be low should any specific events be planned, they and the associated noise limits would be subject to local by-Laws in that regard). From an ecological perspective, though certain fauna may be scared off-site from the noise in the short-term, they would return once construction is complete, as well as even at night because construction would not occur then.

Note that there are no private residences or offices adjacent to the site, as the site is well within the farm (but there are a few farmhouses adjacent to and nearby the site where people who work on the farm live). Therefore, human exposure to the site would be limited to farm workers (either passing through that area or when working nearby, which itself is even very limited as the site is not near working hub/active part of the farm) or to tourists/users of the site moving through the farm (as they would not remain on site for very long and the site is not located in a very active part of the farm).

The construction of the proposed potable water pipeline to Lanquedoc may have minor, short-term traffic congestion implications for residents of Lanquedoc and other users of that section of road, however traffic would not be completely blocked and it would be temporary, therefore this would not be unacceptable. From an operational perspective, the line would be underground and would not affect surrounding communities at all. The same is true from a supply perspective because Stellenbosch Municipality has confirmed available capacity (refer to Appendix E15).

5. Explain how the risk of climate change may influence the proposed activity or development and how has the potential impacts of climate change been considered and addressed.

Given the location of the proposed development and the Western Cape's history of drought, it is likely that the most significant impact of climate change would be related to variations in rainfall and water on site and extreme weather events (i.e. drought, flash floods, etc.).

The stormwater management plan has also accounted for the water on site, as well as potential extreme weather events. It has been informed by data from a flood-line study for the Dwars River (Kwezi V3 Engineers, September 2005) and the site is located beyond the 1:50 and 1:100-year flood lines thereof. It has also considered the flood analysis for stream 10 and the proposed flood management measures and river rehabilitation indicated in the project description would address the anticipated 1:100-year flood event. Should there be drier conditions, there would be less/minimal run-off and the site and stormwater system would be dry, which would not pose a risk to the structures on site, or the freshwater ecosystem (in this case, no more risk to the ecosystem than that which could be caused by a drought is considered to result from a dry stormwater system).

The enhancement of the ecological status of the site would also, in a very minor way (due to the small-scale nature of the site and proposed development), serve to contribute to a more robust ecosystem in the area and improve on plant and animal communities in the area, thereby providing better carbon capturing that the current site conditions.

6. Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved.

No conflicting recommendations have been made.

7. Explain how the findings and recommendations of the different specialist studies have been integrated to inform the most appropriate mitigation measures that should be implemented to manage the potential impacts of the proposed activity or development.

The findings and recommendations of the specialist studies are either included/implicit in the proposed design/layout and the project description or have been recorded in the EMPr to ensure effective planning, design, development, and operational management of the proposed development.

The mitigation measures from heritage specialists are planning and design-related and have either been incorporated into the proposed layout (e.g. low key design, tight building footprint, hybrid approach to retention vs demolish and rebuild, etc) or landscaping intent (e.g. proposed wilderness feeling.), or they would be considered in detail design, with certain measures being incorporated into the EMPr. This would guide development in such a way that the sense of place would be in synergy with the surrounding social heritage and landscape context and be respectful of the current sense of place through appropriate use of architecture for the existing buildings. The location of the site itself is along an historic route and the proposed development, if carried out sensitively, would serve to reconnect the farm with the communities in a positive way. Requirements for archaeological monitoring during construction are also included in the EMPr.

Many of the mitigation measures from the freshwater ecologist are already included in the proposed layout, and the preferred layout has been guided by the freshwater impacts and ecological buffers (i.e. the layout has been devised to reach a preferred alternative that locates the conservancy tank and small pump beyond ecologically sensitive area as well as a stormwater system that provides for optimum permeability), landscape plan (e.g. treatment of the ecological corridors and inclusion of less invasive structures therein) and stormwater management plan, while the remaining conditions are more management based and would be implemented through the EMPr (noting that all mitigation measures are nonetheless included in the EMPr as it covers the planning and design phase as well). The EMPr also includes the river rehabilitation requirements and a Maintenance Management Plan. These measures have been included to ensure low adverse impacts on the freshwater system and to provide a positive impact thereon as well.

The recommendations from the terrestrial compliance statement are minimal, requiring that some species on the landscape list be included, and this has been done in the Landscape Plan. Other measures related to the construction works for the proposed potable water line to Lanquedoc and the temporary pipeline are also included in the EMPr.

The remaining specialists such as structural engineers, civil services engineers and transport engineers and geotechnical engineers have also made recommendations in terms of design and planning to adequately service the site in such a way that does not have significant adverse impacts off-site. The transport measures are included in the proposed layout (i.e. parking area, access points) and also in the EMPr, while the stormwater management plan and flood management measures are incorporated into the proposed services layout and has included the high-level mitigation measures of the freshwater ecologist (noting that there are additional mitigation measures that would have to be included in detail design). Other services such as water and electricity are available on the existing network, with confirmation from the service providers provided and included in Appendix E16. The flood line analysis has also been considered in the civil services report and flood management design.

Overall, all the mitigation measure recommended by the team of specialists involved in this project and assessment are considered important and have been included in the proposed development description/plans and/or in the EMPr. There are no measures which have been excluded from the EMPr and only one that was edited by the EAP to add clarity when extracted from the specialist report (within which the context serves to clarify the point).

8. Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option.

The implementation of the impact mitigation hierarchy which strives to avoid impacts and if unavoidable, minimise and remedy such impacts, whilst maximising positive effects, with the purpose of maintaining the interdependent sustainability requirements for biophysical system integrity and basic human well-being, avoiding inappropriate trade-offs that result in the loss of essential ecosystem functioning is one of the ways through which sustainability can be achieved(DEA,2014).

DEA (2014) explains that an impact mitigation hierarchy approach should be implemented to avoid inappropriate trade-offs that could result in the loss of important ecosystem functions and significant societal impacts. The impact mitigation hierarchy dictates that impacts should firstly be avoided, but if unavoidable, appropriate measures should be taken to minimize, reduce and rectify such impacts, in a manner that will achieve sustainability objectives and targets (DEA, 2014). If impacts cannot be avoided, minimized, reduced (over time), or rectified, consideration can be given to the implementation of offsets, depending on the significance of such impacts (DEA, 2014). DEA (2014) further cautions that offsets are therefore only to be used in exceptional circumstances to compensate for residual impacts caused by development projects, whether these are unavoidable societal impacts, harm to ecosystem functioning or the loss of biodiversity.

The mitigation hierarchy has been applied at various levels through the conceptualisation of the preferred alternative for the proposed development, with the overall goal of the proposal being to develop a tourist facility which would operate in synergy with the agricultural, natural, social, and cultural landscape. The proposed development would achieve this as adverse impacts would be kept low, very low or even negligible (with mitigation) and there would also be a low positive aquatic and terrestrial ecological impact through the implementation of appropriate landscaping. The social heritage, architectural and landscape impacts would be positive (with mitigation) and a low negative archaeological impact may occur if there is a find on the site. The proposed development would also provide continued access for the local community groups who make use of the existing Retreat. In some cases, certain impacts would be avoided through the preferred alternative, however, most of the management of impacts would be achieved through minimisation/ mitigation of impacts. In certain case, further levels of the mitigation hierarchy are applied and particularly in cases where avoidance is possible for certain areas/aspects and not others, there would be on-site compensation implemented.

More detail on which aspects of the proposal relate to which levels of the mitigation hierarchy are provided in Table 10.

Table 10 Aspects of Proposed Development as they relate to the various levels of the mitigation hierarchy⁶

Mitigation hierarchy	Aspects of the project
Avoid	<p>Sensitive freshwater areas have been largely avoided as no buildings would be located in the river or wetlands nearby. Water quality and water quantity impacts on the freshwater systems as a result of stormwater discharge would be avoided (i.e. impact would be negligible) with the preferred alternative, given the optimal permeability implicit in the design/proposal.</p> <p>High-yielding agricultural land has been avoided and so no loss of agricultural opportunity would result.</p> <p>CBAs have been avoided and, following a site assessment, it has been confirmed that the site is not sensitive from a terrestrial ecology perspective, so the siting of the proposed development avoids terrestrially sensitive areas.</p> <p>The proposed potable water line to Lanquedoc is deliberately devised to be within a roadway and/or in the area adjacent to it in the section where there is a line of gum trees. This has been done to avoid any environmentally sensitive areas. The same applies for the design across a stream/culvert, whereby the pipe would be fixed to the existing structures to avoid having to be within a watercourse.</p> <p>The same holds true for the temporary pipeline which would also be routed within existing roadway and on the other side to where wetlands are located.</p> <p>The berms for the flood management have been deliberately located outside of sensitive botanical areas on and near the site.</p>
Minimise / mitigate	<p>With the few landscaping structures to be located within the Dwars River valley-bottom wetland or ecological buffers, construction work in and near these areas would be limited to times of the year where these systems are least vulnerable.</p> <p>The EMPr contains several mitigation measures to yield positive impacts or to minimise the adverse impacts to acceptable (i.e. low) levels. Note that the EMPr contains specifications for the planning/detail design phase, construction phase, and operation phase in order to cover the full development cycle applicable to the proposed development (note, decommissioning is not applicable as it is not the intention of the Applicant to decommission the proposed development). These include considerations which</p>

⁶ Table developed based on information derived from DEA (2014)

	need to be employed in the design of the proposal (both in terms of aesthetics as well as structural integrity).
Restore	<p>The proposed development allows for a restoration of a derelict site which would yield positive outcomes from a social heritage, landscape, and architectural perspective. There is a large (relative to the site footprint) area of fynbos rehabilitation proposed incorporated into the proposed development within the landscape plan. This would serve to improve upon the current ecological state of the site (Helme, 2021).</p> <p>The removal of invasive species would occur through the specifications in the EMPr. The same applies for a certain distance from the proposed potable water pipeline (Helme, 2021).</p> <p>The landscape intent includes indigenous plants which would contribute to the natural ecosystem on site (Helme, 2021; Snaddon, 2021).</p> <p>A stream rehabilitation plan is also included in the proposed development description and EMPr (which also includes a Maintenance Management Plan) which will be implemented.</p>
Offset/ compensate	<p>There are aspects linked to compensation incorporated into the EMPr, namely the strict compliance monitoring and auditing specifications for the construction phase as well as the operational phase of the proposed development. There is also a more frequent auditing schedule applied for periods where work would take place in the wetland and within the ecological buffers of the wetlands and stream.</p> <p>Fines are recommended for transgressions and the e.g., reports would be submitted to both the DEA&DP and the Stellenbosch Municipality for their records.</p> <p>The loss of low species diversity indigenous vegetation, as well as some wetland habitat, would be compensated for through the fynbos rehabilitation proposed in the landscape plan and through river rehabilitation measures/maintenance recommended in Snaddon (2021). Helme (2021) confirms that the ecological status of e.g., site would be enhanced as a result of the proposed development and this is echoed in Snaddon (2021) who also states that there may be positive impacts anticipated as a result of the landscaping implementation and alien and invasive species management.</p>

SECTION J: GENERAL

1. Environmental Impact Statement

1.1.	Provide a summary of the key findings of the EIA.
<p>Through this impact assessment investigation, which entailed inputs from the design and engineering team as well as specialists and Bertha grantees (as well as staff and management), as well as from registered I&APs through their comments submitted on the draft Basic Assessment Report, a number of environmental impacts were identified and considered.</p> <p>Those aspects that influenced the opinion of the EAP on this question are primarily related to the following points:</p> <ul style="list-style-type: none"> • The baseline conditions of the site are such that there are sensitive freshwater areas and faunal/ ecological corridors on portions of the site and along the edges thereof which require protection and careful consideration in development; • The baseline conditions of the proposed potable water line routes are not sensitive, given that these are within an existing road, or in the case of the pipeline to Lanquedoc, would be adjacent to the northern edge of the black-top, within the road reserve. • The preferred development alternative has been designed to keep the sewage servicing components away from the sensitive freshwater aspects of the site, to maximise surface permeability for stormwater, and to provide a stable supply of potable water to the site; • The site and potable water pipeline routings have no apparent archaeological or agricultural sensitivities thereon; • The fact that there are already buildings on the site as well as access routes and capacity for services; • The fact that Stellenbosch Municipality has confirmed capacity for potable water from the existing network and that Eskom has confirmed available capacity for electrical supply. 	

- The need and desirability of the proposal with regard to the establishment of a community activist enterprise which would provide space for local community upliftment organisations in a venue that is close to the communities that would use it as well as one that is meaningfully located along a historic connection route (namely, the Ou Wapad). The additional aspect of creating a small number of permanent employment opportunities that would benefit the local community which also provide direct social benefits to these areas and some limited indirect financial benefits;
- The positive social heritage impact anticipated through re-establishing connectivity between the communities and the farm along the Ou Wapad;
- The understanding, based on specialist assessment, that adverse impacts can be mitigated to low, very low levels and even negligible for both construction and operation, and that there would be low and medium positive impacts for both the construction and operational phase (for the preferred alternative);
- A portion of the site is proposed for fynbos rehabilitation, which would improve the ecological condition of the site as currently the site has low terrestrial ecological value;
- The alignment of the intentions of the proposed development (with implementation of mitigation) with the WCBSPP;
- The zoning of the site for agricultural purposes as well as the designation of the area in the Stellenbosch Municipality EMF (refer to Figure 19), which indicates that it falls beyond conservation zones.
- The intentional routings of the potable water line within the road (and road reserve) and along the road edges where there are no sensitivities.

With respect to environmental sensitivities, the site and potable water line routes are of Low botanical and faunal diversity and sensitivity and presents no faunal or botanical constraints to the proposed development, other than the seasonal drainage line on the eastern edge of the site. About 500m² of low diversity indigenous vegetation would need to be cleared from the site in total. Snaddon (2021) confirmed six freshwater resources on/near the site and potable water line, namely the perennial stream 10 which runs along the eastern edge of the site, the Dwars River valley-bottom wetland and the seep wetland to the west of the site, seasonal stream 11 (which would be crossed on existing road by the permanent potable water supply line) and its associated almost perennial hillslope seep as well as a wetland seep located below the York dam close to where the temporary water pipeline would be routed. Two Ecological Corridors pass through the New Retreat site, one along Stream 10 and the other following the Dwars River (Snaddon, 2021). Adverse impacts on the freshwater system are anticipated, and these can be mitigated to Low and very low levels of significance. The impacts of greatest severity are linked to the construction activities proposed for the flood protection measures, footpaths, service track (alternatives 1 and 2), amphitheatre, and water pipelines. However, these impacts can be mitigated against, which would reduce the significance of these impacts to, at worst, low negative/ negligible, for all three development alternatives (noting that the preferred alternative would have comparatively more negligible impacts). With the implementation of all mitigation measures, specifically including the implementation of the rehabilitation plan, effective site monitoring, conservation of all mature riparian trees, use of compacted earth for pathways in the buffers, and the removal of invasive alien plants from the site, there may ultimately be a positive impact on the environment (Snaddon, 2021). The proposed development could actually enhance the ecological status of this area, by means of increasing the current indigenous plant diversity and cover (as proposed in development layouts) and making it more attractive to a wider range of birds and insects (Helme, 2021).

In terms of heritage and cultural aspects, the site does not have any apparent archaeological sensitivity (Smuts & Scurr, 2020) as a result of the pasturage history and location of the site far from historic werfs, but the Ou Wa-pad forms a vital tangible heritage resource and the cultural landscape is also highly significant, and different than the rest of the farm, and comprises an exposed, less tended, wilderness which also forms part of the very important Grade I CWCL. In terms of intangible heritage, while the derelict Smuts & Scurr (2020) state that the cottages are representative of a social layer of history which imprints significant memory on the site and need to be treated appropriately in the proposed development. Heritage impacts would be positive from a landscape, architecture, and social heritage perspective, while adverse archaeological impacts are anticipated to be minimal.

Service capacity for electricity and refuse is available on the farm already as the proposed development would be incorporated into existing systems and processes. There is also confirmed capacity for potable water within municipal supply, as confirmed by Stellenbosch Municipality. The sewage resulting from the proposed development would be temporarily held/stored *in situ* through the inclusion of a conservancy tank of 30 m³ capacity in the proposed development and the sewage would be removed as required through the existing system on the farm (i.e. by a private contractor who has confirmed capacity to provide the service). Stormwater would also be appropriately accommodated. Stormwater and sewage would be managed in a way that presents low risk to the freshwater systems on and nearby the site and the preferred alternative is the preferred development alternative from a freshwater perspective for this reason.

There would also be limited traffic impacts anticipated and minimal interventions are required. These requirements are included in the EMPr.

Generally, the construction phase impacts for the proposed development (preferred alternative), with mitigation implementation, are anticipated to be Low (-) and Very Low (-) and the operational phase impacts, also with mitigation implementation, are anticipated to be similar with most impacts being Low (-), one very low (-) and negligible. Therefore, the selection of the preferred alternative has been based on the needs of the Applicant in terms of the easiest way to support social and environmental activism through the utilisation of existing, unused and derelict infrastructure in a manner which responds sensitively to the cultural and social landscape in such a way that contributes to redress in a meaningful way and that does not unacceptably compromise the quality of the natural environment. It would also provide opportunities for a social enterprise and a development that would provide some employment opportunities to locals, on land that is not ideal for crop production. It is also preferred as it is the most convenient way to ensure serviceability to the site. An additional preference for this alternative is also that it is largely supported from a spatial planning perspective, particularly on the basis of 're-use' and rehabilitation of existing derelict structures as a primary planning and design principle, and there is a fynbos rehabilitation component which would have a low positive impact on the aquatic and terrestrial ecology of the site.

It is believed that the impacts that have been identified have been adequately addressed through the proposed development plan, landscape plan and services plans or would be mitigated to acceptable levels through the final design and the strict

implementation of the EMPr (which incorporates all specialist recommendations), as well as suggested conditions of authorisation (if the DEA&DP grants authorisation and includes those suggestions therein). A number of specialists have been involved in order to inform the investigation which provided rigour, independence, and transparency in the process as well as appropriate skills and expertise.

The negative impacts associated with the proposed development are anticipated to be either very low, low or negligible, while the positive impacts are anticipated to be low and medium. On balance, the positive impacts are greater and would outweigh the negative impacts during the operational phase, while the construction phase impacts would present more negative impacts. However, the construction phase impacts are related to construction activities which are short-term, and generally easily managed and mitigated and would also need to be independently audited throughout the construction phase. There is no single aspect or impact which stands out; however, it is important that the mitigation measures indicated in this report and in the EMPr (Appendix H) are followed as the significance of the impacts is contingent thereon.

Layout/servicing alternatives have been assessed in the form of the preferred development alternative (i.e. Alternative 3), development Alternative 1, Alternative 2 and the no-go or "existing rights" alternative (i.e. whereby the Applicant may continue with development which does not require approval and is aligned with existing rights whereby rights for agricultural use are presently in place for the farm portion within which the site is located). In addition, alternative design/ layout solutions, sewage disposal/treatment solutions and development approach (i.e. demolish and rebuild, vs refurbish, vs redevelop) have been considered within the preferred development alternative, although they have not been formally assessed. In general, the impact of the proposed development is anticipated to be a combination of medium and low positive impacts and low to very low or negligible negative impacts, while the impact of the existing rights alternative would largely be very low, low and medium negative, with no positive impacts and possible positive impacts of the proposed development in terms of heritage and terrestrial biodiversity which would be foregone. While the no-go alternative (the best case scenario where no intensive crops are intended) is preferred from an aquatic ecology perspective, the preferred development alternative can be mitigated to acceptable levels presenting low risk to freshwater systems. Note also that there are existing rights for the site, which allows for development without the need for Environmental Authorisation and, therefore, the aforementioned impacts indicated for the existing rights alternative are "with mitigation" however mitigation would not be monitored or controlled by any external parties (such as would be the obligation in terms of an Environmental Authorisation).

The EAP has been encouraged by the fact that the applicant and design team have been receptive to the issues raised by specialists and other commenting parties (such as DWS, DEA&DP, etc.) and appropriate mitigation has been put in place. In short, the design and mitigation measures have been a co-operative and iterative process between all parties concerned.

The proposed development and specialist assessments in this regard have been subject to stakeholder engagement during the pre-application and post-application draft Basic Assessment Report public review periods. Comments on both iterations of the Draft BAR have been incorporated into this Final BAR.

In conclusion, it is believed that the preferred alternative represents responsible development which would be suited to the site. It is therefore believed that the preferred alternative (i.e. Alternative 3/ the proposed development) as described in this report, subject to the implementation of the mitigation measures included in this report and the EMPr could be developed.

1.2.	Provide a map that that superimposes the preferred activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. (Attach map to this BAR as Appendix B2)
	Refer to Figure 4 and to Appendix B2.
1.3.	Provide a summary of the positive and negative impacts and risks that the proposed activity or development and alternatives will have on the environment and community.
Refer to Table 8 and Table 9.	

2. Recommendation of the Environmental Assessment Practitioner ("EAP")

2.1.	Provide Impact management outcomes (based on the assessment and where applicable, specialist assessments) for the proposed activity or development for inclusion in the EMPr				
<p>The EMPr has considered the impacts identified during this impact assessment process and has included all mitigations measures recommended by the independent specialists, the professional team, as well as those included by the EAP. Mitigation measures (i.e. environmental specifications) have been incorporated into all phases of development barring decommissioning (as this is not the intention of the Applicant), which facilitates integrated environmental management and the appropriate consideration of environmental issues at all levels and relevant stages of the project.</p> <p>The EMPr would be a legally binding document which would have to be implemented by the Applicant. There is also another layer of reporting contained in the EMPr, whereby an independent auditor would be involved in a regular basis during the construction phase. Auditing during the operational phase is limited, given the nature of the proposed development and (positive) operational impacts identified, however there is still a requirement for a single audit by an independent and suitably qualified professional within six months of operation. The remainder of operational audits would be at the discretion of the DEA&DP and subject to applicable environmental law at the time.</p> <p>The impact management objective and outcomes for the design and construction, as well as the operational phase and are included in the EMPr and summarised in Table 11 and Table 12.</p> <p>Table 11 Summary of impact mitigation measures and outcomes as included in the EMPr for all three development alternatives- Design and Construction Phase</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Impact/ Aspect of the proposed development</th> <th>Impact Management Objective</th> <th>Impact Management Outcome</th> </tr> </thead> </table>		No.	Impact/ Aspect of the proposed development	Impact Management Objective	Impact Management Outcome
No.	Impact/ Aspect of the proposed development	Impact Management Objective	Impact Management Outcome		

1	Detail design measures	To ensure that the final designs are in line with the considerations contemplated in the environmental assessment phase.	No deviations from the specifications listed in the EMPr in this regard
2	Documentation, planning and programming requirements	To ensure that the works schedule is appropriately planned to limit adverse impact on the environment.	No deviations from the specifications listed in the EMPr in this regard
3	Site camp establishment	To ensure that the site camp is located and laid out in an environmentally sensitive manner, which also does not adversely affect farm operations.	No deviations from the specifications listed in the EMPr in this regard, and no damage to environmentally sensitive areas or harm to fauna as a result of the location and set-up of the site camp.
4	Site Access, Access Routes and Traffic Management	To avoid and/or minimise impacts on the local road network and road users any such impacts are appropriately dealt with to prevent further impacts in the longer term. To avoid construction related impacts to other road users associated with the movement of construction vehicles.	No disruptions to traffic on local networks such that complaints are elicited, no damage to vehicles and related claims and no nuisance to surrounding caused by dust.
5	Waste Management	To prevent pollution/contamination associated with the generation and temporary storage of general waste, hazardous waste construction rubble and litter generated by the workforce on site.	No non-conformances and no pollution of soil, groundwater and/or stormwater as a result of waste generation and management activities.
6	Soil and Water Pollution Management	To prevent groundwater and soil pollution associated with the handling storage and use of hazardous materials or materials that have the potential to cause environmental harm.	No non-conformances, no pollution to soil and groundwater and/or stormwater or any water courses as a result of the construction activities.
7	Protection of natural Features and Fauna	To ensure that no vegetative cover is removed and/or impacted on outside of the approved works area (i.e. nearby mapped environmental areas). To protect any protected plant species on the property and prevent impacts on fauna found on the site. To preserve the top layers of soil for use in the final landscaping. Appropriate temporary storage and stockpiling of topsoil to prevent erosion, sedimentation, and dust pollution. To avoid intrusion into the adjacent natural areas and prevent related impacts.	No removal of vegetation and/or other impacts on any vegetative cover in the area outside of site limits. No damage or defacing of any natural features situated in or around the site. No harm or destruction of faunal habitats outside the site limits or the death of any animals on the site or as a result of actions of removing fauna off site.
8	Protection of any Palaeontological and Archaeological Resources	Protection of archaeological and/or palaeontological resources on, or adjacent to the site.	No non-conformances in terms of the specifications contained in the EMPr and no impacts on such resources and proper execution of the excavation thereof.
9	Noise Management	To avoid and/or minimise impacts on the surrounding farm users and farm activities and ensure that any such impacts are appropriately dealt with to prevent further impacts in the longer term. To provide a forum for any Interested and/or Affected Parties to raise their concerns and log complaints for remediation action and prevention of similar incidents.	No disruptions or nuisance to other users of the farm or farm activities by noise from the construction site. Effective complaints handling. No repeat complaints received.
10	Dust Management	No unacceptable levels of dust. To avoid and/or minimise impacts on the surrounding farm users and activities and to ensure that any such impacts are appropriately dealt with to prevent further impacts in the longer term. To prevent wind and water erosion and/or sedimentation of any features surrounding the site. To provide a forum for any Interested and/or Affected Parties to raise their concerns and log complaints for remediation action and prevention of similar incidents.	No nuisance to surrounding users of the farm and farm activities caused by dust. Effective complaints handling. No repeat complaints received.
11	Aesthetics/ Visual	To ensure that visual impacts are avoided as far as possible, and where these cannot be altogether avoided, that it is reduced to acceptable limits.	No unacceptable visual impacts occur as a result of construction activities.

12	Hazardous Substances (including cement) Management	To prevent pollution or fire associated with the handling storage and use of materials deemed hazardous to human health or the environment.	No non-conformances and no pollution of soil, groundwater and/or stormwater as a result of the construction activities. No fires as a result of the handling / use of fuel.
13			
14	Labour Relations, Facilities and Site Health and Safety	To ensure the safety of all site personnel as well as the surrounding users of the farm.	No injuries / incidents on site and emergency situations managed effectively. No safety breaches.
15	Incident Management	To guide the way in which emergencies and/or environmental incidents are handled on site and remediate any damage appropriately. To prevent the starting of fires on site.	No non-conformances and no adverse impacts on the environment as a result of emergency situations and/or environmental incidents. No fires started on the site. Swift response to incidents.
16	Resource Use (Raw Materials and Resources)	To prevent excessive and unnecessary use of natural resources and wasting of natural resources during the construction phase.	Development of an attitude towards a reduction in natural resources consumption where feasible and possible
17	Site Clean-up and Rehabilitation	To prevent impacts on the environment as a result of the conclusion of construction activities and any related impacts requiring rehabilitation actions prior to the contractors leaving the site.	Provision of a development whereby all construction-related materials are no longer evident and rehabilitation of all disturbed areas, both on and off-site.

Table 12 Summary of impact mitigation measures and outcomes as included in the EMPr for all three development alternatives-Operational Phase

No.	Impact/ Aspect of the proposed development	Impact Management Objective	Impact Management Outcome
1	Protection of Ecological Resources	To prevent loss and damage to ecological resources (i.e. indigenous vegetation, wetlands, stream, and riparian zone) on site	Continued existence of flourishing fynbos components of the landscaped area and continued health of the stream, riparian zone, and the wetlands in close proximity to the site
2	Faunal passage through the site and safety on the site	To encourage faunal movement through site as far as possible.	No harm or disturbance to fauna on site.
3	Employment Equity	To provide opportunities for local previously disadvantaged individuals.	Employment to go to local and previously disadvantaged groups, as far as possible.
4	Visual/ Aesthetics Preservation	To prevent degradation of visual appearance of the site over time.	No reduction in aesthetic appearance over time.
5	Resource Use Management- Water	To facilitate the efficient use of water resources on the site.	No water wastage.
6	Resource Use Management- Electricity	To facilitate the efficient use of electricity on the site, specifically in relation to housekeeping activities.	No wastage of electricity/energy
7	Solid Waste Management	To prevent pollution associated with the generation and temporary storage of general waste, hazardous waste and litter generated by the workforce on site.	No non-conformances and no pollution of soil, groundwater and/or stormwater as a result of waste generation and management activities.

2.2. Provide a description of any aspects that were conditional to the findings of the assessment either by the EAP or specialist that must be included as conditions of the authorisation.

In general, the primary assumption by the EAP and specialists is that the proposed development would generally be developed as described and indicated in the Site Plan (refer to Appendix B), within the limits of the developable footprint contained therein (noting that detailed design within these limits is anticipated to still occur following this Basic Assessment process). The second key assumption/aspect which is conditional to the findings of the specialists and this EAP is the assumption that the mitigation measures will be carried out as stipulated by each professional/specialist.

Considering the above, it is strongly recommended that the following be included as conditions of authorisation:

- Ensure that the proposed development is developed as per the intention and design philosophy as described in this report.
- The mitigation measures provided by the specialists must be strictly implemented including adherence to all no-go areas and ecological buffers as contained in Appendix B2 of the BAR and EMPr (Refer to Appendix H).
- Mitigation measures noted from this BAR are included in the EMPr (refer to Appendix H). The EMPr and associated appendices (Appendix H) must be implemented and the requirements therein considered and observed as conditions of authorisation.
- The EMPr should be incorporated into all contract documentation and it is the Applicant's responsibility to ensure that the Contractor is made aware of the requirements thereof when preparing a quote for the work
- The final Site Plan is to be approved by the Stellenbosch Municipality prior to commencement of construction.
- The final approved (by Stellenbosch Municipality) Site Plan is to be provided to the DEA&DP for their information prior to the commencement of construction.

	<ul style="list-style-type: none"> • The final Stormwater Management Plan should be approved by the Stellenbosch Municipality and be implemented throughout operational phase of the development. • The landscaping plan and associated planting list (noting that input of the plant list for the fynbos rehabilitation area has been provided by a botanist) must be approved by the Stellenbosch Municipality prior to implementation of the landscape plan. • The final approved (by Stellenbosch Municipality) Landscaping Plan is to be provided to the DEA&DP for their information prior to the implementation of the landscape plan. • An ECO must be employed throughout the duration of the construction phase of the activity and the Applicant should also ensure that operational phase recommendations are strictly adhered to. • The monitoring and auditing of the operational phase would be at the discretion of the DEA&DP, particularly as the listed activities triggered related to the development (i.e. construction phase), however it is recommended that a single operational audit be conducted by a suitably qualified, independent professional six to nine months following commencement of the operational phase in order to ensure that the proposal remains developed as planned and also to ensure that the fynbos rehabilitation areas as per the landscape plan have established. The audit report should be submitted to the DEA&DP and this could serve to inform their requirements for future operational audits. • Any conditions which may be required by the DWS linked to the GA issued for this proposed development. • A copy of the final defined/adopted Maintenance Management Plan and cover letter must be submitted to the responsible water authority. • As updated plans and documentation are required in terms of the EMPr which can only be completed upon detailed design of the proposed development, the updating of these items should not necessitate an Amendment Application for an amendment to the EMPr for each site. The updates are restricted to the following: <ul style="list-style-type: none"> ○ Incorporate conditions and specifications imposed by the DEA&DP if Environmental Authorisation is granted; ○ Incorporate conditions related to the GA; ○ Reflect the final approved Stormwater Management Plan; and ○ Reflect the final approved Landscaping Plan.
2.3.	Provide a reasoned opinion as to whether the proposed activity or development should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be included in the authorisation.
	<p>The decision for the authorisation lies with the Competent Authority and should be taken based on the information provided. This report contains clarity on unresolved issues from the pre-application <u>and post-application</u> draft Basic Assessment report and <u>has</u> incorporated <u>all</u> I&AP comments. The decision should be taken by considering all impacts and the way they weigh up against one another, as well as the I&AP comments and the responses provided thereto.</p> <p>Independent specialist assessment has culminated in recommendations to approve the proposed development. From an agricultural perspective, it should be authorised as the site and potable water line routes are not suitable for farming (Lanz, 2021). From a terrestrial biodiversity/ecology perspective, it should be authorised without any regionally or nationally significant ecological impacts (Helme, 2021). It has also been recommended that the development can be approved from a transport perspective (Pretorius & Sequeira, 2020). From a heritage perspective, the proposed development can occur in way which is sensitive to the cultural landscape and social history of the site and would also revitalise a derelict area of the farm and provide a reinvigoration of a historic link along the Ou Wa-pad, thereby providing positive operational impacts (Smuts & Scurr, 2020). Furthermore, the proposed potable water pipeline would not have significant adverse impacts on heritage resources (Smuts & Scurr, 2021). From an aquatic biodiversity/ecological perspective, the impacts of greatest severity are linked to the construction activities proposed for the flood protection measures, footpaths, service track (alternatives 1 and 2), amphitheatre, and water pipelines (Snaddon, 2021). However, these impacts can be mitigated against, which would reduce the significance of these impacts to, at worst, low negative or negligible, for all three development alternatives (noting that the preferred alternative would have comparatively more negligible impacts) and the proposed development could yield positive impacts with the fynbos component (Snaddon, 2021). The site can also be appropriately serviced, noting that confirmation has been provided by Stellenbosch Municipality and Eskom in this regard.</p> <p>It is critical that mitigation measures required by specialists and specifications documented in the EMPr are adhered to. The remaining recommended conditions of authorisation are listed in Section J 2.2. above. <u>This report for final decision-making has been provided to the DEA&DP for decision-making since the public participation process has now been concluded.</u></p>
2.4.	Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.
	<p>It is uncertain whether the Contractor would implement the EMPr as required, however there are legal mechanisms in place to avoid this and the EMPr (and EIA Regulations, as amended) includes a requirement for auditing and the Applicant/Holder of the Environmental Authorisation would be required to include the EMPr in all contract documentation.</p> <p>The impacts indicated for the "existing rights" alternative have not been contemplated "with mitigation" as, in some cases, there is no legal provision for implementation of specific measures in the form of an EMPr beyond the general laws that apply under existing rights (e.g. Municipal By-Laws and NEMA "duty of care").</p> <p><u>Comments from State Departments is no longer recognised as a gap in the knowledge seeing that the public review of the post-application Draft BAR was concluded and comments received thereon recorded, responded to and incorporated into the Final BAR.</u></p> <p>Note that assumptions related to specialist assessments are indicated in the relevant specialist reports in Appendix G. There are, however, no significant gaps in knowledge in any of those assessments that would reduce confidence in the findings.</p>
2.5.	The period for which the EA is required, the date the activity will be concluded and when the post construction monitoring requirements should be finalised.

A validity period of five years for commencement of construction would be sufficient. It is recommended that the date that the activity would be concluded be indicated as six years after the Environmental Authorisation date. The reason for this is that there are significant works within the stream required and a key mitigation measure provided in Snaddon (2021) in this regard is that works in the watercourse must only occur during the dry season, which limits the construction programme to specific times of the year in those areas.

Post-construction monitoring and implementation of the operational EMPr would be required, the details of which have been included in the EMPr, but the extent of auditing must be confirmed by the DEA&DP in their decision on the application (if they choose to grant authorisation).

3. Water

Since the Western Cape is a water scarce area explain what measures will be implemented to avoid the use of potable water during the development and operational phase and what measures will be implemented to reduce your water demand, save water and measures to reuse or recycle water.

The design itself incorporates the concept of minimal hard surfaces through keeping the building footprint for additional buildings to a minimum and through maximum use of permeable surfacing in the hard landscaping to improve water infiltration. The landscape concept indicates that the landscaping associated with the proposed development would incorporate largely indigenous species as well as water-wise plants to keep water demands to a minimum. The planting list and associated indigenous species have been reviewed and recommended by an independent botanist and would, therefore, not have excessive water requirements which would not be in synergy with the weather and climatic conditions of the local area (i.e. the plants recommended are typical of those naturally suited to local conditions).

Watering/ irrigation would also only be done during appropriate times of the day.

Taps and showers would also be fitted with low-flow heads.

Surface flow would be allowed to pass through the development by surface escape, s into proposed gardens/ landscaped areas (Middelmann & Hurworth, 2021) in order to reduce watering requirements

Measures to limit the use of water during construction/development activities have also been included in the EMPr. These include aspects such as making use of non-potable water for construction activities as far as possible as well as covering stockpiles during high-wind conditions in order to minimise the need for spraying.

4. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.

Details on the waste management hierarchy have been included in the EMPr and would guide waste management during the construction phase of the proposed development. These measures included for example, waste sorting, recycling, careful temporary stockpiling, disposal, etc.

There are also waste management measures to encourage avoidance, reduction, minimisation, re-uses, and recycling in for the operational phase. Examples include recycling and awareness/education. The waste generated by the proposed development would be incorporated into the system of the overall farm, which engages in recycling and composting.

Note that the Stellenbosch Municipality has also confirmed capacity to accommodate construction waste at the alternative site being used by the Municipality for disposal, but has added that if the construction phase entails generating large spoil volumes, the Developer must identify and give proof of an alternative disposal site, as the municipality will not be able to accept large spoil volumes, due to capacity constraints at the landfill site. This requirement has also been added to the EMPr.

5. Energy Efficiency

8.1. Explain what design measures have been taken to ensure that the development proposal will be energy efficient.

It is recommended that energy efficiency should be included in the design and development and water heating would have to comply with SANS 204. This could be achieved through a combination of strategies such as heat pumps, solar power, consideration of natural ventilation in the design, energy efficient air-conditioning systems, etc. Measures have been incorporated into the design and planning phase specifications of the EMPr.

The use of rooftop solar units is also intended in order to reduce demand on the Eskom. Note that the installation of rooftop solar units does not trigger any Listed Activities in terms of the EIA Regulations, 2014 (as amended).

SECTION K: DECLARATIONS

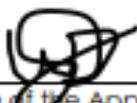
DECLARATION OF THE APPLICANT

Note: Duplicate this section where there is more than one Applicant.

I, William David George....., ID number 6911235043082.....in my personal capacity or duly authorised thereto hereby declare/affirm that all the information submitted or to be submitted as part of this application form is true and correct, and that:

- I am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment ("EIA") Regulations, and any relevant Specific Environmental Management Act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- I am aware of my general duty of care in terms of Section 28 of the NEMA;
- I am aware that it is an offence in terms of Section 24F of the NEMA should I commence with a listed activity prior to obtaining an Environmental Authorisation;
- I appointed the Environmental Assessment Practitioner ("EAP") (if not exempted from this requirement) which:
 - meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
 - meets all the requirements other than the requirement to be independent in terms of Regulation 13 of the NEMA EIA Regulations, but a review EAP has been appointed who does meet all the requirements of Regulation 13 of the NEMA EIA Regulations;
- I will provide the EAP and any specialist, where applicable, and the Competent Authority with access to all information at my disposal that is relevant to the application;
- I will be responsible for the costs incurred in complying with the NEMA EIA Regulations and other environmental legislation including but not limited to –
 - costs incurred for the appointment of the EAP or any legitimately person contracted by the EAP;
 - costs in respect of any fee prescribed by the Minister or MEC in respect of the NEMA EIA Regulations;
 - Legitimate costs in respect of specialist(s) reviews; and
 - the provision of security to ensure compliance with applicable management and mitigation measures;
- I am responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority, hereby indemnify, the government of the Republic, the Competent Authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which I or the EAP is responsible in terms of the NEMA EIA Regulations and any Specific Environmental Management Act.

Note: If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.



01 February 2022

Signature of the Applicant:

Date:

Boschendal (Pty) Ltd

Name of company (if applicable):

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

I, Marielle Penwarden, EAPASA Registration number 2019/1988 as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- The inclusion of comments and inputs from 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, and that:
- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal, or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application;
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to, and submitted to the Competent Authority in respect of this application;
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations;



19 November 2021

Signature of the EAP:

Date:

CHAND ENVIRONMENTAL CONSULTANTS

Name of company (if applicable):

DECLARATION OF THE REVIEW EAP

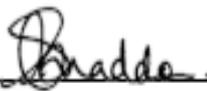
NOT APPLICABLE

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I Kate Snaddon, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



Signature of the Specialist:

31 January 2022

Date:

Freshwater Consulting cc

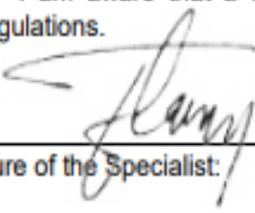
Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I Johann Lanz....., as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

 28 / 01 / 2022

Signature of the Specialist: Date:

Johann Lanz - Soil Scientist

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I NA Helme, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



31 Jan 2022

Signature of the Specialist:

Date:

Nick Helme Botanical Surveys

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I MARK OSELT as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - o other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - o am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

Signature of the Specialist: _____

Date: _____

01 February 2022

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I MICHAEL JOHN SCURR as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

Signature of the Specialist:



01 February 2022

Date:

RENNIE SCURR ADENDORFF ARCHITECTS
Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I **Lynne Pretorius, Pr.Eng** the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

Signature of the Specialist:



Digitally signed by Lynne Pretorius
DN: cn=Lynne Pretorius,
o=Innovative Transport Solutions,
ou, email=lynne@ntsigsolba.co.za,
c=ZA
Date: 2022.02.01 12:15:45 +02'00'

Date:

INNOVATIVE TRANSPORT SOLUTIONS

Name of company (if applicable):

DECLARATION OF THE REVIEW SPECIALIST

NOT APPLICABLE

SECTION L: REFERENCES (note this section has been added to the BAR template by the EAP)

Cape Winelands District Municipality. 2007. *Draft Spatial Development Framework: District Management Area*. Stellenbosch.

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