SCOPING REPORT WITH IMPACT ASSESSMENT

ONGAVA HAI//OM LODGE AND ETOSHA SOUTH TRAVERSING CONCESSION

ONGAVA
HAI//OM TOURISM

Prepared for Ongava Hai//om Tourism (Pty) Ltd as part of the EIA process and application for Environmental Clearance

Date 25 April 2025

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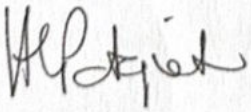
SIGNATURE	

Disclaimer

This document was prepared by Henriette Potgieter with all reasonable skill, care and diligence, utilising resources devoted to the project by agreement with the proponent. Information contained herein is based on the best professional interpretation of data at the time of writing. Data was collected by the author and provided by the proponent and specialists, and it was accepted in good faith as being accurate and valid at the time of writing.

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EXECUTIVE SUMMARY

Introduction

The construction and operation of a tourist lodge is a listed activity that requires Environmental Clearance from the Ministry of Environment, Forestry and Tourism (MEFT). The proponent, Ongava Hai//om Tourism (Pty) Ltd (OHT), plans to build and operate a 24-bed eco-lodge with 70 - 80 permanent employees on a concession inside and adjacent to Etosha National Park (ENP).

Land use and ownership

The !Gobaub Hai//om Tourism Activity and Traversing Concession consists of two concession areas combined:

i) The Etosha South Traversing Concession Area, located in southeast Etosha National Park (ENP) and
ii) The Joint Venture Traversing Concession Area (JV concession) on government land, sharing its northern border and an exclusive access gate with ENP.
These two concession areas are jointly referred to as the !Gobaub Hai//om Tourism Activity and Traversing Concession, hereinafter called **the Concession**.

The Concession and the rights to develop a tourism project were given to the !Gobaub Hai//om community, and the project was defined and agreed in a Head Concession Agreement (HCA) between the community and MEFT in 2012.

The proponent has the exclusive right to access the roads and tracks in the Etosha South Traversing Concession and also the exclusive right to access, build and use a game viewing hide at !Gobaub spring in ENP.

After a public tender process in 2020, OHT was appointed the preferred bidder and a Concession Operator Contract (COC) was signed between the !Gobaub Hai//om Community Association (Hai//om Association) as Concessionaire and OHT as the Operator. The lodge and its associated activities will be managed by a Joint Venture Management Committee (JMC) consisting of representatives of OHT, the Ministry of Environment, Forestry and Tourism (MEFT) and the Hai//om Association.

Rationale for the project

The project will generate substantial income, employment and training opportunities in a district with few to no prospects for sustainable development. The Hai//om community, represented by the Hai//om Association, will receive 75% of the concession fees, and MEFT 25%. The fees are based on a minimum amount and/or a percentage of net turnover according to the terms of the COC.

The Hai//om Association and the Traditional Authority each holds 8% shares (total of 16%) in Ongava Hai//om Tourism (Pty) Ltd, and at end of the 25-year term of the concession all the assets and the entire equity of the going concern will be transferred in full to the Hai//om Community.

A conservation rationale is that a band of protected land with black rhino custodianship farms along the southern border of ENP will contribute to biodiversity conservation on a landscape level. In achieving this aim OHT collaborates closely with the Africa Wildlife Conservation Trust, a non-profit conservation organisation.

Methodology

A methodology as stipulated in the Environmental Management Act 7 of 2007 (EMA)and the EIA Regulations of 2012 was followed. A team of specialists, including environmental assessment specialists, hydrologists, biodiversity experts, socio-economic consultants, a soil scientist, and archaeologists conducted the scoping and assessment process.

The scoping and assessment followed these steps:

- Screening and registration with MEFT
- Public consultation round 1
- Baseline description of the current environment and impact assessment
- Public review of the Scoping report and Environmental Management Plan (EMP)
- Submission to MEFT
- Authority review and decision

Public consultation

The requirements for public consultation in Regulations 21 – 24 of the EIA Regulations, 2012 were followed. The aims of public consultation are to identify potential impacts that the proposed project may have, and to enable transparent decision-making by state, community and private stakeholders.

Newspaper advertisements, site notices and direct communication were the channels used for notifying stakeholders that an EIA process was underway. Special measures were taken to engage the Hai//om community to ensure their concerns and interests were considered throughout the EIA process.

Consultations included two Hai//om community meetings, discussions with ENP management, and engagements with MEFT. Key concerns included potential cultural site disturbances, community benefits, and wildlife impacts.

Two key positive impacts emerged from the consultations. The first is financial and educational upliftment of the Hai//om community, and the second is additional protection for critically endangered species in the ENP, especially the black rhino.

Legal framework

The project aligns with multiple legal instruments, including:

- The Environmental Management Act (2007) and its regulations. Requires an EIA for tourism developments.
- The National Heritage Act (2004) and its regulations. Governs protection of cultural and historical sites.
- The Water Resources Management Act (2013) and its regulations. Regulates groundwater use and pollution control.

- National policies
- International treaties, conventions and agreements.

Project description

The lodge will be built on the JV concession and will have a total footprint of 13,400 m^2, including the guest areas, staff village and support infrastructure.

1.1. Construction phase

Construction will take approximately 24 months and will start as soon as the ECC is issued. Building materials will be transported from road D2779 to a central construction yard close to the road and from there will be further distributed to the various sites with smaller trucks.

Earthmoving machinery will be used to a limited extent to prevent unnecessary risks to the soil and topography. A civil contractor will construct the road network. 50 - 80 construction workers will be accommodated in a temporary builders' camp with ablution facilities on a brownfield site on the JV concession.

1.2. Operational phase

Activities during the operational phase include game drives in ENP, game drives on the JV concession, scenic helicopter flights over the JV concession, guided hikes and spa treatments to its guests. Other activities will be deliveries of food and groceries, removal of solid waste, sewerage systems, anti-poaching patrols, access control and maintenance of infrastructure and vehicles.

1.3. Infrastructure

The project will accommodate 24 guests and 6 pilot/guides in free-standing rooms, all en suite. Communal areas will consist of sitting and dining areas, ablution facilities, swimming pool, library, wine cellar, underground hide, fire pit and a boma for al fresco dining. A guest experience centre will contain a spa, curio shop, museum, lecture room, training facilities and a small kitchen.

The staff village will have 70 en suite single rooms, dormitories for trainees, a kitchen, dining room, entertainment area, outdoor gym and swimming pool and a synthetic turf sports field of 900 m^2.

Support infrastructure includes a workshop complex and laundry near the staff village. Sewage will be treated and discharged strictly according to provisions in the Effluent Discharge Permit issued by the Department of Water Affairs. All energy for the project will be provided by solar and inverter systems. Gas will be used for cooking and wood burning fireplaces will be installed in the rooms.

An airstrip of 1,500 x 60 m with ablution facilities will be constructed on Farm Werda.

The access roads and game drive routes were designed by a soil scientist considering soil, topographical, hydrological, archaeological, wildlife and vegetation analyses. Professional contractors will perform annual road maintenance, while the lodge maintenance team will do erosion prevention and ad hoc maintenance.

Receiving environment

1.4. Climate

The semi-arid climate and unpredictable rainfall cause dry conditions, and fire risks are a key management concern.

1.5. Topography

The landscape features karst hills, ephemeral pans, and open savannah.

1.6. Archaeology and heritage

A field assessment identified an historical grave near !Gobaub spring, and other potential grave sites may exist and require conservation measures. The National Heritage Council (NHC) issued a consent with conditions for the project, and the proponent is committed to complying with the conditions, including no-go buffer zones and a chance find protocol.

1.7. Biodiversity

The critically endangered black rhino is a key species of conservation concern in the project area. According to Mr Bennett Kahuure, Director of MEFT's Directorate of Wildlife and National Parks, the current biodiversity sensitivities relating to this project stem from the threat of poaching, and the private sector provides additional security in this regard.
It is estimated that 79 species of reptile, 15 amphibian, 115 mammal, 261 bird species, 129 trees and shrubs, and 112 grasses are known or expected to occur in the area. Although some of these are endemics, they are widespread in similar habitat types in the region, and it is unlikely that they would be affected significantly by the development.

The footprint of the development is relatively small and may have only localised, short-term negative impacts on the ecosystem, flora and vertebrate fauna. Except for karst hills, the proposed development sites are not on any high-value habitats and the sites are heavily impacted by past farming activities. It is likely that any potential habitat disturbance or destruction would be limited in scale, intensity and duration.

1.8. Hydrogeology

Water will be required for construction of the lodge, airstrip and roads. During operations water will be needed for game watering and human consumption at a projected usage rate of 150,000 l/month. Hydrogeological testing of boreholes showed that sufficient water is available to meet the estimated water demand.

Groundwater on farm Werda is at a depth of 20 to 30m and is susceptible to pollution from the ground surface. Any wastewater treatment facility and waste disposal should be located at the maximum depth to groundwater such as the southwestern part of Werda.

The area in general may be prone to pluvial flooding after sustained rainfall due to its gentle slope. Particularly, runoff along gravel roads is expected if not properly drained and could result in hazardous road conditions. Proper drainage of tracks and roads will be required.

1.9. Socio-economy

A lack of adequate economic opportunity is a key cause of poverty. A contributing factor is a high level of inequality: low levels of formal schooling, no tertiary education, lack of skills development, inability to compete in the labour market. Poverty is ongoing, cyclical, and

intergenerational. Poor households can rarely afford education, health care or proper housing, aspects that are borne out by the socio-economic study that was done for this project. The study identified a low literacy rate and understaffed clinic as two key challenges for the Hai//com community.

The San people, including the Hai//om communities, are the most affected Namibian ethnic group in terms of landlessness and land dispossession. They face extreme marginalisation and have lower overall indicators (including economic development, education and political representation) than any other ethnic group in Namibia.

1.10. Soil and roads

All the proposed infrastructure, including roads, will be located on Pellic Vertisols, a soil type with a high sensitivity rating, making it crucial to follow the customised road design and implementing the road management plan in the EMP.

A soil conservation strategy of no off-road driving is recommended to minimise erosion, runoff and habitat disturbance. By implementing targeted measures such as effective drainage systems, vegetative buffers and closing some roads during the wet season, the adverse effects of road use on soil quality and overall ecological balance can be mitigated. Ongoing monitoring, restoration, and guest and guide education during the operational phase are essential and will ensure responsible access while protecting vital soil resources and biodiversity.

Impact assessment

The project location on the border of ENP and within the Hai//om community makes it a sensitive project with the potential to impact the environment. The specialist studies commissioned for this development and consultation with I&APs during the scoping and assessment process were used to identify potential impacts.

The biodiversity, hydrogeological, soil and heritage specialists assessed impacts of significance. Impacts of lower significance, either because of their low severity, small extent, short duration, or the disturbed nature of the receiving environment were assessed by the EAP. Socio-economic impacts were identified using the socio-economic baseline study, community consultation and the COC. The COC also regulates the financial and other benefits due to the community.

Table I gives a summary of the potential impacts, the source of risk, and an assessment of their significance with and without mitigation. Management and mitigation measures are provided in the EMP for this project.

Table I. Summary of potential impacts

Description of Impact	Description of significance	Mitiga-tion	Signifi-cance
BIODIVERSITY			
Disturbance of vertebrate fauna	The disturbance of animals in their foraging and movements may increase the risk of mortality. The impact is at the level of individual animals and the loss of species is highly unlikely. The small size of the project footprint limits the extent of significance. Operational activities have low potential of causing this impact.	without	-L
		with	-VL
Loss of vertebrate fauna (linked to habitat destruction)	Death of organisms and destruction of habitat represent permanent loss and degradation at the level of individual animals and small locations. No species is expected to be affected to any meaningful level. The extent of the impact is limited to the project site.	without	-L
		with	-VL
Loss of protected terrestrial flora. Loss of sensitive habitats. Construction phase: clearing of land	Death of organisms and destruction of habitat represent permanent loss and degradation at the level of individual animals and small locations. No species is expected to be affected to any meaningful level. The extent of the impact is limited to the project site. Prevention and mitigation are addressed in the EMP.	without	-L
		with	-VL
Soil erosion (post-construction phase: access routes & roads/tracks in erodible soils; borrow pits)	Dust pollution. Erosion is discussed under "soil impacts". Management measures are provided in the EMP.		
Invasion & spread of invasive alien plant species (post construction)	Invasive plants affect the integrity of ecosystems.	without	-H
		with	-VL
Contribution to scientific knowledge	Results of the biodiversity and ecological study are available to inform decision making		L+
Security for Black Rhino	Poaching is the biggest threat to rhinos. OHT will provide additional layers of security, as described in Section 7.1.2.		H+
Reverse negative impacts from previous land use regimes & restore integrity of local ecosystems.	Reintroduction of rare/endangered species to their former habitat will contribute to the survival of species, and encourage functioning ecosystems.		H+
ECOLOGICAL IMPACTS			
Soil & water contamination, solid waste, sewerage, water use, energy, noise and light pollution, vehicle use, landscaping, human-wildlife interaction.	These impacts were not assessed because they can be prevented or managed to a very low significance by implementing the measures in the EMP.		
SOCIO-ECONOMIC IMPACTS			
All phases: increase in crime, violence, domestic violence and sex work. Operational phase: substance dependence, financial dependence.	An entire community may be affected by a cycle of dependence and crime. A social protection programme is recommended and discussed in the EMP.	without	-H
		with	-L
Community development	Benefits are stipulated in the COC and monitored by the JMC. Discussed in Section 6.6 and 7.2.4.		VH+
HYDROGEOLOGY			
		without	-H

Description of Impact	Description of significance	Mitiga-tion	Signifi-cance
Accumulation of rainwater and runoff water in the pits is expected and could infiltrate underground or overflow and potentially contaminate surface flow.	Cumulative impact: Groundwater contamination from waste or polluted surface runoff to karst aquifer is difficult to clean. Contamination can occur repeatedly during rainy season and accumulate if the source is not removed.	with	-VL
Contamination of groundwater	Cumulative impact: Groundwater contamination from wastewater to karst aquifer. May be a continuous source of contamination that can accumulate, but this impact is minimised by installing effective sewerage systems. Potential hydrocarbon spillage is limited in extent and mitigated in the EMP.	without	-H
		with	-VL
Sustainability of water supply sources.	Groundwater over-abstraction can lead to dewatering of the aquifer. The impact is reversible depending on rainfall and recharge. Additional resources are to be identified.	without	-H
		with	-L
HERITAGE			
Damage to or destruction of sites with cultural value.	Graves were identified. Potential impacts will be avoided by identifying, demarcating and fencing (where appropriate) heritage finds, and following the chance find protocol given in the EMP.	without	-L
		with	-VL
SOIL IMPACTS			
Soil contamination	See "contamination of groundwater".		
The soil type on which infrastructure will be built is susceptible to waterlogging in wet season and compaction in dry season, leading to erosion and structural degradation.	Degraded soils are cracked and compacted, decreasing their production capability and conservation value. Substantial management efforts are required and the road management plan provided in the EMP must be followed.	without	-VH
		with	-L

Conclusions and Recommendations

The aim of the scoping study with impact assessment was to identify the environmental impacts, both positive and negative, associated with the proposed project. The public consultation process played an important role in determining potential impacts and allowed comments and concerns from the local community and the public to be addressed.

This report presents:

- The EIA process that was followed
- Results of the public consultation process
- A project description
- A baseline description of the receiving environment sourced from five specialist studies
- Potential environmental and social impacts

No fatal flaw was identified during the scoping process, and the identified negative impacts can be mitigated to very low levels. The EMP that accompanies this report provides prevention, mitigation and management measures to avoid or minimise negative impacts and enhance positive impacts. The JMC is a monitoring mechanism to ensure that the EMP, HCA and COC are followed.

The project presents low environmental risks with high socio-economic benefits. Ongoing monitoring, adaptive management, and stakeholder engagement are recommended.

It is recommended that an ECC be issued to the proponent, with the condition that the management measures recommended in the EMP be implemented.

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ABBREVIATIONS

Abbreviations and acronyms used in this report.

BID	Background Information Document
CITES	Convention on International Trade in Endangered Species
COC	Concession Operator Contract
DSS	Directorate of Scientific Services
DWNP	Directorate of Wildlife and National Parks
EAP	Environmental Assessment Practitioner
EAPAN	Environmental Assessment Professionals of Namibia
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
ENP	Etosha National Park
GG	Government Gazette
Hai//om Association	!Gobaub Hai//om Community Association
GN	Government Notice
HCA	Head Concession Agreement
HIA	Heritage Impact Assessment
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
I&APs	Interested and Affected Parties
IUCN	International Union for Conservation of Nature
IRR	Issues and Response Register
JMC	Joint Management Committee
JV	Joint Venture
MAWF	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy
NCO	Nature Conservation Ordinance 4 of 1975
NHC	National Heritage Council
OHT	Ongava Hai//om Tourism (Pty) Ltd
QDS	Quarter Degree Square
RAMSAR	The Ramsar Convention on Wetlands
Regulations	Environmental Impact Assessment Regulations, GN 30 of 2012
SABAP2	Southern African Bird Atlas Project 2
ToR	Terms of Reference

1. INTRODUCTION

Ongava Hai//om Tourism (Pty) Ltd (OHT) plans to develop and operate a 24-bed lodge and associated activities in the !Gobaub Hai//Om Tourism Activity and Traversing Concession, located on the southern boundary of Etosha National Park (ENP) 48 km east of Anderssons Gate (Figure 1).

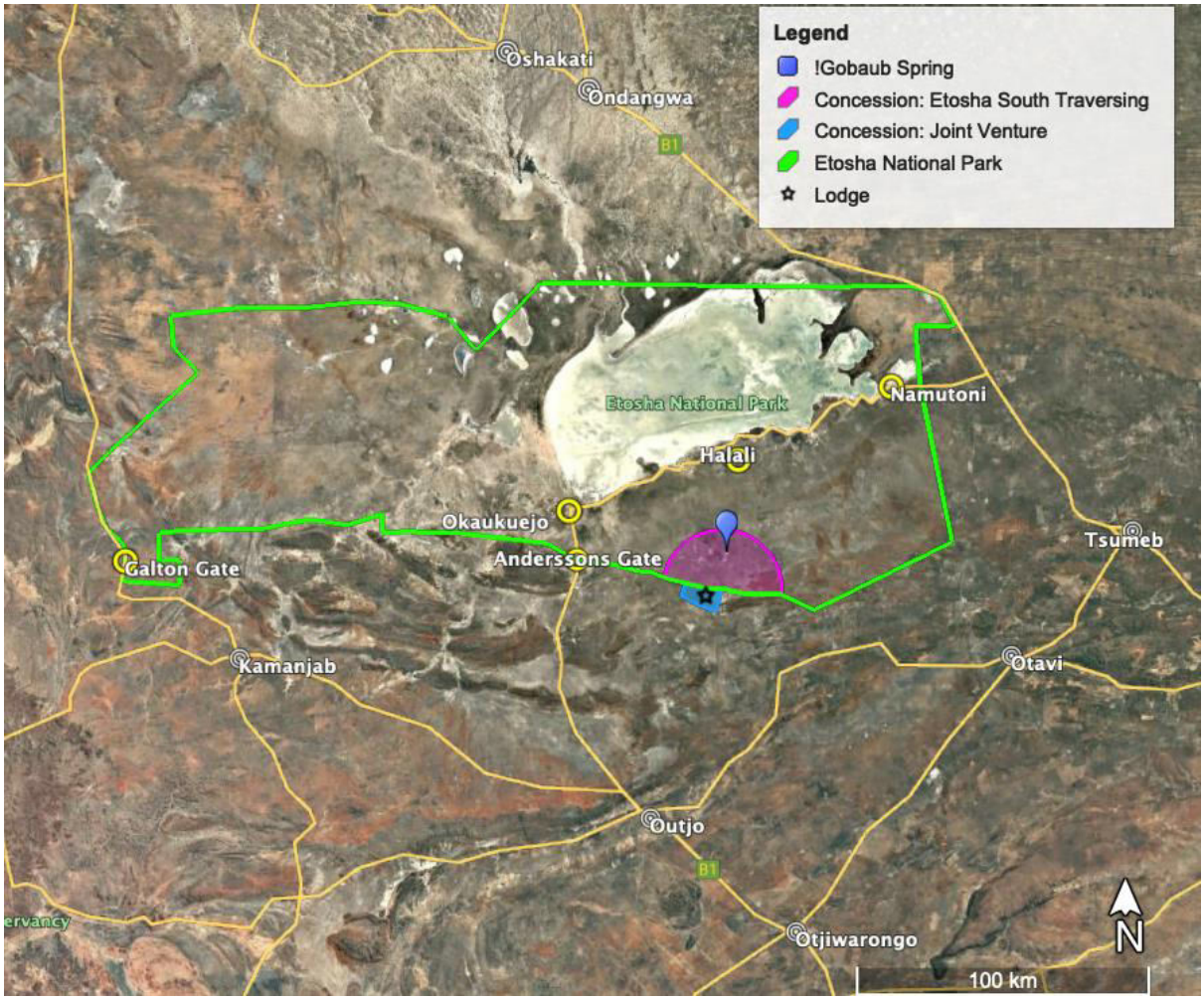


Figure 1. The regional location of the proposed project.

The Environmental Management Act, 2007, (EMA) and its Regulations (January 2012) require listed activities, including lodge development, to undertake an Environmental Impact Assessment (EIA) and obtain Environmental Clearance (EC). An Application for an Environmental Clearance Certificate (ECC) will be submitted to the Directorate of Environmental Affairs (DEA) as well as to the relevant authority: Directorate of Wildlife and National Parks (DWNP) and the Directorate of Scientific Services (DSS).

This environmental scoping report was compiled as part of the EIA process and in partial fulfilment of requirements listed in a screening notice received from the DEA. It presents the results of an EIA scoping process that included specialist studies, public consultation and impact assessment. Information from specialist reports and site visits were combined with contributions from stakeholders and Interested and Affected Parties (I&APs) to describe the receiving environment on and around the Concession, and to identify and assess the potential impacts associated with the project.

1.1. Land use and ownership

The !Gobaub Hai//om Tourism Activity and Traversing Concession consists of two concession areas combined. It is defined in the Concession Operator Contract (COC) as follows:

i) The Etosha South Traversing Concession Area of approximately 632 km² is located in southeast Etosha National Park (ENP) (pink polygon in Figure 3).
ii) The Joint Venture Traversing Concession Area (blue outline in Figure 3) is located on government land that encompasses parts of farm Werda and farm Nuchas, collectively zoned for tourism development facilities.
These two concession areas are jointly referred to as the !Gobaub Hai//om Tourism Activity and Traversing Concession, hereinafter called **the Concession**.

The Concession with rights to develop a tourism project was given to the !Gobaub Hai//om Community Association (Hai//om Association), and the project was defined and agreed in a Head Concession Agreement (HCA) between the community and MEFT in 2012.

According to the HCA the proponent has the exclusive right to access the roads and tracks in the Etosha concession (pink polygon in Figure 3) and the exclusive right to access, build and use a game viewing hide at !Gobaub spring. Vehicles and guides from other lodges, including NWR lodges, are not permitted to enter the concession or to use the game viewing hide or facilities at !Gobaub. The proponent is also allowed to access the ENP public areas from the exclusive Etosha concession.

After a public tender process in 2020, OHT was appointed the preferred bidder and a COC was signed between the Hai//om Association as Concessionaire and OHT as the Operator. The contract has a duration of 25 years, after which the infrastructure and business will become the property of the community. The lodge and associated activities will be managed by a Joint Venture (JV) Management Committee consisting of representatives of OHT, Ministry of Environment, Forestry and Tourism (MEFT) and the Hai//om Association.

1.2. Rationale for the project

The Hai//om community is one of Namibia's three Highly Marginalized Communities and has long been disenfranchised. The Government provided reparations to the Hai//om in the form of (a) resettlement farms selected for their proximity to !Gobaub spring, a sacred location for the community and (b) tourism rights on the Concession.

It is projected that the development will generate substantial income, employment and training opportunities in a district with few to no prospects for sustainable development. The Hai//om community, represented by the Hai//om Association, receive 75% and MEFT 25% of the concession fees. The fees are based on a percentage of net turnover with a minimum flat rate and were agreed between the parties in the HCC and COC.

In addition to concession fees, Hai//om Association and Traditional Authority each holds 8% equity shares in Ongava Hai//om Tourism (Pty) Ltd and at the 25-year term of the concession all the assets and the entire equity of the going concern will be transferred in full to the Hai//om Community.

The demand for tourist beds has increased to higher than pre-Covid levels, and there are no other high-income, low-impact lodge facilities in this area with access to the Etosha South Traversing Concession.

Creating a band of protected land and black rhino custodianship farms along the southern border of ENP will contribute to biodiversity conservation on a landscape level. In achieving this aim OHT collaborates closely with the Africa Wildlife Conservation Trust, a non-profit conservation organisation. Several properties neighbouring the JV concession that belong to the Trust are being prepared for the reintroduction of indigenous antelope species and taking part in the Black Rhino Custodianship programme of MEFT. Three key outcomes are expected from this collaboration:

- Land use that is supportive and in harmony with the management of ENP
- Sustainable livelihoods for ENP neighbours
- A buffer zone along the perimeter of ENP that assists in the protection of endangered species and creates additional habitat for wildlife

1.3. Alternatives

1.3.1. No-go option

The project poses no significant adverse impacts on communities, rhino security or other aspects of the environment, but it will result in significant positive impacts that are discussed in Chapter 7.

Results of the no-go option would be that a disenfranchised community would have no options for development, and rhino conservation on a landscape level would not benefit from an extra layer of protection (Mr Kahuure, Section 3.1.2).

The management measures provided in the EMP mitigate the significance of potential negative impacts to such an extent that the no-go option is not considered a realistic alternative.

1.3.2. !Gobaub hide

The current hide must remain for the use of ENP, but it will be upgraded to make it more visually pleasing. A potential alternative for game viewing by lodge guests is semi-permanent, mobile game viewing units consisting of custom-built trailers that remain at the spring but can be moved once or twice per year as conditions, e.g. seasons or water flow from the spring, change.

The soils around !Gobaub have a high sensitivity rating (Figure 15) and moving heavy, elephant-proof units will have a negative impact on the soil and the tracks will have a negative visual impact. Other potential impacts include disturbance of animals and destruction of the vegetation underneath the stationary units. Compaction of the soil can be minimised in extent, and the other potential impacts can be prevented or mitigated to a very low level of significance.

1.3.3. Airstrip location

Option 1

Figure 2 shows a location for the airstrip on the neighbouring farm Tsabis. The biodiversity specialist pointed out that this location is in the middle of a potential flight path for protected bird species. Biodiversity is discussed in Section 6.4 and the full report is given in APPENDIX VI. There is a waterhole on the eastern side of this option that would have to be closed and moved.

Other disadvantages of this location are the distance to the lodge and the need for building a road that traverses a farm outside the boundaries of the JV Concession.

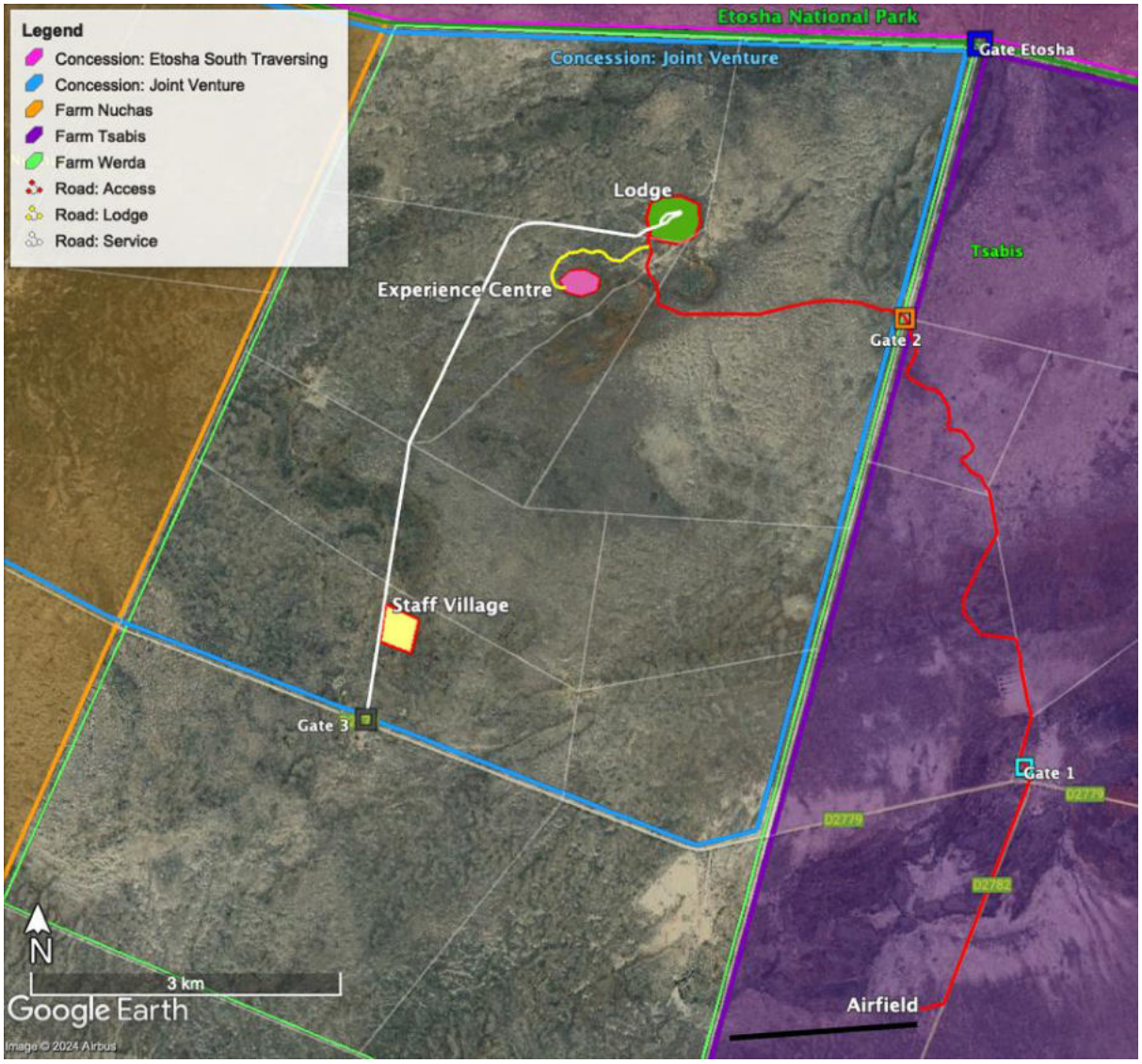


Figure 2. Option 1 airstrip location.

Option 2

This option (Figure 4) is a brownfield site has easy access to the main road (D2779), lodge and staff village, avoids bird flight paths, avoids private land, and is practical for fencing.

Option 2 was chosen as the preferred airstrip site.

1.4. Assumptions and limitations

It is assumed that all information provided by the proponent was true and accurate at the time of writing this report.

The health and safety of guests and staff were not considered in the scoping process since these aspects are regulated by other legislation and it is assumed that the proponent complies with all labour and health & safety laws and regulations.

The Heritage Impact Assessment was done by two separate archaeology specialists. Dr Alma Nankela did a desktop study and baseline report in August 2024 (APPENDIX V A). Due to health reasons, she was not available for the remainder of 2024 and Dr Eliot Mowa did the fieldwork and impact assessment in November 2024 (APPENDIX V B).

1.5. Compliance with EIA Regulations

Table 1 lists the articles in the EIA Regulations (2012) that stipulate the requirements for a scoping report, and the last column lists the section(s) in this report where each requirement is addressed.

Table 1. Legal requirements and the section(s) where they are addressed

Article	Article description	This report
8(a)	A CV of the Environmental Assessment Practitioner (EAP) who prepared the report	APPENDIX I
8(b)	A description of the proposed activity.	Section 5
8(c)	A description of the site on which the activity is to be undertaken and the location of the activity on the site.	Section 5.1
8(d)	A description of the environment that may be affected by the activity and the manner in which the physical, biological, social, economic, and cultural aspects of the environment may be affected by the proposed project.	Section 6
8(e)	An identification of laws and guidelines that have been considered in the preparation of the Scoping Report.	Section 4
8(f)	Details of the public consultation process conducted in terms of Regulation 7(1) including:	Section 3, APPENDIX II
(i)	steps that were taken to notify potentially interested and affected parties of the proposed application;	Section 3.1.1, APPENDIX II E
(ii)	proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given;	APPENDIX II C, D, E
(iii)	a list of all persons, organisations and organs of state that were registered in terms of Regulation 22 as interested and affected parties in relation to the application; and	APPENDIX II B
(iv)	a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues;	APPENDIX II F
8(g)	A description of the need and desirability of the proposed listed activity and any identified alternatives that are feasible and reasonable, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and community that may be affected by the activity.	Section 1.3

Article	Article description	This report
8(h)	A description and assessment of the significance of any significant effects, including cumulative effects, that may occur as a result of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the proposed project.	Section 7, Table 10
8(i)	Terms of reference for the detailed assessment.	APPENDIX I
8(j)	A draft management plan which includes:	APPENDIX IV
(aa)	Information on any proposed management, mitigation, protection or remedial measures to be undertaken to address the effects on the environment that have been identified including objectives in respect of the rehabilitation of the environment and closure.	APPENDIX IV
(bb)	As far as is reasonably practicable, measures to rehabilitate the environment affected by the activity to its natural or predetermined state or to a land use that conforms to the generally accepted principles of sustainable development	APPENDIX IV
(cc)	A description of the manner in which the applicant intends to modify, remedy, control or stop any action, activity or process that causes pollution or environmental degradation, and remedy the cause of pollution or degradation and migration of pollutants.	APPENDIX IV

2. METHODOLOGY

A methodology as stipulated in the EMA and the EIA Regulations (listed in Section 1.5) was followed during the EIA process and is presented in this chapter.

2.1. The EIA team

NAME	ROLE in EIA	REPONSIBILITIES	COMPANY
Henriette Potgieter	EIA project manager	Conduct EIA process, public participation, reporting, EMP	H Potgieter
Werner Petrick	EIA reviewer	Best practice guidance. Review of EIA process and reports.	Namisun
Derek Moore	Proponent	Seat on JMC Technical contributions Implementation of EMP	OHT
Michelle Hastings	Proponent		OHT
Rob Moffett	Proponent		OHT
Russel Hastings	Proponent		OHT
Peter Cunningham	Biodiversity specialist	Biodiversity study & assessment	Env & Wildlife Consulting
Diganta Sarma	Hydrogeology specialist	Hydrogeological study	Hydrosearch
Alma Nankela	Archaeology specialist	Archaeology & Heritage baseline	A Nankela
Eliot Mowa	Archaeology specialist	Archaeology & Heritage fieldwork and assessment	ESM
Gerhard Nortjé	Soil specialist	Soil study & road design	Solo vivo
Maike Prickett	Socio-economic specialist	Socio-economic desktop study	M Prickett

2.2. The EIA process

The steps that were followed during this scoping and assessment process are outlined in this section.

Step 1. Screening and registration

- Collect information from proponent.
- Compile a Background Information Document (BID).
- Register project on the MEFT online portal.
- Receive a screening notice from MEFT (APPENDIX I).

Step 2. Public consultation, Round 1

Identify I&APs, share the BID with them, put up a notice board on site and run an advertisement in 2 newspapers.

Step 3. Baseline description and impact assessment

- Determine the need for specialist input and commission specialist studies.
- Identify potential impacts and assess their significance.
- Compile Scoping Report, appendices and EMP.

Step 4. Public Consultation, round 2: Public Review

- Share the draft Scoping Report and draft EMP with all registered I&APs.
- Allow 14 days for public review.

- Community information meeting with the Hai//om Association.
- Finalise the Scoping Report and EMP.

Step 5. Submission

The final reports and documents are submitted to MEFT: DWNP, DSS and DEA.

Step 6. Authority review

MEFT reviews the application and informs the proponent of the result.

3. PUBLIC CONSULTATION

The requirements for public consultation in Regulations 21 – 24 of the EIA Regulations, 2012 were followed. The aims of public consultation are to identify potential impacts that the proposed project may have, and to enable transparent decision-making by state, community and private stakeholders.

This section provides a summary of the public participation and APPENDIX II contains a full record of the process and all documents.

3.1.1. Notification

- A register of I&APs was compiled (APPENDIX IIB), including the owners and occupiers of the neighbouring land, NGO's, conservation groups, local and national authorities.
- The BID and a cover letter were emailed to pre-identified I&APs on 7 October 2024 and later to other I&APs when they requested to be registered (APPENDIX IIE).
- The BID was hand-delivered on 28 September 2024 to the community (APPENDIX IIE).
- Newspaper notifications were placed in the Republikein, Sun and Allgemeine Zeitung on 8 and 15 October 2024 (APPENDIX IIC)
- Site notices were erected in 4 locations: the access gate to Werda where it is clearly visible from road D2779, the gate between the JV Concession and Etosha (visible to ENP personnel), at the Hai//om Association headquarters and at the Nuchas house gate (APPENDIX IID).

3.1.2. Meetings and key issues raised

Community needs assessment

From 25 to 29 July 2024 a community needs assessment was done by Mr Dave Cole and the Hai//om farms were visited with a translator and secretary. The results of the assessment are discussed in Section 6.6.7 Current situation in project area.

Hai//om community meeting 1

On 28 September 2024 the BID was presented and explained to the community at the Annual General Meeting of the Hai//om Association on farm Nuchas, four printed copies were given to community leaders (APPENDIX II E), and comments were invited.

Hai//om community meeting 2

On 30 January 2025 a meeting was held at Seringkop to update the community on the status of the EIA process and to receive comments for potential inclusion in the final scoping report and final EMP. The meeting was attended by 191 community members and the attendance list and minutes of the meeting are presented in APPENDIX II F.

During this meeting it came to light that there may be graves on Werda and Nuchas, but the elders were not certain of the locations. The chairman of the Hai//om Association, Mr Bon Nu-Eiseb, agreed to take the elders on a grave-finding mission, demarcate the graves, and give GPS locations to the proponent for fencing before construction starts.

Graves and other cultural resources are discussed in Section 6.3 Archaeology and heritage, and management measures are given in the EMP (APPENDIX IV).

Etosha management consultation

On 7 November 2024 the senior management team of ENP was consulted. The minutes may be found in APPENDIX IIF

Key issues raised:

- The possibility of the lodge exiting ENP at 22h00 was put on hold following security concerns raised by ENP management. The matter may be revisited once the project is running, and a stable working relationship has been established between ENP and OHT.
- OHT may build a game viewing structure at !Gobaub or upgrade the existing hide, but ENP needs access for research, game counts and security operations. Any structure needs to be elephant-proof. This is addressed in Section 5.7.2.
- No cctv camera may be erected at !Gobaub due to security concerns.

MEFT: Directorate of Wildlife and National Parks (DWNP) and Directorate of Scientific Services (DSS)

On 15 November a meeting was held with Mr Kahuure, Director of DWNP, Mr Vitalis Mushongo, Chief Warden of the Concessions Unit, and the National Rhino Coordinator, Mr Piet Beytell and the minutes may be found in APPENDIX IIF.

Key issues raised:

- Rhino security. Mr Kahuure said the current sensitivities relating to the project stem from the threat of poaching, but the private sector is not a threat in this regard but rather provides additional security.
- The current contractual allowances and provisions in the HCA and COC must be followed and in case of contradicting provisions, the HCA takes precedence.

4. LEGAL FRAMEWORK

This section presents a summary of the acts, regulations, policies and ordinances that are relevant to the proposed project.

4.1. Acts

The Constitution of the Republic of Namibia, 1990
Environmental protection is entrenched in the Constitution. Article 95(1) deals with biodiversity protection.

The Environmental Management Act 7 of 2007 (EMA) and the EIA Regulations (2012)
The EMA and its regulations cover the management of the environment, EIAs, consultations with stakeholders, and the monitoring of impacts on the environment caused by developments.

This project: The Regulations list "Tourism Development Activities. The construction of resorts, lodges, hotels or other tourism and hospitality facilities" as requiring an EIA.

The National Heritage Act, 27 of 2004
Places and objects of heritage significance are protected under the Act. Heritage Impact Assessments provide the National Heritage Council (NHC) with information to understand the types of heritage resources found in a project area, as well as the likely impact of a proposed activity on the integrity of any heritage resources protected in terms of the Act.

This project: Consent was obtained from the NHC.

The Forestry Act, 12 of 2001 and the Forest Amendment Act, 13 of 2005
Protected plant species may only be removed after obtaining a permit.

This project: no plants will be damaged or removed.

Namibia Tourism Board Act, 21 of 2000
This act provides for the registration and grading of accommodation establishments and regulates matters incidental to the operation of tourism activities.

This project: The Proponent must ensure that the lodge is registered prior to the operational phase.

Petroleum Products and Energy Act, 13 of 1990
If more than 600 litres of fuel will be stored on site, a licence must be obtained from MME.

This project: The Proponent will apply for licence.

The Soil Conservation Act, 76 of 1969 and the Soil Conservation Amendment Act, 38 of 1971
The prevention and control of soil erosion, and the protection, improvement and conservation of soil, vegetation and water sources are governed by this Act.

This project: the contamination of soil can be avoided by following the provisions in the EMP, and the removal of plant cover will be minimal.

The Water Resources Management Act, 11 of 2013, and its Regulations (2023)

This Act governs the use, allocation, control and conservation of surface and groundwater, as well as the development of water supply infrastructure and water pollution.

This project: 3 licences must be obtained from the Department of Water Affairs. A borehole licence for each borehole that is drilled and/or rehabilitated; an abstraction and use licence, and an effluent discharge licence.

4.2. Ordinances

Atmospheric Pollution Prevention Ordinance, 1976 (as amended)
This Ordinance regulates the prevention of pollution of the atmosphere.

This project: Dust will be generated during construction. It is mitigated in the EMP.

The Nature Conservation Ordinance, 1975
The NCO governs the conservation of wildlife and protected areas. It deals with game parks and reserves, hunting, problem animals and the protection of indigenous plants. Permits need to be obtained for the removal of protected plant species.

This project: Incidental disturbance and death of plants and animals are mitigated in the EMP.

The Hazardous Substances Ordinance, 1974
The Ordinance deals with the manufacture, sale, use, disposal and dumping of hazardous substances in so far as they present a health hazard to human beings.

This project: the storage, use and disposal of swimming pool chemicals, housekeeping products, diesel and vehicle oil are dealt with in the EMP.

4.3. National Policies

- National Policy on Tourism and Wildlife Concessions On State Land, 2007
- National Policy on Community Based Natural Resource Management, 2013
- National Policy on human-wildlife Management, 2009
- National Policy on Tourism for Namibia, 2008

4.4. International conventions, treaties and agreements

- United Nations Convention on Biological Diversity
- United Nations Framework Convention on Climate Change
- United Nations Sustainable Development Goals 2015
- International Union for Conservation of Nature (IUCN)
- Convention on International Trade with Endangered Species (CITES)
- The African Convention on the Conservation of Nature and Natural Resources, 2003
- Convention on Migratory Species, 2011

5. PROJECT DESCRIPTION

5.1. Location

The location of the Concession east of Anderssons Gate in ENP is shown in Figure 3.

The proponent has exclusive rights to enter ENP from a private gate on the northern border of farm Werda (blue square in Figure 4), exclusive access to the Etosha South Traversing Concession, and exclusive rights to construct and use a game viewing hide at !Gobaub spring, as stipulated in the HCA and COC.

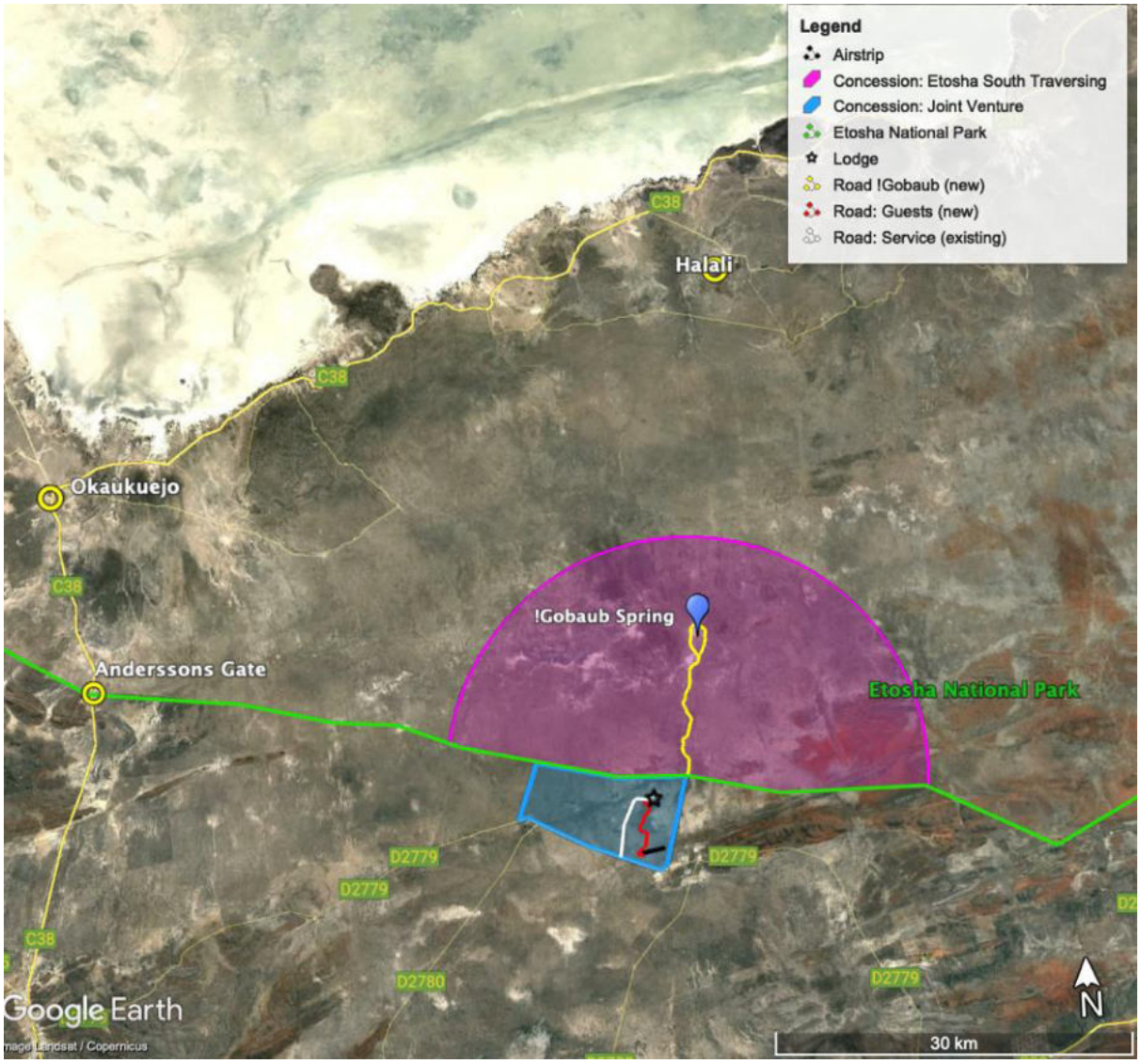


*Figure 3. Location of the two concessions that combine to form **the Concession**.*

The lodge will be built on Werda and its total footprint, including experience centre, staff village and support infrastructure (Figure 4), will be 13,400 m^2.

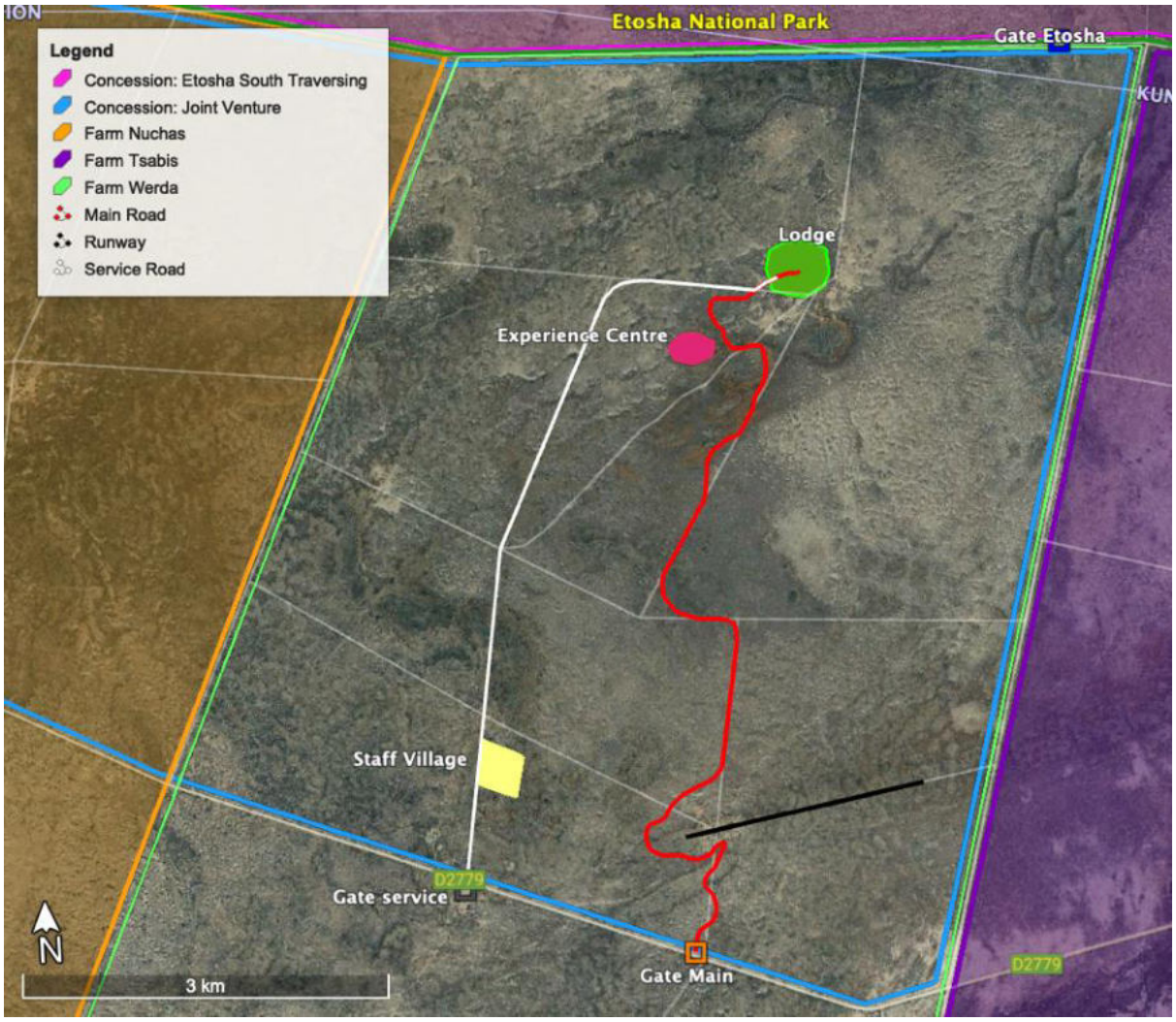


Figure 4. Proposed infrastructure on the JV Concession.

The layout of the lodge is shown in Figure 5, and that of the experience centre is shown in Figure 6.

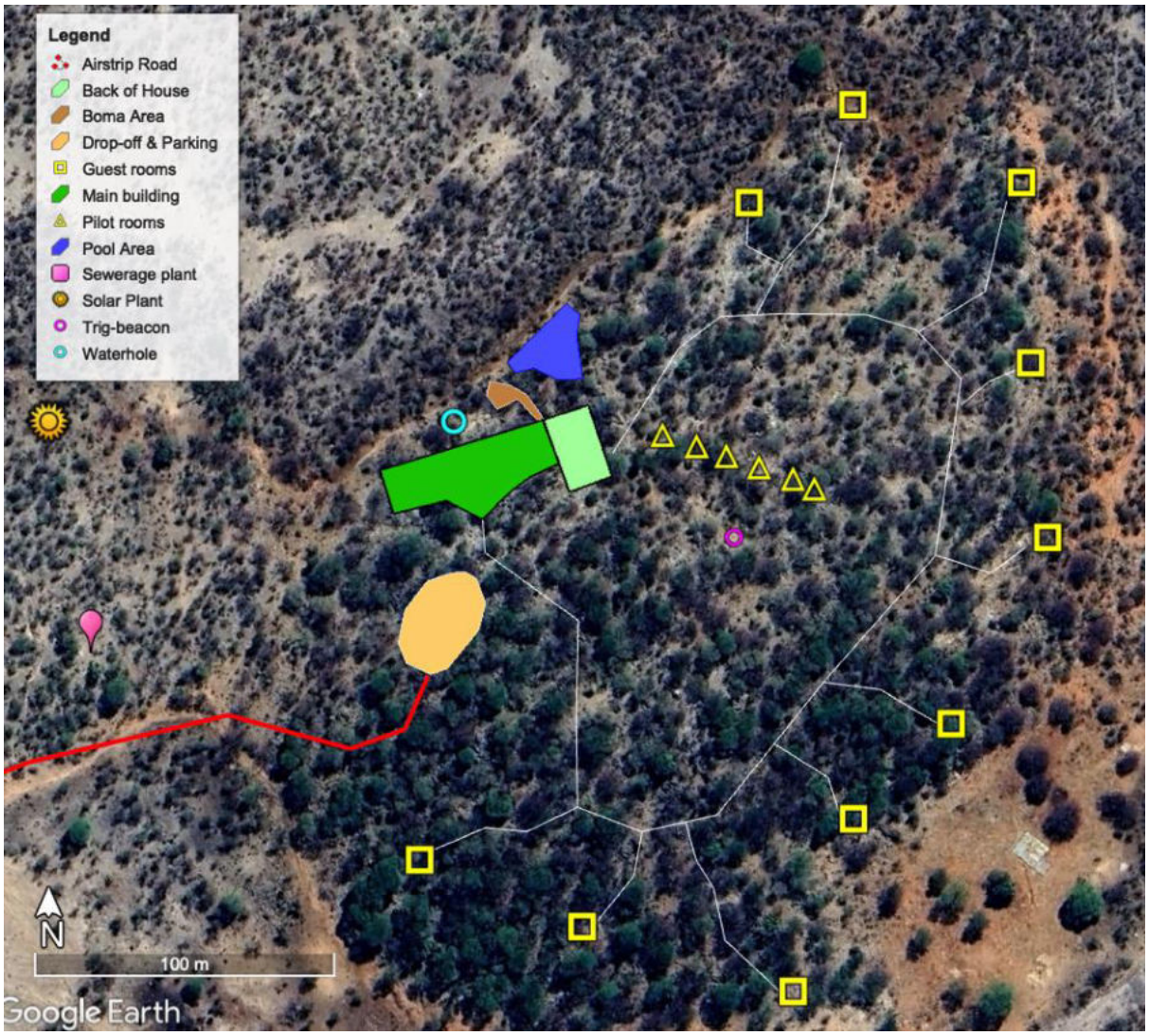


Figure 5. Layout of the lodge.

5.2. Construction phase

Duration of the construction phase is estimated at 24 months and will start as soon as the ECC is issued.

Building materials will be transported from road D2779 to a central construction yard close to the road and from there will be further distributed to the various sites with smaller trucks. Storage may be exposed, under temporary covered structures or in shaded containers depending on the nature of the material.

Electric conduits, water pipes, and sewerage pipes will be installed in trenches in the ground at the staff village and airstrip. Most electric conduits, water pipes, and sewerage will be suspended below the raised walkways at the main lodge. This allows for easy access and reduces visual disturbance on site.

Earthmoving machinery will be utilised during the construction of the lodge and other buildings; however, its use will be minimised and carefully controlled to prevent

unnecessary harm to the soil and topography. An experienced civil contractor will construct the road, using graders, diggers, and compactors as needed.

50 - 80 construction workers will be present on site, housed in a temporary builders' camp on the Hai//om reserve on a brownfield site.

Ablution facilities consisting of portable toilets and showers will be distributed on the various sites and in the builders' camp. A waste management company will collect sewage and wastewater until the sewerage system has been erected.

PV systems and generators will provide electricity during construction.

5.3. Operational phase

Food and maintenance deliveries, movement of staff and guests, food preparation and infrastructure maintenance are the main activities of the lodge operation. All guests, both fly-in and self-drive, will be picked up at the airstrip and transferred to the lodge. No day visitors will be allowed and all facilities and services will be for the exclusive use of guests staying at the lodge with a reservation. There will be no public access to the Joint Venture Concession.

Tourist offerings

Guests will stay on a fully inclusive basis with activities, accommodation, meals and beverages included in the daily rate. The lodge will offer tourist activities led by professional guides, including:

- Game drives in the Etosha South Traversing Concession (pink in Figure 3). The proponent has exclusive access to this concession, and no guides from any other operation, including NWR guides from Okaukeujo, Halali, Namutoni or Onkoshi lodge, will be permitted to enter the Etosha South Traversing Concession or approach the !Gobaub spring or use the facilities. OHT guides on game drive may visit any ENP public access areas and transit through the Park.
- Game drives on the JV concession
- Scenic helicopter flights over the JV concession
- Guided hikes on the JV concession
- Spa treatments

5.4. Infrastructure on the JV Concession

5.4.1. Architect's summary

This summary was provided by the architect for the project, Dexter Bosch.

The OHT lodge project is designed to complement the site's unique qualities, balancing cultural sensitivity, environmental responsibility, and modern advancements. Influenced by Hai//om traditions and materials, the design will integrate local cultural elements with contemporary innovation.

Site Selection and Layout

The main lodge and guest rooms are positioned on the largest northern dolomite koppie on Farm Werda, offering expansive views of the Etosha plains. The main building is located on the koppie's northwestern side, while rooms are distributed around the lower perimeter. A raised timber walkway connects these structures. The design aligns with the landscape, creating a seamless relationship between built and natural elements.

The experience centre and senior staff accommodations are located on the southwestern side of a smaller koppie, hidden from the lodge and guest rooms. The staff village is located near an existing road on suitable soil identified by experts, while the airstrip utilises an existing road and its buildings are on a previously cleared brownfield site. These decisions were taken to minimise ecological and wildlife disturbance.

Architectural Approach

The scale and material palette respect the local context and environment. Buildings will use eco-friendly, locally sourced, and renewable materials, including stone, bricks, concrete, steel, sustainably sourced timber, and artificial thatch. Mopane fence poles from removed internal fences will be repurposed as design features.

Main structures, including the lodge, rooms and experience centre, will be elevated to reduce substrate impact and facilitate construction. These will use a mix of steel, brick, concrete, and timber, with roofs constructed of steel and timber covered in artificial thatch.

Staff accommodations will feature brickwork, lightweight roof trusses, and profiled metal sheeting. Passive design strategies will include cross-ventilation, shading devices, overhangs, and vegetation to reduce heat gain and maintain thermal comfort. Insulation will be added to roofs and cavity walls to enhance energy efficiency, particularly on western- and eastern-facing walls.

Infrastructure and Sustainability

Electricity will be provided by solar panels and battery banks, with backup generators for emergencies only. Most lights will be LED, carefully installed and oriented to reduce light pollution. Energy-efficient appliances and equipment will be used throughout the lodge, and guests will be encouraged to conserve water and electricity during their stay.

Borehole water will be managed with waterwise fittings and monitoring systems. Wastewater will undergo a three-stage treatment process in septic tanks and the BIOROCK system, producing treated effluent that may be safely used for irrigation. Solid waste will be sorted and recycled, and organic waste will be composted and used in the lodge's vegetable gardens, further reducing environmental impact and supporting sustainable practices.

Community and Environmental Impact

Construction activities will minimise environmental impact by restricting site clearing, marking and protecting vegetation, and responsibly managing solid and liquid waste. Fires will be prohibited, and meals for construction workers will be prepared in a central gas-operated kitchen in the temporary builders' camp.

Local labour will be prioritised to create employment opportunities and transfer skills to the community. Community members may also contribute through providing elements such as

carving, weaving and beading, adding cultural richness to the project. After construction completion, all temporary facilities will be dismantled, and the site will be fully rehabilitated to its pre-construction state.

5.4.2. Main lodge

- Arrival space: Guest drop-off area, reception, concierge area and guest washrooms.
- Main social area: indoor lounge, sitting, and dining areas, as well as a bar, library, wine cellar and tasting room.
- The outdoor social area features a pool with a deck and storeroom, an outdoor shower, a lounge, an underground hide, dining spaces, a sundowner fire pit, and a boma.

5.4.3. Back of House

- Kitchen, scullery, walk-in fridge and freezer rooms, waiters' station connecting kitchen and dining area, offices.
- Storage rooms: food, beverages, linen, cleaning materials, housekeeping, pool pump and storage room.
- Staff dining area, two staff washrooms.

5.4.4. Guest experience centre

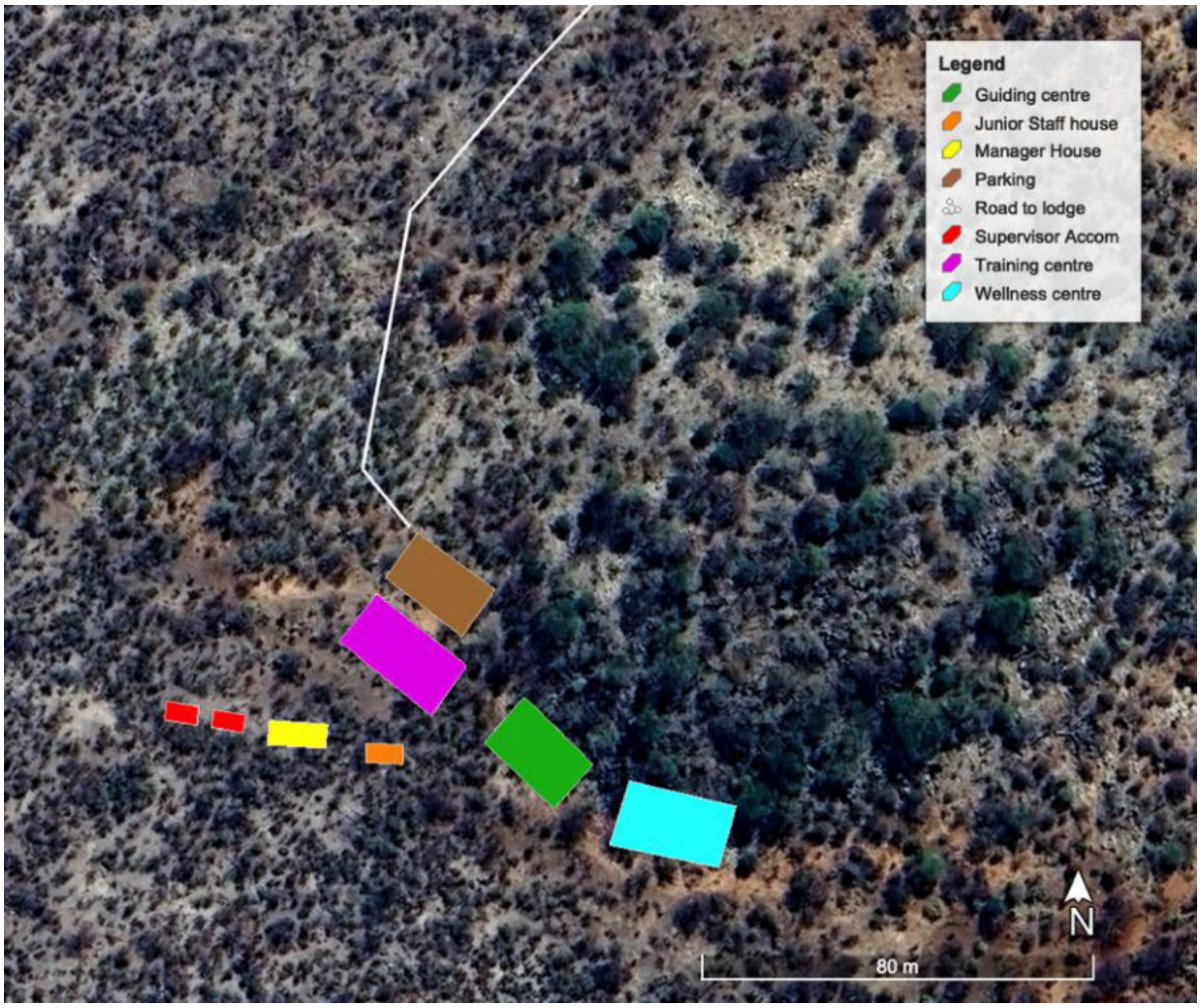


Figure 6. Layout of the experience centre

- A wellness centre with reception, 3 therapy rooms, a sauna, cold therapy room, gym and showers.
- Boutique & artisans' corner, refreshment centre and lounge.
- Guides' area: storeroom and game drive prep kitchen.
- Guest interaction area: displays, curiosities and natural history information.
- Boardroom complex: 3 rooms for training, skills development and meetings.

5.4.5. Guest rooms

- 1-bedroom suites: 8 of 190 m²
- 2-bedroom suites: 2 of 420 m²
- En suite with shower, toilet, basins and bath. Each room will have an indoor sitting area, a veranda with a plunge pool and an outdoor shower.

5.4.6. Pilot and professional guide rooms

- 6 freestanding rooms of 36 m² each
- En suite with shower, toilet, basin, and a veranda.

5.4.7. Staff accommodation

The project will have 70 – 80 permanent employees.

Staff accommodation located at the experience centre

- General manager: 1 house (yellow in Figure 6)
- Supervisors: 2 houses (red in Figure 6)
- Junior staff: 2 en suite rooms for staff on night duty (orange in Figure 6)

Staff village (yellow in Figure 4)

- Senior staff: 10 rooms, en suite and with kitchenette
- Junior staff: 60 rooms, en suite
- Trainees: 2 dormitories with 10 beds each and shared ablutions (male and female separate)
- Staff kitchen and dining area.
- Staff entertainment area, outdoor gym, swimming pool and a multi-sports synthetic turf field of 900 m².
- Staff rooms and facilities will have shade, hot water showers and electricity from a solar system.
- Sewerage: one French drain system, treated with bio-enzymes and effluent discharged to an evaporation pond.

5.4.8. Access to the JV Concession

The Reserve boundaries will have electrified game-proof fences and will be accessible via 3 gates controlled by the proponent. All guests, both driving and flying, will arrive at the airstrip from where they will be transferred to the lodge by the proponent. Only lodge vehicles and approved delivery vehicles will have access to the JV Concession.

The main gate (grey in Figure 4) is an existing gate from road D2779 to an existing service road that will be used for deliveries, maintenance and staff movements.

5.4.9. Airstrip

- A 1,500 x 60 m airstrip with a turning pad on both sides and a helipad.
- Guest lounge, washrooms, shaded parking area for self-drive vehicles, car wash area and storeroom.
- Airstrip structures total 250 m².

5.5. Services

5.5.1. Water supply and reticulation

The projected water usage is 126,000 litres per month, based on 84 people using 100 l/day at a 50% occupancy rate. The water will be used for human consumption, laundry, household cleaning, and sewerage.

Water for the lodge operation will be supplied from boreholes on Werda, fitted with submersible low-volume solar powered pumps. Water will be pumped from the boreholes to six 10,000 litre holding tanks from where it will be pumped to the lodge and water outlets.

5.5.2. Wastewater and sewage

To protect the soil and groundwater, a comprehensive wastewater treatment system for the lodge and experience centre combines a decentralized, non-electric solution with primary, secondary, and tertiary treatment stages. The system uses a septic tank for initial treatment, followed by aerobic digestion and advanced filtration to produce effluent that meets high environmental standards. Effluent will be used for road maintenance, irrigation of the garden and dust suppression, and the remainder discharged into vegetated evaporation ponds.

The wastewater treatment system follows a three-stage process to ensure effective purification. In stage 1, raw sewage enters a septic tank, where solids settle and organic material begins to break down. After that, effluent is transferred via a solar-powered bilge pump to the BIOROCK system. During stage 2, the effluent undergoes aerobic digestion in the BIOROCK unit, significantly reducing organic pollutants. In stage 3, advanced filtration produces treated water that meets high environmental standards, making it safe for discharge or reuse in irrigation applications.

The septic tanks will be seamless one-piece plastic moulded from recycled plastic. They are watertight, easy to handle, and rust—and corrosion-resistant. The wastewater treatment system is adaptable for above- or below-ground installation to minimise environmental impact, depending on site conditions such as rock formations. It is low maintenance and requires periodic inspections and occasional septic tank desludging to ensure reliability.

An ECOROCK-5010 sewage treatment plant with a 5,000-litre capacity will be installed at the lodge. After treatment, the effluent will be discharged into a vegetated evaporation pond.

The guest experience centre and senior staff accommodation will each have an ECOROCK-2000 sewage treatment plant with a 2,000-litre capacity. After treatment, the effluent will be discharged into the vegetation surrounding it.

The staff village and workshop complex will have three ECOROCK-5010 sewage treatment plants, each with a 5,000-litre capacity. After treatment, the effluent will be discharged into the vegetation of an evaporation pond.

The airstrip and ENP gate will each have a Monoblock system with a capacity of 3,000 litres, and the effluent will be discharged into a vegetated evaporation pond.

5.5.3. Solid waste

- Solid waste will be collected from the lodge, guest experience centre, airstrip and ENP gate and taken to an animal- and wind-proof sorting and temporary storage depot at the workshop complex.
- An enclosed incinerator in the workshop complex will only burn a minimum amount of packaging material such as dirty cardboard boxes.
- Organic waste will be donated to surrounding farms as livestock feed or reused as compost in the vegetable garden.
- Recyclable waste will be transported to a recycling facility in Windhoek on empty delivery vehicles.

5.5.4. Energy

- 4 separate photovoltaic (PV) systems will provide all the energy for the project
- PV panels will be mounted either on building roofs, where they will contribute to passive cooling, or used as shaded parking. Where no shading is required, the panel frames will be installed on the ground.
- The lodge, guest experience centre, and staff village will each have a generator to be used only as a backup, e.g. during prolonged overcast periods.
- The staff village will have solar geysers, and all cooking will be done on gas stoves.

5.5.5. Workshop complex

- A workshop for vehicle and general maintenance, located near the staff village (Figure 4).
- Contains a workshop, storerooms, laundry, offices, solid waste depot, car parking.
- Vehicles will be serviced on site by a visiting mechanic. When major repairs are needed, they will be taken to professional service centres in Outjo or Tsumeb. No major mechanical repairs will be done on site.
- Minimal amounts of hazardous waste will be generated, e.g. used hydrocarbons, cooking oil, paint and thinners. They will be stored in sealed drums and removed to an approved hazardous waste facility.

5.5.6. Laundry

The laundry and 5 housekeeping storerooms will be housed in the workshop complex.

5.5.7. Fuel storage and dispensing

- Located at the staff village, fuel will be stored in above-ground tanks with a combined total capacity of 20,000 litres on an impermeable and bunded concrete floor.
- Refuelling will be done on an impermeable and bunded concrete floor that is large enough to park a vehicle and located adjacent to the fuel tanks, eliminating any potential for accidental spillage to reach the soil.

5.5.8. Roads and tracks on the JV concession

The access roads and game drive routes were designed by a soil scientist considering soil, topographical, hydrological, archaeological, wildlife and vegetation analyses (Figure 7). The roads are discussed in Section 6.7, and the full road and soil report may be found in APPENDIX IX. Professional contractors will perform annual road maintenance, while the lodge maintenance team will perform erosion prevention and ad hoc maintenance.

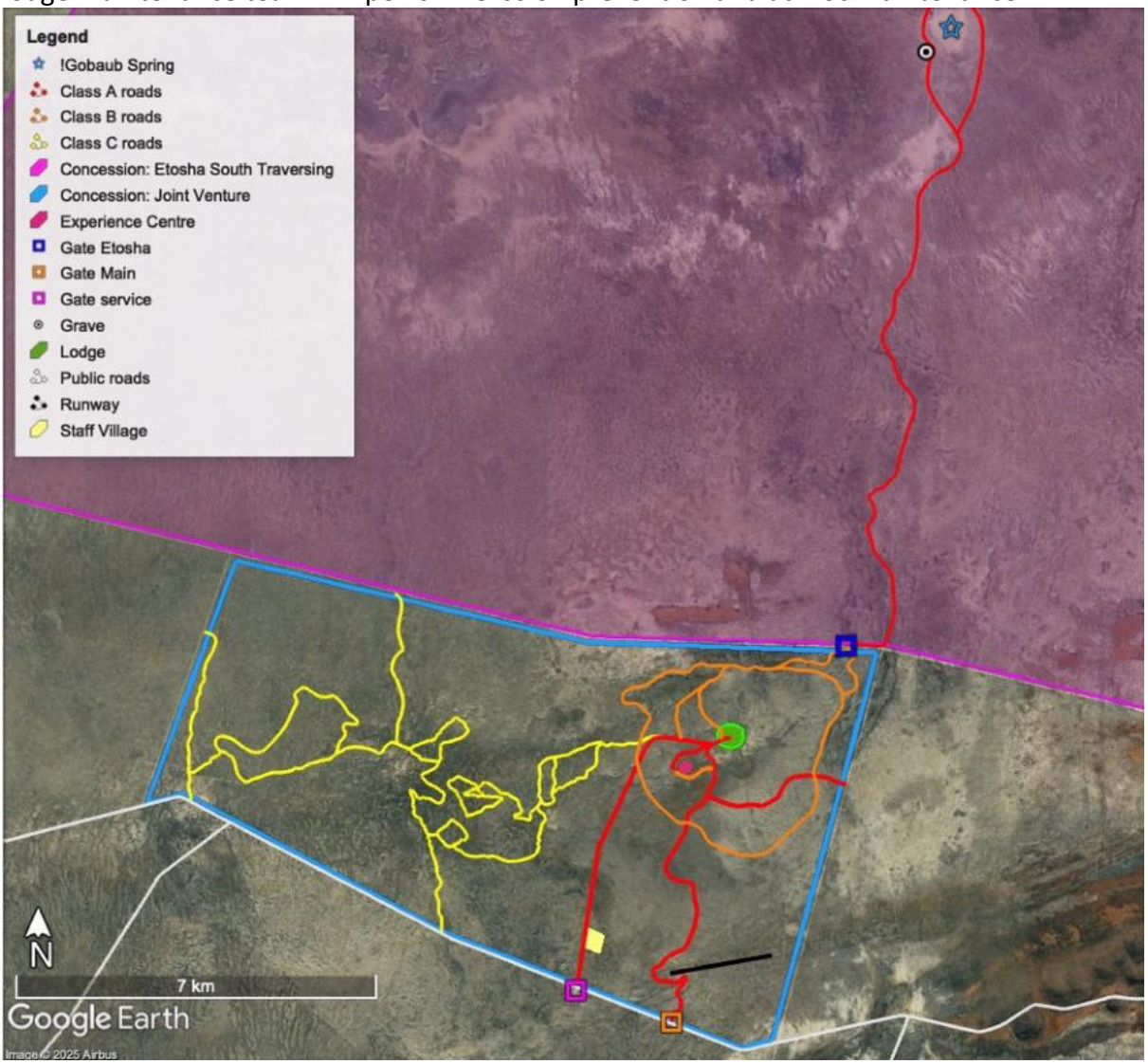


Figure 7. Proposed road network

The following vehicles will be on site:

- 12 game viewing vehicles
- 3 maintenance and goods transfer vehicles
- 2 Land Cruisers for conservation work and anti-poaching patrols
- 1 vehicle for staff transfers

5.6. Landscaping on the JV concession

Existing woody vegetation will remain in place, and landscaping will be limited to indigenous vegetation strategically planted around the lodge and staff area to enhance the natural environment. The senior staff accommodation and the staff village will have small lawns. Newly planted vegetation and lawns will be irrigated using treated effluent water.

A covered vegetable garden and an indigenous nursery will be constructed at the staff village to provide the lodge and staff with fresh produce and to foster environmental stewardship and ecological appreciation within the local community.

The final placement of buildings will be determined on-site to ensure minimal impact on existing trees and rock formations.

5.7. Infrastructure in Etosha National Park

The HCA and COC specify and regulate activities in ENP.

5.7.1. Roads in ENP

The road to !Gobaub (Figure 7) will be upgraded to Category A (Table 5) with an all-weather surface and will be maintained by the proponent. The current track runs through ephemeral pans (a sensitive habitat according to Section 6.4.6) and is badly eroded and water-logged in those locations. The upgrade operation will avoid this sensitive habitat type.

5.7.2. !Gobaub hide

The current game viewing hide will be upgraded so that ENP personnel continue to have access to it for research, game counts, and other operational reasons. A toilet and sewerage system will be installed above ground, and sewage and solid waste will be removed from ENP to the depot at the workshop complex.

5.7.3. Gate infrastructure and services

As required by the COC, the entrance into ENP from Werda will feature 3 offices, 3 en suite bedrooms and a kitchen for officials from ENP, the Namibian Police Force and the Directorate of Veterinary Services. Electricity will be supplied by solar energy, and a BIOROCK wastewater treatment system will manage sewage with a capacity of 3,000 litres, a decentralized, non-electric solution that combines primary, secondary, and tertiary treatment stages. The system uses a septic tank for initial treatment, followed by aerobic digestion and advanced filtration to produce effluent that meets high environmental standards to be discharged into the surrounding vegetation.

6. RECEIVING ENVIRONMENT

6.1. Climate

Data for this section was obtained from Mendelssohn, et al, 2002.

The area experiences mean solar radiation in the range of 6.2 – 6.4 kWh/m²/day, the highest values for Namibia, making PV systems a feasible option for providing all the energy requirements of the proposed project.

The average maximum temperatures during the hottest month, December, are in the range 32- 34°C. The average minimum temperatures during the coldest month, July, are in the range of 4 – 6 °C. Frost may occur on 1 - 5 days per year. The mean annual rainfall in the study area is 450 – 500 mm. The rainy season is from October to April, and the wettest months are January and February. Values for relative humidity range from 10 - 20% in the driest month (September) and 80 – 90 % in the most humid months (February - March).

The high temperatures, low rainfall and low humidity during spring and summer combine with high levels of bush encroachment on the JV concession to pose a significant hazard of bushfires in the dry season. Strong east winds blow for several days a year, resulting in very dry, hot conditions that increase the risk of fire considerably. Fire prevention and management measures on the JV concession and at the lodge buildings are dealt with in the EMP.

6.2. Topography

Sources for this section include Mendelssohn, et al, 2002, Namib Hydrosearch, 2024, Nortjé, 2024, Google Earth Pro, and site visits by the EAP.

The project area consists of flat plains intersected by a transverse ridge of limestone-dolostone (green in Figure 8), quartzite (salmon in Figure 8) and low, isolated dolerite-limestone koppies (pink in Figure 8) such as the outcrops on Werda where the lodge and experience centre (Figure 4) will be built. The overall drainage is to the north and west where the plains are approximately 50 m lower than the plains south of the ridge. The ridges stands around 100 m higher than the plains to its north, creating the potential for erosion in the rainy season.

Overall there is little surface water flow because watercourses and washes from the ridges drain onto the flat plains and water seeps rapidly into the ground. The northern slope, shallow groundwater levels (Section 6.5) and Pellic Vertisol soil form (Section 6.7) combine to create the potential for erosion and structural damage to the soil on the JV concession. Substantial management measures are necessary for constructing a lodge and building roads and tracks in terms of soil and water conservation.

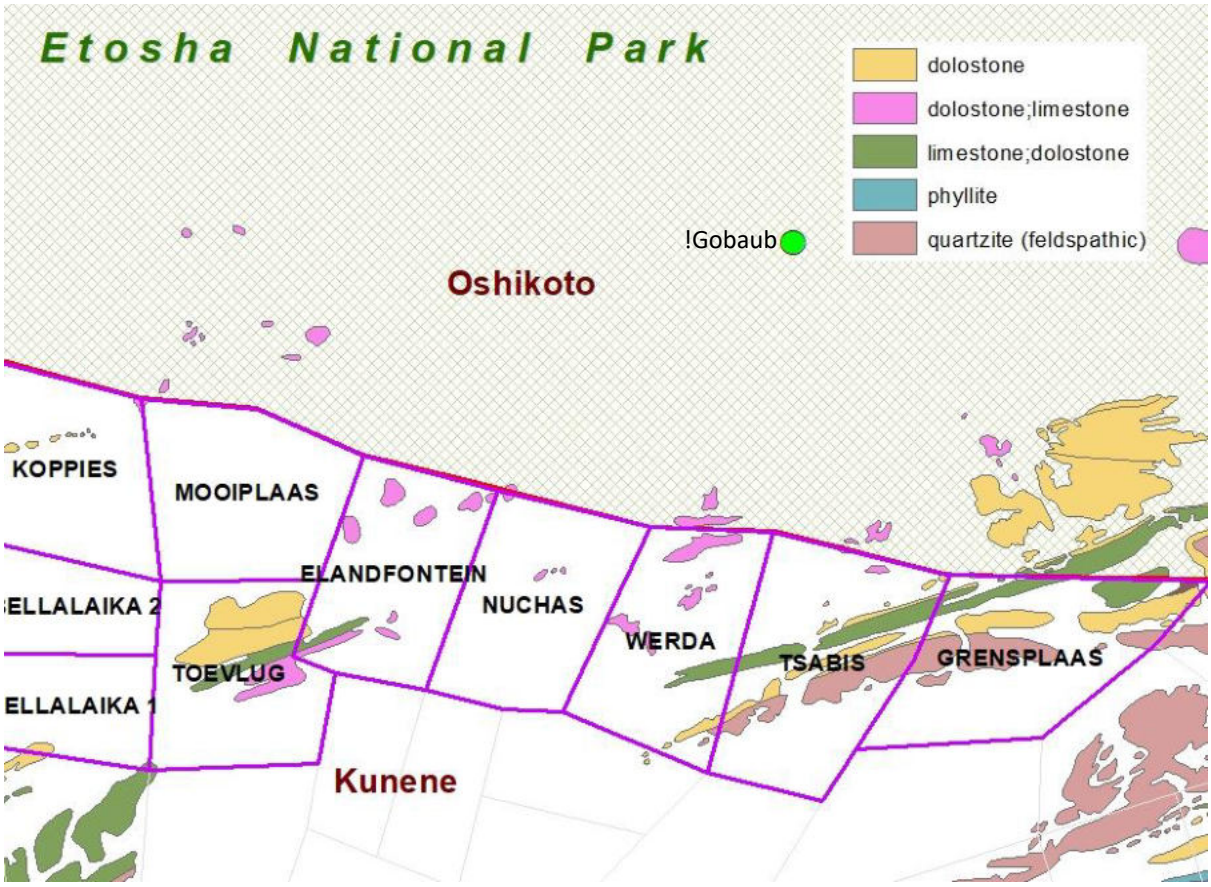


Figure 8. Geological map of the project area and its surroundings (courtesy of Dr Nankela).

6.3. Archaeology and heritage

Data for this section was obtained from two specialist studies that were commissioned for the project. Dr Alma Nankela produced a desktop report on the archaeology and heritage of the affected area in August 2024 (Nankela, 2024) in APPENDIX V A, and Dr Eliot Mowa did a field assessment in November 2024 (Mowa, 2024) in APPENDIX VB.

No previous archaeological or palaeontological research had been done in the project area but Dr Nankela notes that the general heritage finds from other surveys in the general area near ENP indicate a possibility of undocumented heritage features such as rock art, superficial scatter of lithic materials, rock shelters with stratified sediment deposits and burial cairns.

Following the recommendations in the desktop assessment a field assessment was commissioned, and the National Heritage Council (NHC) issued consent certificate number 17/2025/14 (APPENDIX V.C.) on 18/2/2025 with no exclusions or buffer zones. Buffer zones are included in the EMP based on specialist recommendations, but no development will take place near any potential heritage site. The EMP (APPENDIX IV) gives a chance find procedure and stipulates that construction contractors will be made aware of their obligations under the National Heritage Act, 2004 (Act No. 27 of 2004).

During the field assessment (APPENDIX VB) Dr Mowa recorded all sites through field notes, photography and GPS, including location, physical setting, diagnostics features, and estimation of age but without collection of material. No sub-surface archaeological features were recorded but it cannot be assumed that they are not in existence either. The area that

was assessed by Dr Mowa comprises the Farm Werda, proposed staff village, proposed lodge and related infrastructure, and the existing road to !Gobaub spring and the spring itself.

6.3.1. Findings recorded during the heritage field assessment.

1. At the top of the karst hill where the main lodge area will be built, a trig-beacon was found with the number 15 engraved in a concrete pillar ("T" in Figure 10). A buffer zone with a 2-metre radius is recommended.
2. Approximately 600 m southwest of !Gobaub waterhole and 48 m west of the existing road a potential grave was found (Figure 9 and "G" in Figure 10). A 50 m buffer zone around the find is recommended, even though further research is needed to ascertain whether this feature is indeed an ancient grave. Using the cautionary principle, the potential grave is flagged as culturally significant and seeing as the current road runs less than 50 m from the site, a no-go buffer zone with a radius of 50 m will be maintained.

Figure 9. Potential grave near !Gobaub.

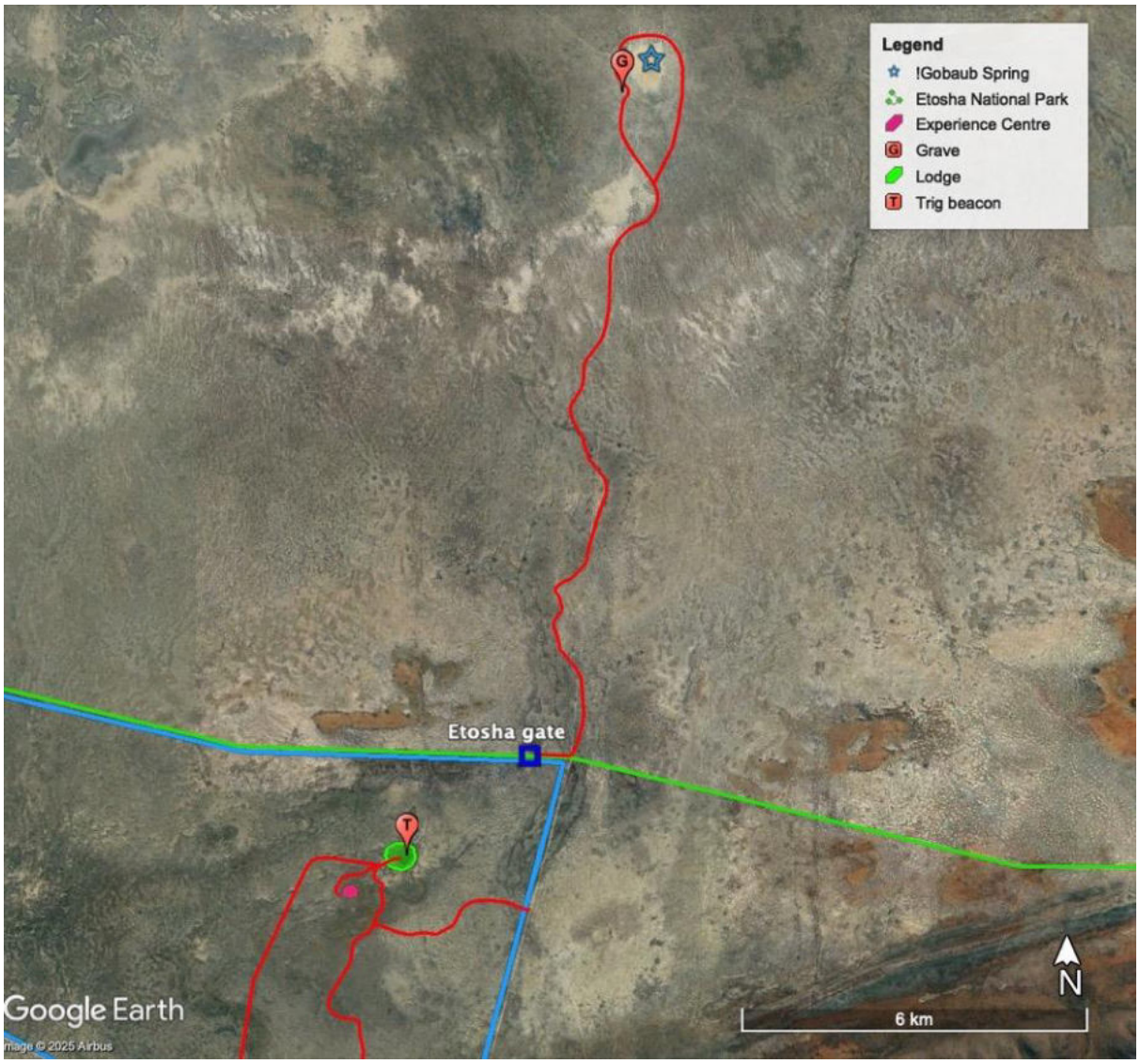


Figure 10. Location of the heritage finds.

6.3.2. Other graves and features of cultural significance

In addition to the potential grave identified by Dr Mowa in Etosha, the proponent will demarcate and fence (if appropriate and possible) any other grave or feature of cultural significance that the community, contractors or visitors identify in future, aligned with the above-mentioned chance find procedure (see APPENDIX IV).

6.4. Biodiversity

Mr Peter Cunningham conducted a biodiversity specialist study in July 2024, consisting of a site visit from 8 to 11 July, a desktop study, and an impact assessment (Cunningham, 2024). His full report is in APPENDIX VI and 7.1.2 includes the biodiversity impact assessment. The EMP (APPENDIX IV) includes all the management measures proposed by Mr Cunningham.

This section presents a summary of Mr Cunningham's study, as well as interpretations and contributions from the author of this Scoping Report, who is also a biodiversity specialist.

It is estimated that 79 species of reptile, 15 amphibian, 115 mammal, 261 bird species (breeding residents), 129 trees and shrubs (>1m in height) and 112 grasses are known or expected to occur in the area (species lists in APPENDIX VI). Although some of these are

endemics, they are widespread in similar habitat types in the region, and it is unlikely that they would be affected significantly by the development.

6.4.1. Reptiles

The most important species are those with some form of conservation status, with the Leopard Tortoise (*Stigmochelys pardalis*), Kalahari Tent Tortoise (*Psammobates oculiferus*), Anchietae's Dwarf Python (*Python anchieta*), Southern African Python (*P. natalensis*), Monitor Lizard (*Varanus albigularis*) and a single species listed as "rare" – i.e., Angola File Snake (*Mehelya vernayi*) – probably the most important species known to occur in the general area. Two relatively recent discoveries of 2 new species in the *Pachydactylus* genus from the Karst Mountains include *Pachydactylus boehmei* and *P. otaviensis* are considered important as they are restricted range species from the general Otavi area.

The high percentage of endemic reptile species (20.3%) underscores the importance of the region for reptiles. The reptile taxon is understudied in Namibia and its importance to the general ecology not well understood, but none of the reptiles are expected to be exclusively associated with the proposed development sites.

6.4.2. Amphibians

Amphibians are not well represented in the north-central parts of Namibia and their presence is expected (currently unknown) in the ephemeral pans and various water points (albeit artificial) throughout the general area. The most important species are the giant bullfrog (*Pyxicephalus adspersus*), consumed for food throughout its range, and the Damaraland pygmy toad (*Poyntonophrynus damaranus*).

6.4.3. Mammals

Several mammal species occurring on the Concession (both JV Concession and in ENP) are classified as critically endangered (black rhino), endangered (elephant), vulnerable (ground pangolin, lion, cheetah, leopard, black-footed cat, Hartmann's mountain zebra, giraffe, black-faced impala) and near threatened (African straw-coloured bat, striped leaf-nosed bat, brown hyena, white rhino, plains zebra) by the IUCN (2024) and some species classified as rare (greater long-fingered bat, lesser woolly bat, Southern African hedgehog, black-footed cat) and vulnerable (African savanna elephant, South African galago, ground pangolin, aardwolf, brown hyena, lion, cheetah, African wildcat, bat-eared fox, Cape fox, black rhino, giraffe, eland, blue wildebeest, black-faced impala), under Namibian legislation. However, not all the species occur permanently in the JV concession, but may move through sporadically, e.g. cheetah, lion and elephant from ENP.

6.4.4. Birds

Bird species of conservation concern are those listed as endangered (violet wood-hoopoe, Ludwig's bustard, white-backed vulture, bateleur, tawny eagle, booted eagle, martial eagle), vulnerable (lappet-faced vulture, white-headed vulture, secretarybird) and near threatened (Rüppell's parrot, kori bustard, Verreaux's eagle, peregrine falcon, marabou stork) in Namibia by Simmons *et al.* (2015), as well as the species classified as critically endangered (white-backed vulture, white-headed vulture), endangered (Ludwig's bustard, lappet-faced vulture, bateleur, martial eagle, secretarybird), vulnerable (tawny eagle) and near threatened (kori bustard) by the IUCN (2024).

6.4.5. Vegetation

Important larger tree and shrub species are viewed as *Cyphostemma juttae* (endemic, protected by Forest Act and Nature Conservation Ordinance), *Manuleopsis dinteri* (endemic), *Erythrina decora* (endemic, protected by Forest Act) and *Pachypodium lealii* (vulnerable [IUCN 2024], near endemic, protected by Forest Act and Nature Conservation Ordinance) from the general area and all the species listed by Loots (2005) as Red Data species from the area, especially species listed as rare (*Decorsea dinteri*, *Eriosema harmsiana*, *Eriospermum citrinum*, *Eriospermum lavranosii*), vulnerable (*Lobelia hereroensis*) and near threatened (*Ceropegia mafekingensis*, *Dintera pterocaulis*).

The most important grass species affected by this project is the endemic *Setaria finita* which is associated with drainage lines, although never very common wherever it occurs, while other species such as various *Aloe*, *Amaryllis*, *Commiphora*, *Euphorbia*, fern and lichen species associated with the Karst hills/outcrops area, as well as species with commercial potential (e.g., *Citrullus lanatus*, *Harpagophytum procumbens*, *Tylosema esculentum*, *Ximenia americana)* are also viewed as important.

The following invasive alien species were observed on the JV Concession, mainly near the main gate.

- *Cereus jamacaru* (queen of the night)
- *Cryptostegia grandiflora* (rubber vine)
- *Euphorbia tirucalli* (rubber Euphorbia)
- *Melia azedarach* (syringa)
- *Prosopis* spp. (mesquite spp.)
- *Datura inoxia* (Downy Thorn apple)

These plants should be pulled out and burnt immediately to prevent further invasion. Monitoring should be conducted annually to ensure that reinfestation does not occur.

6.4.6. Habitat types

The habitat sensitivity map in Figure 11 shows the proposed infrastructure in relation to the sensitivities.

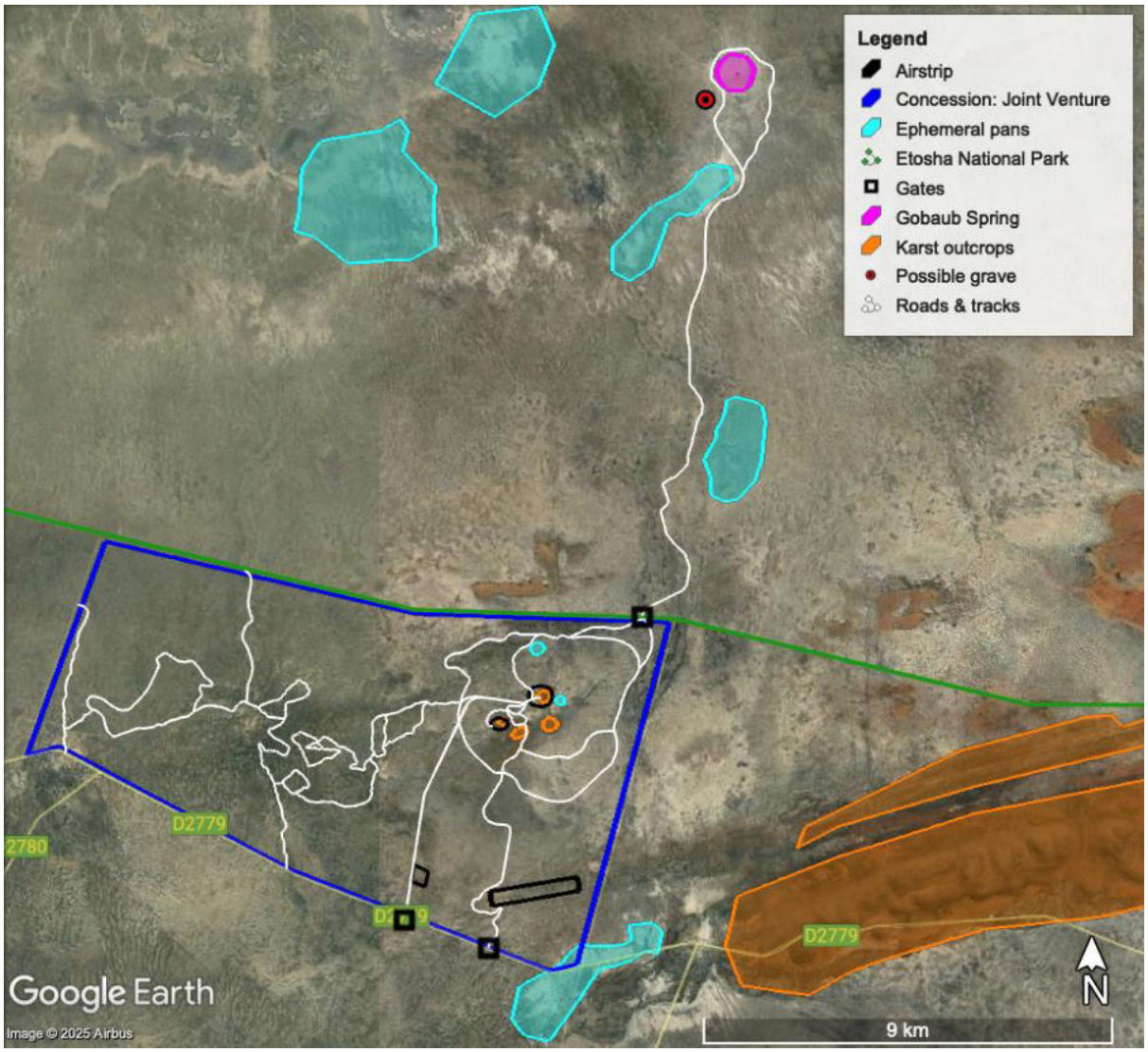


Figure 11. Habitat sensitivity map

!Gobaub spring in ENP is an extremely sensitive habitat and most of it should be a no-go zone. The most sensitive habitats on the JV concession are Karst outcrops. The plains are dominated by *Colophospermum mopane* shrubland and are degraded in places, being heavily impacted by past livestock farming and charcoal harvesting activities.

!Gobaub Spring and Etosha National Park

!Gobaub spring (pink polygon in Figure 11) is classified extremely sensitive due to black swelling clay underneath a layer of limestone rocks, meaning any potential impact would be irreversible and of high severity. The spring has a very high value for biodiversity in the southeast ENP, as evidenced by confidential data from ENP game counts, and the presence of larger mopane trees at !Gobaub than the surrounding areas.

Historical foot traffic caused disturbance around the game viewing hide and these footpaths must be demarcated. Motorised vehicles should stop some distance away at the existing road and the demarcated footpaths may be used while the remainder of the !Gobaub site should be declared a no-go zone.

ENP as a whole is considered a highly sensitive habitat and all the existing Park rules and regulations will be followed at all times.

Karst outcrops

These hills (orange in Figure 11) have a different vegetation composition and structure that support a wider diversity of animals than the surrounding plains. The larger karst formations are considered the most important habitats expected/known to occur in the general area and known to harbour increased biodiversity in an otherwise flat *Colophospermum mopane* dominated area. The lodge main area and rooms will be built on a karst outcrop, but it is an area disturbed by historical farming and the foreseen impacts will be of very low significance provided that mitigation measures are implemented.

Ephemeral pans

Calcrete soils typically have ephemeral pans of varying sizes (Figure 12) as the soils often become waterlogged during the rainy season. The larger pans (light blue in Figure 11) are typically surrounded by larger, often protected, tree species such as *Combretum imberbe*, making habitat important for biodiversity. No development is planned on any ephemeral pan.

Figure 12. Example of an ephemeral pan

6.4.7. Biodiversity discussion

All anthropological activities, including tourism, have potential negative environmental consequences but identifying the at-risk species combined with implementing management recommendations will decrease their significance. The footprint of the development is relatively small and thus may have only localised negative impacts on the ecosystem, flora and vertebrate fauna, and it is considered that any habitat destruction would be limited in scale and intensity.

The two ecologically important habitat types on the Concession are karst hills and ephemeral pans. The lodge and experience centre will be built on two karst hills, but no infrastructure will take place on or near ephemeral pans. The road network was designed to avoid any seasonally inundated areas (Figure 7 and Figure 15).

Except for the karst hills, the proposed development sites do not have any unique habitats and are heavily impacted by past farming activities. It is highly unlikely that the developments will adversely affect the flora and vertebrate fauna on and around the Concession, provided the management measures in the EMP are applied. A detailed impact assessment is given in Chapter 7, management measures are in the EMP (Appendix IV), and a summary of potential impacts follows.

Hai-//Om Lodge

- Disturbed area.
- No significant impact expected from the proposed development, especially if mitigation measures are implemented and development conducted with care, incorporating the indigenous flora into the overall design and layout.

Hai-//Om Guest Experience

- Undisturbed area.
- No significant impact expected from the proposed development, especially if mitigation measures are implemented and development conducted with care, incorporating the indigenous flora into the overall design and layout.

Staff Village

- Disturbed area.
- No significant impact expected from the proposed development, especially if mitigation measures are implemented and development conducted with care, incorporating the indigenous flora into the overall design and layout.

Airstrip

- Disturbed area.
- No significant impact expected from the proposed development provided management measures are followed during construction.

Reserve Entrance Gate

- Disturbed area.
- No significant impact.

ENP Entrance Gate

- Disturbed area.
- No significant impact.

Borrow pits

- Disturbed area.
- No significant impact.

Access Routes

- Disturbed area.
- No significant impact.

Road in ENP to the !Gobaub hide

- Disturbed area (existing road)
- No significant impact if EMP management measures are followed during the upgrading process

!Gobaub hide upgrade

- Somewhat disturbed by foot traffic, but highly sensitive habitat
- Potential for significant impacts during construction, can be mitigated to low significance provided the construction EMP is implemented rigorously.

6.5. Hydrogeology

Namib Hydrosearch conducted a hydrogeological assessment for the project (APPENDIX VII) and this section contains a summary of the report written by Diganta Sarma.

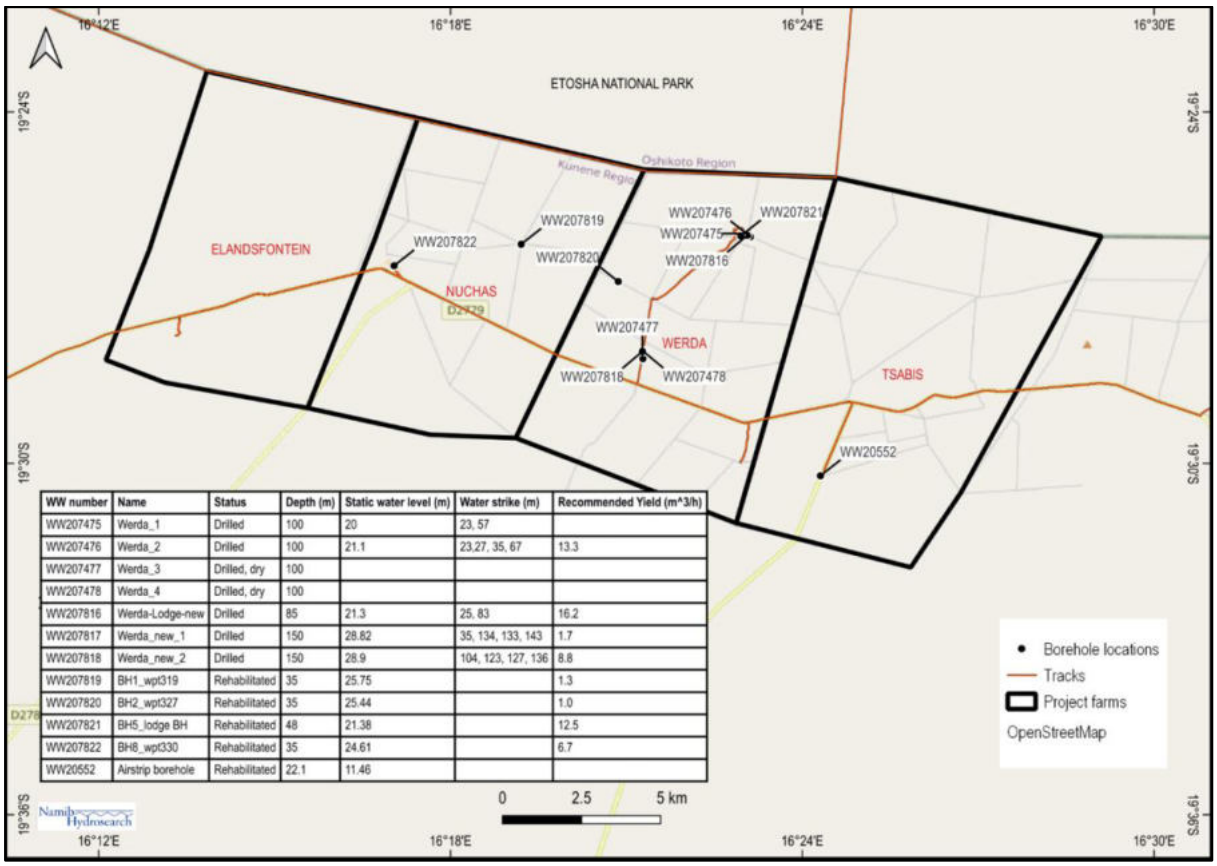
Water will be required for construction of the lodge, airstrip and roads. During operations water will be needed for game watering and human consumption at a projected usage rate of 150,000 l/month (i.e. 5 m^3/day or 1,800 m^3 per year). Five boreholes with adequate yield were drilled on Werda, and five existing boreholes were rehabilitated on Werda and neighbouring Nuchas. Six boreholes on Werda are recommended for production pumping, including new and rehabilitated boreholes (Table 2 and Figure 13). Boreholes identified for the lodge have a combined maximum capacity of 688 m^3/day, while another 250 m^3/day is available for supply to the proposed staff village. Sufficient water is therefore available to meet the estimated water demand.

The most important aquifer in the area is the karstified and fractured carbonate rocks (dolomites and limestone) of the Otavi Group. The dolomite aquifer is unconfined (open to the ground surface) and has a complex network of open cavities that can interact with surface flows making it vulnerable to pollution. The aquifer is also vulnerable to over abstraction as karst aquifers have limited storge. Measures are recommended to ensure that waste, wastewater and hazardous material do not contaminate the aquifer. Groundwater levels, pumping volumes and rainfall should be monitored, and assessments of sustainable yield must be carried out annually to ensure sustainability of supply.

The project area has a very gentle slope to the north. The difference in elevation from south to north from Farm Werda to the edge of Etosha Pan is about 100m over a distance of 70 km (slope 0.2%). This, together with low rainfall, results in poorly developed ephemeral drainages that are often discontinuous. Infiltration rate is likely to be high through unconsolidated sediment cover (Kalahari) over karstified dolomitic rocks of the Otavi Group (Damara Supergroup). To the east and west of the project area Damara Supergroup rocks outcrop (dolomitic and quartzite) that form an east-west ridge and isolated mounds.

On the project farms groundwater is at a depth of 20 to 30 m and is susceptible to pollution from the ground surface. Any wastewater treatment facility and waste disposal should be located at the maximum depth to groundwater such as the southwestern part of Werda. Groundwater flow is from elevated areas in the south towards the Etosha Pan, and discharges to springs and through evapotranspiration.

The area in general may be prone to pluvial flooding after sustained rainfall due to its gentle slope. Particularly, runoff along gravel roads is expected if not properly drained and could result in hazardous road conditions. Proper drainage of tracks and roads will be required. This aspect is further addressed in section 6.7.



WW number	Name	Status	Depth (m)	Static water level (m)	Water strike (m)	Recommended Yield (m^3/h)
WW207475	Werda_1	Drilled	100	20	23, 57	
WW207476	Werda_2	Drilled	100	21.1	23,27, 35, 67	13.3
WW207477	Werda_3	Drilled, dry	100			
WW207478	Werda_4	Drilled, dry	100			
WW207816	Werda-Lodge-new	Drilled	85	21.3	25, 83	16.2
WW207817	Werda_new_1	Drilled	150	28.82	35, 134, 133, 143	1.7
WW207818	Werda_new_2	Drilled	150	28.9	104, 123, 127, 136	8.8
WW207819	BH1_wpt319	Rehabilitated	35	25.75		1.3
WW207820	BH2_wpt327	Rehabilitated	35	25.44		1.0
WW207821	BH5_lodge BH	Rehabilitated	48	21.38		12.5
WW207822	BH8_wpt330	Rehabilitated	35	24.61		6.7
WW20552	Airstrip borehole	Rehabilitated	22.1	11.46		

Figure 13. Borehole locations and summary information (image by Namib Hydrosearch)

Table 2. Boreholes drilled and rehabilitated, and recommendations for pumping (provided by Namib Hydrosearch)

WW number	Licence number	Name	Latitude	Longitude	Farm	Status	Depth (m)	Yield (m³/h)	Static water level (m)	Water strike (m)	Available drawdown (m)	Maximum Recommended yield (m³/h)	Pumping water level (m)	Remarks
WW207475	11821	Werda_1	-19.434580	16.384540	Werda 469	Drilled	100	10	20	23, 57	3	-	-	Borehole partly collpased
WW207476	11821	Werda_2	-19.435470	16.385210	Werda 469	Drilled	100	15	21.1	23,27, 35, 67	1.9	13	24	Shallow water strikes
WW207477	11821	Werda_3	-19.469720	16.354500	Werda 469	Drilled, dry	100	0	-	-	-	-	-	
WW207478	11821	Werda_4	-19.468100	16.354760	Werda 469	Drilled, dry	100	0	-	-	-	-	-	
WW207816	11821	Werda-Lodge-new	-19.435082	16.384312	Werda 469	Drilled	85	100	21.3	25, 83	3.5	16	22	
WW207817	11821	Werda_new_1	-19.470180	16.354630	Werda 469	Drilled	150	15	28.82	35, 134, 133, 143	6	2	32	
WW207818	11821	Werda_new_2	-19.468130	16.354509	Werda 469	Drilled	150	20	28.9	104, 123, 127, 136	75	9	32	
WW207819	11822	BH1_wpt319	-19.437610	16.320070	Nuchas 468	Rehabilitated	35	2	25.75	-	2	1.25	27	yield based on SDT
WW207820	11820	BH2_wpt327	-19.448230	16.347650	Werda 469	Rehabilitated	35	-	25.44	-	2	1	26	yield based on SDT
WW207821	11820	BH5_lodge BH	-19.435260	16.382460	Werda 469	Rehabilitated	48	-	21.38	-	3	13	23	
WW207822	11822	BH8_wpt330	-19.443740	16.283940	Nuchas 468	Rehabilitated	35	-	24.61	-	2	7	26	
WW20552	-	Airstrip borehole	-19.503490	16.405110	Tsabis	Rehabilitated	22.1	2.7	11.46	-	-	-	-	No test puming data

6.5.1. Water quality

All groundwater is of Mg-Ca-bicarbonate type which is characteristic of dolomitic aquifers that are recharged by rainfall. The water sampled from the !Gobaub Spring has higher sodium and chloride levels (Na-Cl type). Higher sodium and chloride relative to calcium and magnesium usually result from evaporative concentration of water over time and precipitation of calcium and magnesium carbonates from the groundwater.

The above parameter values, including elevated magnesium, are indicative of the water quality to be expected naturally and should form the baseline levels for the monitoring of in the future. In the project area the groundwater is expected to remain dominantly of Mg-Ca-bicarbonate type.

Elevated magnesium is present in the groundwater exceeding the Acceptable Standard according to regulations of the Water Resources Management Act of 2013. The high magnesium content is attributed to dissolution of dolomite and occurs naturally. The water, consequently, also has elevated temporary hardness. Water treatment is recommended to reduce magnesium and hardness.

6.6. Socio-economic baseline

A socio-economic desktop study undertaken for this project by Maike Prickett (APPENDIX VIII) was the source for this section (Prickett, 2024).

6.6.1. Land tenure

State owned land constitutes 17% of the total area of Namibia (excluding government owned commercial farms), with communal land 35% of the total area. Land tenure in the project area varies between private and government owned.

The Government of Namibia purchased 7 farms along the southern border of the Etosha National Park: Seringkop, Belallaika (2/3 of farm), Mooiplaas, Toevlug, Nuchas, Koppies (1/3 of farm) and Werda with the purpose to resettle Hai//om communities and address their land dispossession and social and economic marginalisation, providing land to build homes and develop their communities.

6.6.2. Literacy and education

The literacy rate in Namibia's urban areas was 94.1% and in the rural areas 82.7% in 2016. On a regional level, Kunene recorded the lowest literacy rate at 66.5%. Two schools can be found in the project area: the David //Khamuxab Primary School (Grade 1 – 7) with 282 learners; and the Werda Project School (Pre-Primary) with 21 learners. There are also four kindergartens attending to 110 children. The closest secondary school in the area is in Outjo.

6.6.3. Health

The project area has one clinic at Seringkop, and the facilities consist of two containers, of which one is used for its intended purpose, while the other is used for housing by the resident nurse. The clinic is understaffed because there is accommodation for only one nurse instead of the required two nurses. Mobile clinics visit the resettlement farms but with uncertain frequency. Transportation of patients to and from the clinic and the hospital in Outjo is costly, and the coordination of services is often poorly managed.

The Kunene Region has the lowest HIV prevalence in the country with 7.6% (the national average is 17.9%). The prevalence of tuberculosis in the Kunene Region is also the lowest in the country and accounts for 3% (208) of all cases in Namibia.

6.6.4. Domestic violence

Domestic violence is defined as physical, sexual, and/or economic abuse, intimidation, harassment/stalking, trespassing and emotional, verbal and psychological abuse. It is often an outcome of social challenges such as unemployment, poverty, alcohol abuse, and changing family and community norms.

Victims of domestic violence are mainly women (86%), and 93% of abusers are male. At a national level, 31.5% of women between the ages of 15 and 49 have experienced physical violence since the age of 15; in the Kunene Region this rate is 36.0%. In 2013, 24.8% of women in the Kunene Region were victims of domestic violence. Domestic violence against children can include excessive discipline, neglect, sexual abuse, cultural and traditional practices, exposure to domestic violence between family members, and encouraging alcohol abuse.

6.6.5. Vulnerable groups

A lack of adequate economic opportunity is a key cause of poverty. A contributing factor is a high level of inequality: low levels of formal schooling, no tertiary education, lack of skills development, unable to compete in labour market. Poverty is ongoing, cyclical, and intergenerational. Poor households can rarely afford education, health care or proper housing. A risk of poverty is that it increases the susceptibility of children to violence and exploitation such as child labour, sex work and child trafficking.

6.6.6. Marginalised communities

The San people, of which the Hai//om communities are a part, are the most affected Namibian ethnic group in terms of landlessness and land dispossession. They face extreme marginalisation and have lower overall indicators (including economic development, education and political representation) than any other ethnic group in Namibia.

6.6.7. Current situation in project area

Results of a preliminary census of the 7 resettlement farms done in 2024 are given in Table 3.

Table 3. Preliminary census results

FARM	HOUSEHOLDS	PEOPLE
Werda No. 469	61	271
Mooiplaas Np. 462	10	29
Toevlug No. 461	52	209
Belallaika No. 458	74	309
Seringkop No. 454 & Koppies No.457	103	478
Nuchas No. 468	25	126
TOTAL	**325**	**1422**

These farm residents are members of the Hai//om Association, whose committee comprises 10 farm representatives, 2 non-voting members of the Traditional Authority and 1 member each of MEFT, the Ministry of Gender Equality, Poverty Eradication and Social Welfare, and the Regional Council.

Income streams on the farms include:

- Pensions: approx. 165 pensioners, N$ 1,600 each
- Harambe mothers: approx. 38, N$ 350 each
- Small businesses/shops
- Sale of crafts
- Casual/contract work
- Child grants
- Sale of vegetables
- Sale of livestock (emergencies)

Table 4 gives the results of a needs assessment undertaken by Mr Dave Cole (see Section 3.1.2 “Community needs assessment”). The purpose of the needs assessment was to identify support actions that could potentially benefit the wider community on the Hai//om farms.

Table 4. Challenges experienced by the community (2024)

ASPECT	ISSUES
Water provision	Non-functional boreholes, insufficient yield
Transport	Expensive
Employment and income generation	High levels of unemployment. Only 64 community members are employed at wages ranging N$ 600 – 6,000
Additional land	Large portions of the farms are unsuitable for livestock farming due to low carrying capacity, bush encroachment and the presence of lions, hyaenas and leopards.
Education	4 kindergartens for 110 children, no dedicated buildings with suitable facilities or educational resources, food shortfalls due to irregular delivery. 1 school at Seringkop.
Electricity	No source of energy
Health	Clinic at Seringkop: understaffed, inadequate staff accommodation, unreliable ambulance service
Hostel support	154 learners reside in hostel, and government provides food for 120
Road repair	Lack of access, especially in rainy season

6.7. Soil and roads

Dr Gerhardus Nortjé conducted an on-site soil survey and designed a road network for operational and game drive purposes. His full report may be found in APPENDIX IX.

The roads shown in Figure 7 are classified as categories A, B, and C, specifically for the Concession and its conservation land use. The classification in Table 5 explains the role of each type of road in relation to conservation efforts, habitat preservation and visitor access. A glossary of terms used in the soil report is given in Section 6.7.1 at the end of the soil and roads section.

The road from the lodge to !Gobaub spring will be upgraded to category A.

Table 5. Road categories

(Refer to section 6.7.1 for definitions of terms and abbreviations used)

Road Category				
	A	**B**	**C**	**D**
Description	Surfaced link road between other areas in the park or the access road to the game lodge	All weather gravel (calcrete) roads, access road to game lodge	Lightly trafficked all weather two-track roads, ring roads	Lightly trafficked two-track roads, link roads
Importance	Very important	Important	Less important	Less important
Service level	High level of service	high level of service	Moderate level of service	Moderate to low level of service
Typical Pavement Characteristics				
		Soil risk		
	Very low	**Low**	**Medium**	**High**
Approximate design reliability (%) *	95	90	70	50
Total equivalent traffic loading (E80/lane) *	0,3-1,0 x 10^6 over 20 years	0.1-0,3 x 10^6 over 20 years	0,3-1,0 x 10^4 depending on design strategy	0,3-1,0 x 104 depending on the design strategy
Typical pavement class*	ES1 – ES6	ES1 – ES5	ES1 – ES2	ES1 – ES2
Daily traffic (vehicles/day/track) *	200 - 400	<200	< 50	< 20

Figure 14 shows a map of the soils in the study area and Figure 15 a soil sensitivity map that indicates the relative sensitivities of the soils for the specific land uses in the Concession. While a soil map provides a broad overview of soil types/forms and characteristics, a soil sensitivity map emphasises the vulnerability of those soils to various land uses. The characteristics, sensitivities, resilience and land use options of the soils in the study area emphasise the importance of customised management practices to protect the soils and optimise their potential for conservation applications.

All the proposed infrastructure will be located on Pellic Vertisols, a soil type with a high sensitivity rating (Figure 15 and Table 6), making it crucial to follow the customised road management plan provided in the EMP (APPENDIX IV).

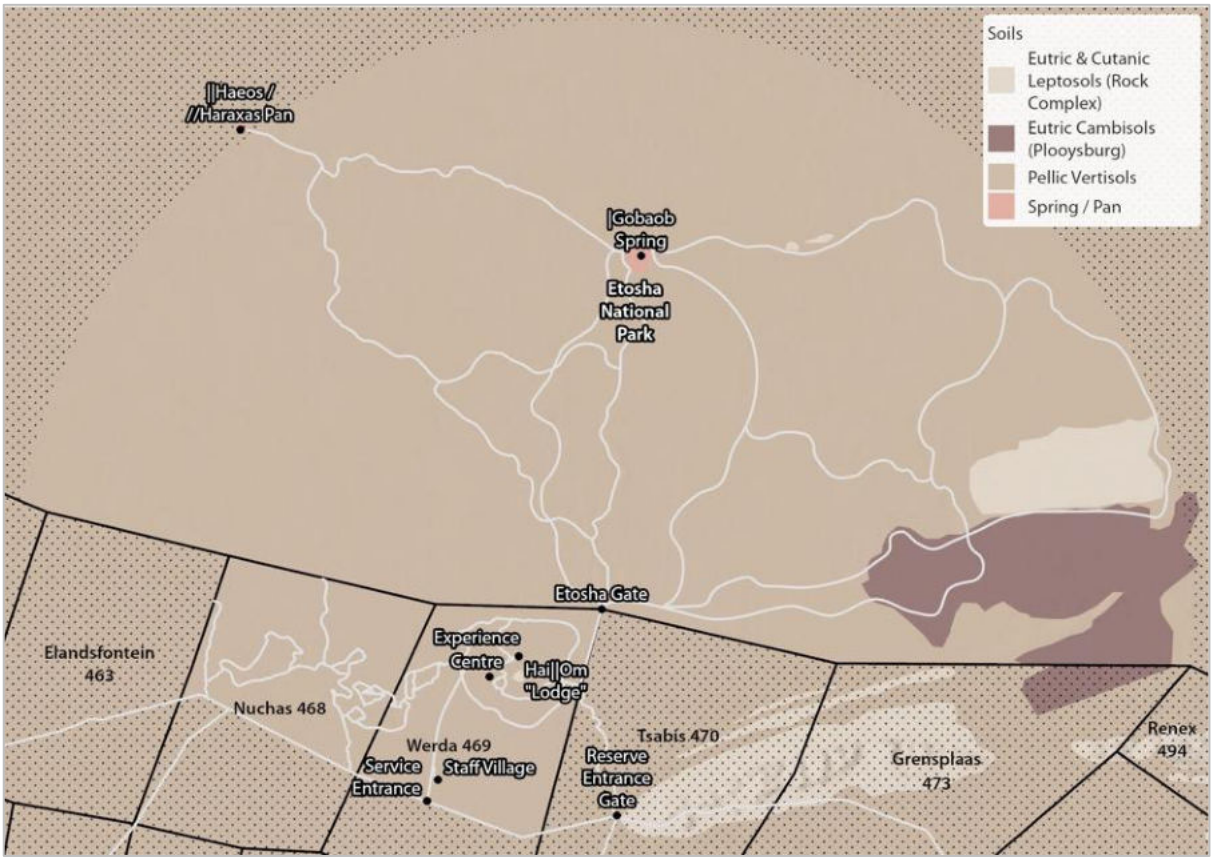


Figure 14. Map of the soil forms on the Concession (image: Dr Nortjé)

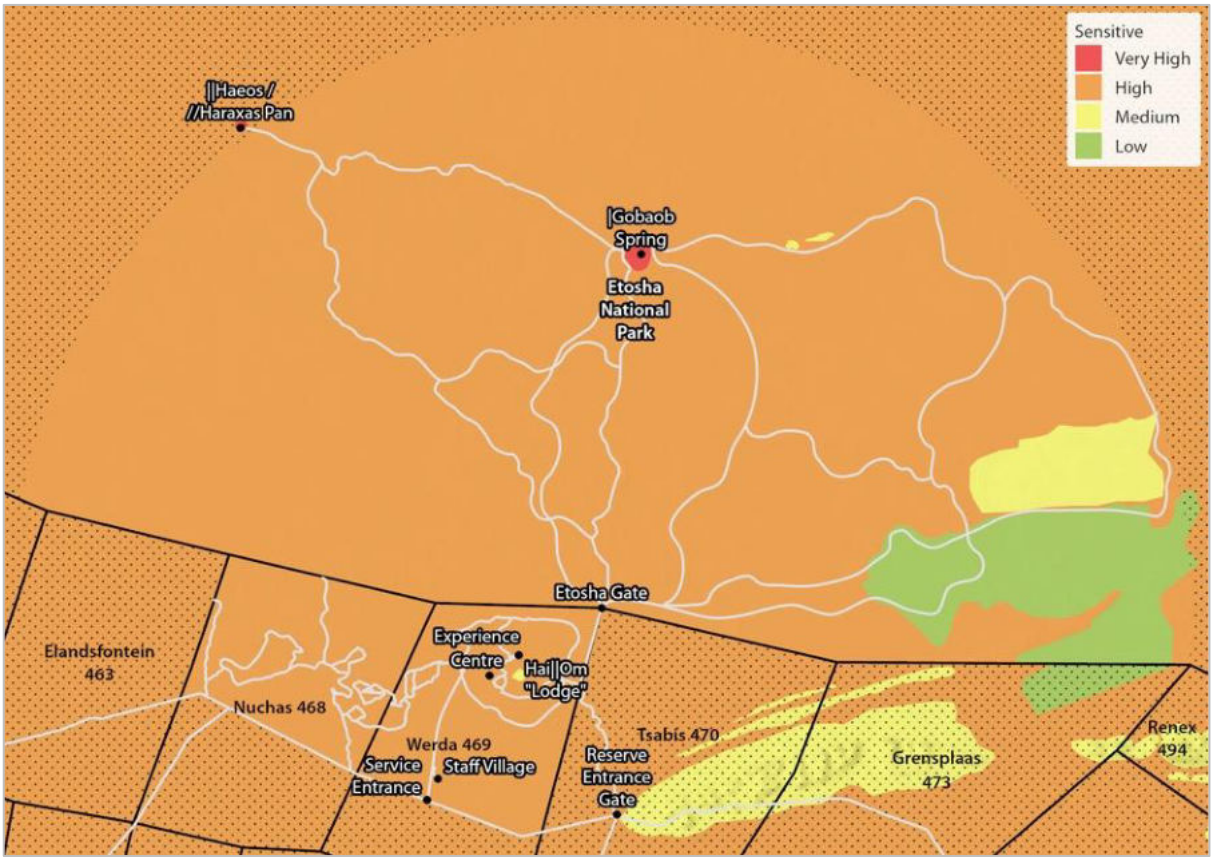


Figure 15. Soil sensitivity map (image: Dr Nortjé)

Table 6. Soil form characteristics, sensitivities and land uses on the Concession

Soil Form	Terrain Morphological Unit	Properties and Sensitivities	Land Suitability Class (defined by the International Union of Soil Scientists)
Eutric & Cutanic Leptosols (Mispah / Glenrosa rock complex)	Crest-scarp	Well-drained, shallow soils are often found in mountainous or hilly terrain. They typically have low base saturation and are poor in nutrients, making them unfarmed. The texture can range from sandy to clayey, but they generally have a high proportion of coarse fragments. **Sensitive to erosion due to their shallow depth and easily impacted by overgrazing and deforestation. Recovery from degradation is limited by its shallow depth and poor nutrient retention capabilities.**	**Class C (conservation)** Sustainable practices are essential to prevent erosion. Best suited for conservation or ecological functions.
Eutric cambisols (Plooysburg)	Mid-slope to valley bottom	Characterised by their moderately deep, fertile layers, rich in organic matter and nutrients. They typically exhibit a well-structured profile with good moisture retention and drainage capabilities. Although these soils are **generally resilient**, they can be sensitive to compaction, salinisation and nutrient depletion if subjected to intensive agriculture without proper management. **Can recover well** from disturbances due to their robust structure and nutrient-rich profile.	**Class S1 (highly suitable)** **This class includes land that is very well suited for a particular use, with few limitations.** The soil has favourable characteristics such as good drainage, fertility and depth.
Pellic Vertisols (Arcadia) (Nortjé, 2024)	Valley bottom-foot slopes	Clay-rich soils are known for their high swelling and shrinking properties. Deep profiles, typically rich in calcium and magnesium, leading to good fertility levels. **Sensitive** to waterlogging and can become severely compacted during dry seasons. Poor management can lead to structural degradation, making them prone to cracking and erosion. Vertisols have unique resilience due to their ability to retain moisture and nutrients. However, their **management requires careful attention to moisture levels and structural integrity** to prevent degradation.	**Class S3 (marginally suitable)** This class comprises land that has significant limitations, which makes it only marginally suitable for the intended use. These limitations may require substantial management efforts and the results may be inconsistent.
Springs/pans (Solonchak / Solonetz)	Foot slopes	These soils are saline soils, often found in arid and semi-arid regions. They typically have a high salt content (including sodium), which can limit their agricultural potential. Their profile may include horizons enriched with soluble salts. **Highly sensitive** to changes in water management practices and can become more saline with improper practices. They are also vulnerable to erosion and degradation from land use pressures. **Low or no resilience to disturbances.** Once degraded, recovery is challenging and often requires significant management interventions to reduce salinity.	**Class N (not suitable)** Land that is not suitable for the specified use due to severe limitations. Due to their saline nature, solonchaks are typically unsuitable for most land uses. This could include physical barriers, such as steep slopes or soil conditions that make agriculture impractical.

A soil conservation strategy of no off-road driving is recommended to minimise erosion, runoff and habitat disturbance. By implementing targeted measures such as effective drainage systems, vegetative buffers and restricted access during sensitive periods (closing Classes B and C roads during the wet season), the possible adverse effects of road use on soil quality and overall ecological balance can be mitigated.

Ongoing monitoring, restoration, and guest and guide education during the operational phase are essential and will ensure responsible access while protecting vital soil resources and biodiversity.

6.7.1. Glossary of terms

Approximate design reliability

The probability that the pavement will perform without failure or significant distress (e.g., cracking, rutting or structural deterioration) over a specified period, typically 20 to 40 years, under the expected traffic load and environmental conditions. A higher percentage means a more confident prediction that the pavement will function as intended throughout its design life.

Stabilising agent

A material or chemical compound added to the existing soil or gravel to improve its bearing capacity by enhancing the strength, durability and overall performance.

Types of stabilising agents

- Cement: often used to increase the strength of gravel or soil by binding the particles together, it is commonly applied to improve road durability and prevent erosion.
- Lime: used to stabilise clayey soils by altering their structure, reducing plasticity and increasing strength.
- Bituminous products (asphalt emulsion or cutback asphalt): bind and stabilise the gravel surface and provides water resistance.
- Polymer-based stabilisers: liquid or powder products designed to bind soil particles and improve compaction, making them more resistant to erosion and wear (e.g. polyacrylamide or PAM).
- Fly ash: a by-product of coal combustion that stabilises soils, particularly clayey soils, it reacts with the soil to form stronger bonds.

Total equivalent traffic loading

The heavier a vehicle, the more stress it exerts on road pavements. E80 expresses the cumulative effect of all vehicle loads in terms of how many times an 80 kN axle load would be applied to the pavement, e.g. a truck with a heavier axle load than 80 kN will contribute more to the equivalent loading than a car with a lighter axle load.

Typical pavement class

ES means “Equivalent Standard Axle load. The higher the number, the greater the expected load the pavement is designed to handle.
ES1: low traffic loading category, where the pavement is designed for light traffic, such as local roads with minimal truck traffic.

ES1 – ES6: a range of pavement classes that cover roads with light to very heavy traffic loads, including those with moderate to high truck traffic and possibly major highways or arterial roads.
ES1 – ES5: roads with moderate to heavy traffic, but not as high as ES6.
ES1 – ES2: roads with light to moderate traffic, suitable for local roads or residential streets, which see lighter loads and less frequent truck traffic.

Daily traffic

The average number of vehicles using a single lane or track of a road each day, measured over a period of time and averaged to account for daily and seasonal fluctuations in traffic volume.

7. IMPACT ASSESSMENT

The project location on the border of ENP and within the Hai//om community makes it a sensitive project with the potential to impact the environment and socio-economic aspects, both positively and negatively. The specialist studies commissioned for this development, and consultation with I&APs during the scoping and assessment process were used to identify aspects and potential impacts.

The biodiversity, hydrogeological, soil and heritage specialists assessed the impacts of potential higher significance, identified by the EAP during the initial (i.e. Screening) phase of the EIA. Impacts of lower significance, either because of their low severity, small extent, short duration, or the disturbed nature of the receiving environment were identified and assessed by the EAP. Socio-economic impacts were identified using the COC, and the COC also regulates the benefits payable to the community.

Construction and operational activities as described in the project description, Chapter 5, are potential sources of risk. The discussion of the receiving environment in Chapter 6 must be read with the assessment of the identified potential impacts. Management/mitigation measures for all the identified potential impacts are given in the EMP (APPENDIX IV).

Impact assessment framework

The criteria that were used to assess the potential impacts, and the method of determining the significance of the impacts are outlined in Table 7, Table 8 and Table 9, for both unmitigated and mitigated scenarios. The method used here complies with provisions of the EMA and its regulations.

Table 7 provides rankings and definitions for the severity, duration and extent of an impact. These three criteria are combined to determine consequence (Table 8), and finally significance is determined by consequence x the probability that an impact will occur (Table 9). Significance indicates the overall rating of an impact and is explained in Table 10.

Table 7. Definition of criteria

CRITERIA	RANK	DESCRIPTION
SEVERITY	VH	Severe deterioration or change. May result in death, illness or injury. Thresholds of concern are continually exceeded. Requires considerable intervention. Irreplaceable loss of resources. Widespread community action and legal action can be expected.
	H	Definite deterioration or change. May occasionally result in illness or injury. Thresholds of concern are occasionally exceeded. Definitely requires intervention. Noticeable to irreplaceable loss of resources. Complaints can be expected.
	L	Minor deterioration or nuisance. Minor consequences. Thresholds of concern are rarely exceeded. Sporadic intervention. Limited loss of resources. Sporadic complaints.
	VL	Negligible deterioration or change. Very minor consequences. Thresholds of concern are never exceeded. No intervention required. No complaints expected.
	VL+	Minor change or improvement. Almost no benefits. Few people derive benefits.
	L+	Moderate change or improvement. Real but not substantial benefits. Small number of people derive benefits.
	H+	Prominent change or improvement. Real and substantial benefits. Will be better than current conditions. Many people derive benefits. Support from local community.
	VH+	Substantial, large-scale change or improvement. Considerable and widespread benefit. Will be much better than the current conditions. Favourable publicity and/or widespread support expected.
DURATION	VH	Permanent. Irreversible.
	H	Long term. After project lifetime. Partly reversible with human intervention.
	L	Medium term. Within lifetime of project. Reversible over time and/or with human intervention.
	VL	Intermittent or short-term. Quickly reversible without human intervention.
EXTENT	VH	National or international implications.
	H	Widespread. Far beyond the site and its region.
	L	Within a defined region, e.g. municipality, district, Central Namib, MNMN etc.
	VL	Within the site and its immediate surroundings.

Table 8. Determining consequence

CONSEQUENCE					
SEVERITY = VL					
DURATION	VH	Low	Low	High	High
	H	Low	Low	Low	Low
	L	Very Low	Very Low	Very Low	Low
	VL	Very Low	Very Low	Very Low	Low
SEVERITY = L					
DURATION	VH	Low	High	High	High
	H	Low	Low	High	High
	L	Low	Low	Low	Low
	VL	Very Low	Low	Low	Low
SEVERITY = H					
DURATION	VH	High	High	Very High	Very High
	H	High	High	High	Very High
	L	Low?	Low	High	High
	VL	Low	Low	High	High
SEVERITY = VH					
DURATION	VH	Very High	Very High	Very High	Very High
	H	High	High	Very High	Very High
	L	High	High	High	Very high
	VL	Low	High	High	Very high
		Very Low	Low	High	Very High
		EXTENT			

Table 9. Determining significance

SIGNIFICANCE						
PROBABILITY that impact will occur	Definitely, Continuous	VH	Low	High	High	Very High
	Probably, likely	H	Low	Low	High	Very High
	Possibly	L	Very Low	Low	High	High
	Seldom, unlikely	VL	Very Low	Very Low	Low	High
			VL	L	H	VH
			CONSEQUENCE			

Table 10. Explanation of significance

EXPLANATION OF SIGNIFICANCE		
Significance		Influence on decision
Very High -	Very High +	Key factor in decision-making. Negative impact represents a potential fatal flaw regardless of possible mitigation.
High -	High +	Important impacts that will have an influence on decision-making. Substantial mitigation is required for negative impacts.
Medium -	Medium +	Important impacts that may affect decision-making. Mitigation is required for negative impacts.
Low -	Low +	Unlikely to affect the decision. Limited mitigation is required for negative impacts.
Very Low -	Very Low +	No influence on the decision. No mitigation is required for negative impacts.
Insignificant		No consequence. No consideration required.

7.1. Description of impacts

7.1.1. Archaeology impacts

Graves are the only significant archaeological resource identified during the specialist study, and buffer zones as recommended by the NHC's Heritage Consent will be maintained. In addition, specific cemeteries or grave sites to be identified by the community will be fenced (Section 6.3.2 Other graves).

7.1.2. Biodiversity impacts

Vertebrate fauna, especially protected species

Land clearing activities during construction by mechanical methods would result in numerous animals of various taxa being eradicated and/or dispersed. Vertebrate fauna (especially sedentary, slow moving and ground nesting species; cavity dwellers such as bats; reptiles; various avifauna using vegetation for perching/roosting/breeding, etc.) associated with the area, especially the karst hills/ridges/outcrops and ephemeral pans would be killed and/or displaced.

The private access in ENP and game viewing activities at !Gobaub spring could cause disturbance of animals and interruption of their daily movements and foraging activities during the operational phase. Black Rhino is of particular concern, seeing as the spring is an important water source for them. In the dry season the nearest waterhole is more than 20 km away and if they are frightened while drinking or on their way to drink, they will become stressed, potentially causing an increase in mortality. This impact can be mitigated by low volume of traffic and frequency of vehicle movement, combined with trained guides adhering to a game drive protocol approved by the Directorate of Scientific Services: National Rhino Coordinator of MEFT.

Private game reserves that are black rhino custodians, such as Ongava and Etosha Heights, have experienced that black rhinos become habituated to vehicles if interaction is done in a sensitive manner.

Vegetation, especially protected species

The land clearing activities by mechanical methods, at the various development areas would result in numerous species, being eradicated and/or dispersed. Flora (e.g., unique species) associated with the area, especially the karst hills/ridges/outcrops and ephemeral pans would be destroyed.

Sensitive habitats

Land clearing activities by mechanical methods at the various development sites would result in some sensitive habitats (Figure 11) being destroyed and/or detrimentally affected. Vertebrate fauna and flora associated with these sensitive habitats would be killed and/or displaced.

At !Gobaub spring the potential source of risk is heavy vehicles transporting materials during the construction phase, but this can be mitigated by declaring the area a no-go zone, stopping trucks at the access road (red in Figure 7), and using only existing, demarcated footpaths to the hide.

Soil erosion affects biodiversity

The land clearing activities by mechanical methods, at the various development areas would result in erosion issues. Tracks in erodible soil areas would result in dust/wind pollution.

Invasion and spread of invasive alien plant species

Soil disturbances by mechanical methods, at the various development areas would favour invasive alien plant species becoming established. Invasive alien plant species, already present in the area, would flourish in the disturbed areas and could also inadvertently be transported into the area as seed on the various vehicles accessing the development sites.

7.1.3. Hydrological impacts

The overall hydrogeological conditions are favourable for the implementation of the project. The following potential impacts are identified and along with mitigation measures.

Borrow pits

Borrow pits for construction material can be sourced from calcrete horizons in the Kalahari sediments and dolomite units close to the construction sites. Depth of excavation should be limited to above the water table and guided by the depth to groundwater map (Figure 16).

Disposal of waste or contaminants in the borrow pit poses a direct threat to groundwater. Accumulation of rainwater and runoff water in the pits is expected and could infiltrate underground, or overflow and potentially contaminate surface flow. The pits and surroundings therefore should not be used for disposal of any waste during construction or operation phase of the project.

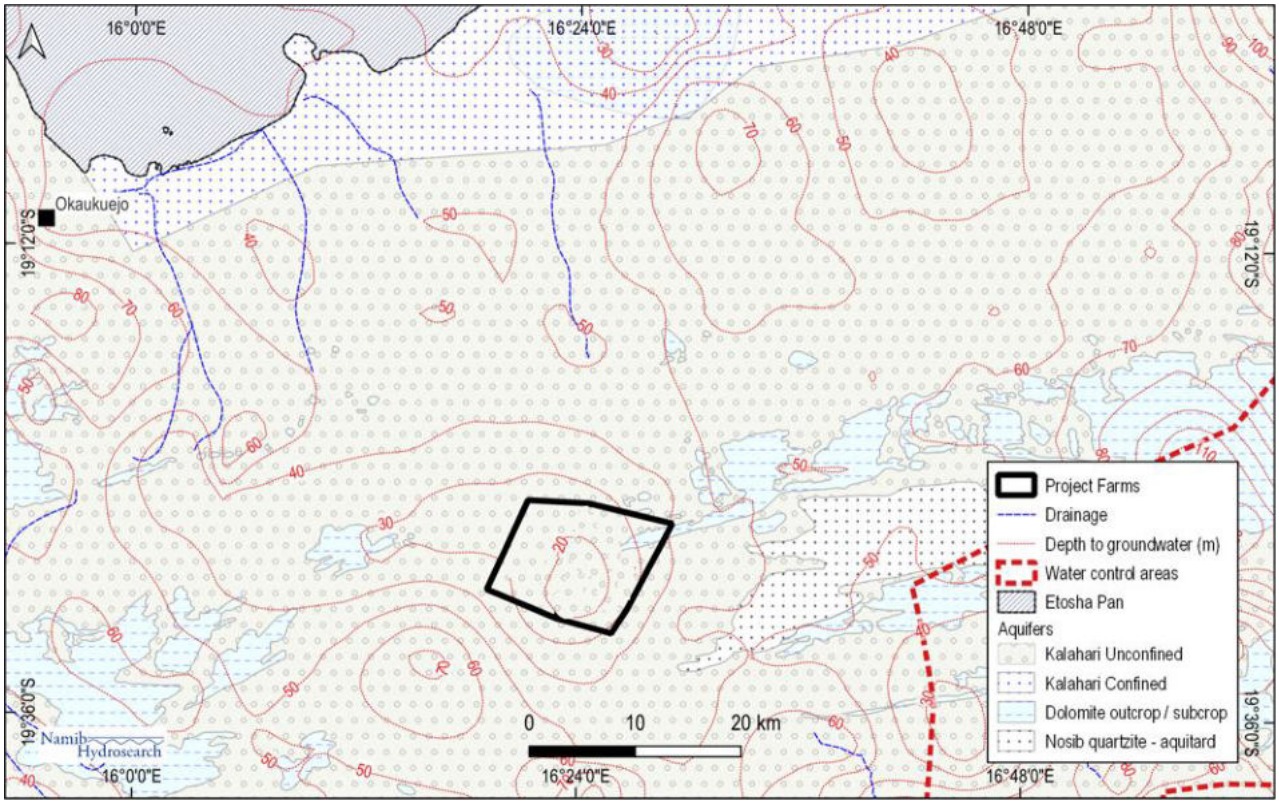


Figure 16. Aquifers and depth to groundwater.

Wastewater disposal and risks to the receiving environment

The proposed lodge, staff village and a small volume at the airstrip are the sites where wastewater will be generated on Werda. Water demand including domestic use, swimming pools and gardening is estimated at 150 m^3/day. The wastewater generated cannot be discharged to the natural environment without ensuring that the quality meets the effluent quality standards specified by the WRMA (2013), Regulation 67.

The Special Standard is applicable when discharging to a natural drainage. Wastewater treated to General Standard can be discharged to an evaporation pond or, preferably, reused for landscape irrigation of areas where there is limited risk of exposure to humans. Reuse of wastewater requires treatment of wastewater to an appropriate standard adhering to WRMA (2013) Regulations 5, 68(2) and 69. For instance, for landscape irrigation, tertiary level treatment to Special Standards is necessary when used close to swimming pools and recreation areas that are directly used by people. Wastewater treated to General Standards may be used in areas where limited contact to people is expected while ensuring that irrigation water drains and dries effectively.

Use for agriculture is similarly restricted, tertiary level treatment of wastewater to Special Standards is required for use for cultivation of fruits and vegetables that are consumed raw and secondary level treatment to General Standards for use crops not consumed raw. Furthermore, an *application for a wastewater treatment, effluent discharge and reuse licence* (Form WA-07) will have to be submitted to the Water Environment Division, Department of Water Affairs and Forestry.

Sustainability of water supply and impact on local water supply

Abstraction rates projections made for newly drilled and rehabilitated boreholes are based on assumptions that aquifer conditions including the average rate of recharge (rainfall) continues

into the future. Rainfall figures show a lower-than-average rainfall record since exceptional rainfall in the 2010-11 season. It is uncertain if the trend will reverse in the future. It is therefore essential to adhere to the recommended yield, and to monitor groundwater level and abstraction volumes over time.

Reassessment of pumping rates is recommended initially on a yearly basis on the basis of the monitoring data. Dolomite aquifers have highly transmissive karst features but low storage coefficient and is vulnerable to over abstraction. Boreholes with deeper water strikes are more resilient to drought conditions such as WW207817, WW207818 and WW207816 (Figure 17).

Water level and abstraction monitoring points

Monitoring of groundwater levels and pumping volumes is recommended for all production boreholes (Figure 17). In addition, WW207820 is recommended for monitoring purpose only (not production). Water levels can be measured by using pressure transducers or manually every week after overnight recovery from pumping.

Water quality

The following water quality risks are identified.

1. Magnesium in drinking water in moderate levels has minimal health hazard and can have health benefits. Known potential risks are digestive issues such as diarrhoea (when sulphate content is also high), bitter or metallic taste of water, and hypermagnesemia in individuals with impaired renal function. The World Health Organisation does not set a specific guideline for magnesium concentration in drinking water, however concentrations above 150 mg/l could be considered harmful.
2. High temporary hardness of the water due to presence of calcium, magnesium and bicarbonate can cause scaling in reticulation pipes and water heaters and necessitates use of a water softening treatment.
3. Pollution can occur due to irrigation return, wastewater leakage, leakage or spillage of hazardous material including fuels. Bulk fuel and hazardous material should be stored in spillage bunding appropriate for the size of tanks.

Water quality monitoring

The following recommendations are made for the water quality monitoring.

1. Microbiological content of production boreholes (WW207821, WW207816, WW207818 and WWWW207817, Figure 17) are to be analysed twice a year, in the rainy (December – January) and dry seasons (June -July).
2. Sampling and analyses of water chemistry are to be done from the supply boreholes (WW207821, WW207816, WW207818 and WWWW207817, Figure 17) every six months in the rainy and dry season. The parameters will include major and minor ions, pH, electrical conductivity, temperature, and alkalinity as carried out in the project.

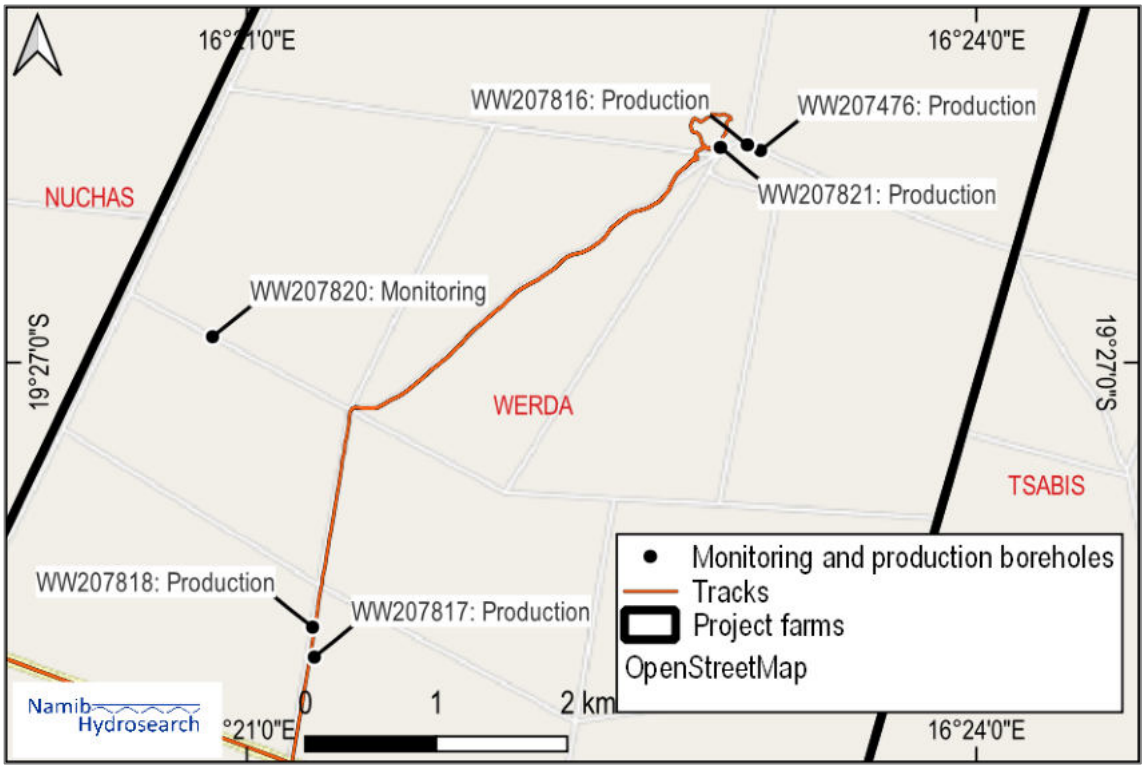


Figure 17. Recommended water monitoring points

Flood risk assessment

Flood risk through inundation of the Etosha Pan is not considered likely. During the rainy season pluvial floods may occur as the area has low to very slope and drainage are not well developed. The primary risk lies in flooding of the gravel access roads and will require adequate drainage of the roads to be developed to avoid flow and ponding. Reference is made to Nortjé, GP (2024), road and soil report of this project, for a full assessment of flooding risks and mitigation (Section 7.1.5 Soil impacts).

7.1.4. Socio-economic impacts

Potential risks

An influx of construction workers with disposable income may lead to an increase in crime, violence, domestic violence and sex work.

In other sensitive communities where financial literacy is low, employment and the sudden availability of money have resulted in alcoholism and drug dependence, financial dependence and criminality, often into the next generation. People incur debt on the strength of their salary, become substance dependent, eventually lose their job, and turn to theft to support their dependence. Usually an entire community is affected by this cycle of dependence and crime.

A social protection programme with management measures including financial training of staff, social workers on site, contracts that stipulate alcohol testing at work, etc. is given in the EMP (APPENDIX IV).

Potential benefits

Some details of the proponent's financial obligations to the community are confidential. Contractual benefits due to the Hai//om Association are stipulated in the COC, legally enforceable, and implementation is monitored by the JMC.

- Concession fees, consisting of a minimum amount and a substantial percentage of net turnover, will be paid to the Hai//om Association and MEFT at a ratio of 75:25.
- Previously disadvantaged individuals, represented by the Hai//om Association and the Traditional Authority, own 8% shares in OHT.
- Employment opportunities: vacant positions will be offered to the communities surrounding the concession first, and only if no suitable candidate is found will the position be made available to other Namibians. All builders, contractors and employees will undergo security screening.
- Training raises the education level in the Hai//om community and may lead to opportunities for employment anywhere in Namibia.

7.1.5. Soil impacts

A combined baseline description and impact assessment is provided by the soil specialist in Table 6, it is discussed in Section 6.7, and summarised in this section.

All the proposed infrastructure will be located on koppies, slopes and valley bottoms where Pellic Vertisols (Figure 14) are the dominant soil types. They are clay-rich with high swelling and shrinking properties. Deep profiles, typically rich in calcium and magnesium, lead to good fertility levels.

These soils are sensitive to waterlogging and can become severely compacted during dry seasons. Poor management can lead to structural degradation, making them prone to cracking and erosion. Vertisols have unique resilience due to their ability to retain moisture and nutrients but require careful attention to moisture levels and structural integrity to prevent degradation.

The sensitivity of Vertisols is rated High (Table 6) and they are classed as "marginally suitable", a class comprising land that has significant limitations, making it only marginally suitable for the intended use. These limitations may require substantial management efforts, and the results may be inconsistent. A customised road management plan is provided in the EMP (APPENDIX IV) and should be followed during all phases of the development.

7.2. Potential impact screening

Potential impacts that were identified during the scoping process are given in Table 11 with their rankings and significance. The potential for significant negative impacts from a tourism development of this kind is low, and all the impacts can be prevented, mitigated or managed effectively by following the measures given in the EMP. In addition, implementation of the HCA and COC, as monitored by the JMC, can limit the extent and severity of potential risks.

Table 11. Potential impacts and their assessed significance

Description of Impact	Source of impact	Description of significance	Mitigation	Severity	Duration	Extent	Consequence	Probability	Significance
BIODIVERSITY									
Disturbance of animals	Infrastructure developments, land clearing & alteration; access routes, roads and tracks building, upgrading and using; reopening & expansion of borrow pits; solar panels; airstrip construction: vehicles & human presence, and operational phase: airstrip use. Vehicle movement.	The disturbance of animals in their foraging and movements may increase the risk of mortality. The impact is at the level of individual animals and the loss of species is highly unlikely. The small size of the project footprint limits the extent of significance. Operational activities have low potential of causing this impact.	with out	-H	-L	-L	-L	-L	-L
			with	-L	-VL	-VL	-VL	L	-VL
Disturbance of rhinos in their daily foraging and drinking activities	Private access in ENP and game viewing at the hide at !Gobaub.	Rhinos are disturbed by game drive vehicles, causing them stress, behavioural changes and potentially an increase in mortality. The impact is likely to be of lower significance than at any public waterhole in ENP because of the low volume and frequency of vehicles, and the fact that the guides will be trained in the principles of sensitive human-wildlife interaction by following a protocol approved by the National Rhino Coordinator of MEFT.	Wit hout	-VH	-VH	-H	-VH	VL	-H
			with	-L	-VL				
Loss of vertebrate fauna (linked to habitat destruction)	Infrastructure developments, land clearing & alteration; access routes, roads and tracks building, upgrading and using; reopening & expansion of	Death of organisms and destruction of habitat represent permanent loss and degradation at the level of individual animals and small locations. No	with out	-H	-L	-L	-L	-L	-L

Description of Impact	Source of impact	Description of significance	Mitigation	Severity	Duration	Extent	Consequence	Probability	Significance
	borrow pits; solar PV panels; airstrip construction: vehicles & human presence, and operational phase: airstrip use. Change in habitat.	species is expected to be affected to any meaningful level. The extent of the impact is limited to the project site.	with	-L	-L	-VL	-L	VL	-VL
Loss of protected terrestrial flora. Loss of sensitive habitats. Construction phase: clearing of land	Infrastructure developments, land clearing & alteration; access routes, roads and tracks building, upgrading and using; reopening & expansion of borrow pits; solar PV panels; airstrip construction: vehicles & human presence, and operational phase: airstrip use. Change in habitat.	Death of organisms and destruction of habitat represent permanent loss and degradation at the level of plant assemblages. No species is expected to be affected to any meaningful level, but the impact will definitely occur.	with out	-H	-L	-L	-L	H	-L
			with	-L	-L	-VL	-L	VL	-VL
Soil erosion (post-construction phase: access routes & roads/tracks in erodible soils; borrow pits)	Roads and tracks through areas with erodible soils cause dust pollution. Borrow pit management (post-construction) causes dust pollution	Dust settles on leaves, affecting photosynthesis and/or evapotranspiration. Erosion is discussed under "soil impacts". Management measures are provided in the EMP.							
Invasion & spread of invasive alien plant species (post construction)	Habitat disturbances favour invasion & spread of invasive alien plant species (post construction)	Invasive plants affect the integrity of ecosystems.	with out	-H	-L	-H	-H	H	-H
			with	-L	-VL	-VL	-VL	L	-VL
Contribution to scientific knowledge	Specialist study (Biodiversity and ecological assessment)	Results of the biodiversity and ecological study are available to inform decision making		L+	H+	L+	L+	L+	L+
Security for endangered species in ENP	The JV Concession acts as a buffer against poaching: increased human presence, access control, anti-poaching units.	Poaching is the biggest threat to rhinos. OHT will provide additional layers of security, as described in Section 7.1.2.		H+	L+	L+	H+	VH+	H+
Contribute to survival of species	Reintroduction of rare/endangered species to their former habitat	Black and white rhinos will be reintroduced to the JV concession, as well as a variety of browsers and grazers such as eland, zebra, springbok, impala, kudu and giraffe that will contribute to ecosystem functioning.		H+	L+	VL+	L+	VH+	H+
Reverse negative impacts (bush encroachment) from previous land use regimes & restore integrity of local ecosystems.	Bush encroachment on the JV Concession.	Bush encroachment leads to a loss of ecosystem functions, resulting in lower diversity values across all taxa. De-bushing has to take place in a controlled and scientific manner to ensure optimum conditions for reintroduced game species.		H+	H+	VL+	H+	VH+	H+

Description of Impact	Source of impact	Description of significance	Mitigation	Severity	Duration	Extent	Consequence	Probability	Significance
GENERAL ECOLOGICAL IMPACTS									
Solid waste, sewerage, water use, energy, noise and light pollution, landscaping	Daily human activities during construction and operation, vehicle and machinery use, PV panels, outdoor lights.	These impacts were not assessed because they can be prevented or managed to a very low significance by implementing the measures in the EMP		-H	-VL	-VL	-L	-VL	-VL
SOCIO-ECONOMIC IMPACTS									
All phases: increase in crime, violence, domestic violence and sex work. Operational phase: substance dependence, financial dependence.	Large number of construction workers with disposable income. Operational phase: financially illiterate employees suddenly have income	An entire community may be affected by a cycle of dependence and crime. A social protection programme is recommended and discussed in the EMP.	with out	-H	-H	-VL	-H	-H	-H
			with	-L	-L	-VL	-L	-L	-L
Community development	Employment, skills transfer, sustainable revenue stream, equity interest for the Hai//om community.	Discussed in Section 6.6 and 7.2.4		VH+	H+	L+	H+	VH+	VH+
HYDROGEOLOGY									
Accumulation of rainwater and runoff water in the borrow pits is expected and could infiltrate underground or overflow and potentially contaminate surface flow	Borrow pits for construction material	Cumulative impact: Groundwater contamination from waste or polluted surface runoff to karst aquifer is difficult to clean. Contamination can occur repeatedly during rainy season and accumulate if the source is not removed.	with out	-H	-H	-L	-H	L	-H
			with	-L	-VL	-L	-L	VL	-VL
Contamination of groundwater	Disposal of effluent. Spillage of hydrocarbons from vehicles and general maintenance	Cumulative impact: Groundwater contamination from wastewater to karst aquifer. May be a continuous source of contamination that can accumulate, but this impact is minimised by installing effective sewerage systems and hydrocarbon spillage is mitigated in the EMP.	with out	-H	-H	-L	-H	H	-H
			with	-L	-L	-L	-L	VL	-VL
Sustainability of water supply sources	Unsustainable abstraction from groundwater sources	Groundwater over-abstraction can lead to dewatering of the aquifer. The impact is reversible depending on rainfall and recharge. Additional resources are to be identified.	with out	-H	-H	-L	-H	L	-H
			with	-L	-L	-L	-L	L	-L
HERITAGE									

Description of Impact	Source of impact	Description of significance	Mitigation	Severity	Duration	Extent	Consequence	Probability	Significance
Damage to or destruction of sites with cultural value.	Construction of roads and buildings. Vehicles drive on or near heritage finds. People walk on or near heritage finds. Animals graze on grave sites.	Graves were identified. Potential impacts will be avoided by identifying, demarcating and fencing (where appropriate) heritage finds, and following the chance find protocol given in the EMP	with out	-H	-VH	-VL	-H	-VL	-L
			with	-VL	-VL	-VL	-VL	-VL	-VL
SOIL									
Soil contamination	Disposal of effluent. Spillage of hydrocarbons from vehicles and general maintenance	See "contamination of groundwater".							
The soil type on which infrastructure will be built are susceptible to waterlogging in wet season and compaction in dry season, leading to erosion and structural degradation.	Roads and tracks.	Degraded soils are cracked and compacted, decreasing their production capability and conservation value. Substantial management efforts are required and a road management plan is given in the EMP.	with out	-VH	-VH	-VL	-VH	H	-VH
			with	-L	H	-VL	-L	H	-L

8. CONCLUSIONS AND RECOMMENDATIONS

The aim of the scoping study with impact assessment is to identify the environmental and social impacts, both positive and negative, associated with the proposed project. The public consultation process played an important role in determining potential impacts and allowed comments and concerns from the local community and the public to be addressed.

This report presents:

- The EIA process that was followed
- Results of the public consultation process
- A project description
- A baseline description of the receiving environment sourced from five specialist studies
- Potential environmental and social impacts and their assessment

No fatal flaw was identified during the scoping process and the identified negative impacts can be mitigated to low or very low levels. The accompanying EMP provides prevention, mitigation and management measures to avoid or minimise negative impacts and enhance positive impacts.

The project presents low environmental risks with high socio-economic benefits. Compliance with environmental and cultural heritage regulations, and ongoing monitoring, adaptive management, and stakeholder engagement are recommended.

It is recommended that an ECC be issued to the proponent, with the condition that all management measures recommended in the EMP be followed.

8.1. Further study

The proposed project is defined by two contracts, the HCA and COC, that bind the 3 stakeholders and leave no scope for amendments without a lengthy and complex process of re-negotiating the contracts. Monitoring of compliance with the contracts and the EMP will be done by the JMC, consisting of MEFT, the community and the proponent.

The EMP for this project provides sufficient measures to effectively prevent, mitigate or manage any potential negative impacts and no further study is recommended.

8.2. Way forward

A public review phase took place from 31 March 2025 to 16 April 2025 during which a draft scoping report (with impact assessment) and a draft EMP were shared with registered I&APs and they were invited to comment. This document is the final scoping report (with impact assessment) and it represents the end of step 5 of the EIA process (Section 2.2). The current environment on the JV concession and in the Etosha South Traversing Concession has been described, studied, and assessed for potential impacts.

The last step in the EIA process is to submit this document together with the final EMP and their respective appendices to the Department of Environmental Affairs of MEFT for an authority review and decision by the office of the Environmental Commissioner. Registered I&APs will be informed of the submission and given the opportunity to request copies of the final documents.

9. REFERENCES

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APPENDIX I. CURRICULUM VITAE OF EAP

APPENDIX II. SCREENING NOTICE

APPENDIX III. PUBLIC CONSULTATION REPORT

A. BACKGROUND INFORMATION DOCUMENT

B. REGISTER OF INTERESTED AND AFFECTED PARTIES

C. NEWSPAPER ADVERTISEMENTS

D. SITE NOTICE

E. NOTICE OF BID

F. COMMENTS AND RESPONSES

APPENDIX IV. ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX V. ARCHAEOLOGY & HERITAGE SPECIALIST REPORT

A. Baseline study: Dr Alma Nankela

B. Fieldwork and Impact Assessment: Dr Eliot Mowa

C. Heritage Consent

APPENDIX VI. BIODIVERSITY SPECIALIST REPORT

APPENDIX VII. HYDROLOGY SPECIALIST REPORT

APPENDIX VIII. SOCIO-ECONOMIC SPECIALIST REPORT

APPENDIX IX. SOIL SPECIALIST REPORT