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REPORT:

FINAL SCOPING PLUS IMPACT ASSESSMENT REPORT FOR THE CONSTRUCTION AND OPERATION OF THE SANCTUARY SOSSUSVLEI LODGE

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ABBREVIATIONS

Abbreviation	Description
A&K	Abercrombie & Kent
AoI	area of influence
BID	background information document
BOH	back of house
CHIRPS	Climate Hazards Group InfraRed Precipitation with Station data
CIA	cumulative impact assessment
dBA	A-weighted decibels
DEAF	Department of Environmental Affairs and Forestry
DWA	Department of Water Affairs
EAP	environmental assessment practitioner
ECB	Electricity Control Board
ECC	Environmental Compliance Consultancy (Pty) Ltd
ECO	environmental control officer
EIA	environmental impact assessment
EMA	Environmental Management Act, No. 7 of 2007
EMP	environmental management plan
ESIA	environmental and social impact assessment
ESMP	environmental and social management plan
GDP	gross domestic product
GG	Government Gazette
GN	Government Notice
ha	hectare
HRC	Hardap Regional Council
I&AP	interested and affected party
IFC	International Finance Corporation
IUCN	International Union for Conservation of Nature
km	kilometre
kVA	kilovolt-ampere
LAeq	equivalent continuous A-weighted sound level
m^2	square metre
m^3	cubic metre
MAFWLR	Ministry of Agriculture, Fisheries, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism
MIME	Ministry of Industries, Mines and Energy
mm	millimetre
NDP6	Sixth National Development Plan
NHC	National Heritage Council
NTB	Namibia Tourism Board

Abbreviation	Description
OHS	occupational health and safety
PPE	personal protective equipment
(Pty) Ltd	proprietary limited
PV	photovoltaic
RA	Roads Authority
RoD	record of decision
SAIEA	Southern African Institute for Environmental Assessment
ToR	terms of reference
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WRMA	Water Resources Management Act, No. 11 of 2013

EXECUTIVE SUMMARY

Introduction

Neuhof Reserve (Pty) Ltd (the Proponent) proposes to construct and operate the Sanctuary Sossusvlei Lodge, a high-end Greenfields tourism development within the private reserve of the Namib Tsaris Conservancy in the Hardap Region. The Lodge will be operated by Abercrombie & Kent (A&K) Sanctuary Namibia. Environmental Compliance Consultancy (Pty) Ltd (ECC) was appointed by Pula Cost Consulting (Pty) Ltd, on behalf of the Proponent, as the independent environmental assessment practitioner to apply for an environmental clearance certificate, undertake the scoping plus impact assessment and develop the environmental and social management plan (ESMP).

Project description

The Lodge will comprise fifteen luxury guest accommodation units (13 single and 2 family units), a wellness centre and spa, a gym, swimming pools, lookout points and staff facilities, within a development footprint of approximately 18 500 m². The lodge facilities lie on the eastern side of the C19 road. The staff village, on the western side, will house the utilities, including the solar photovoltaic (PV) plant, backup diesel generators and fuel storage, and the water and wastewater treatment infrastructure. Approximately 5 000 litres of diesel will be stored on site, and water will be abstracted from onsite boreholes.
Construction is anticipated to start in July 2027, with the Lodge operational from September 2028. Approximately 30 to 50 temporary jobs will be created during construction and approximately 70 permanent jobs during operation.

Assessment process

The assessment has been undertaken in terms of the Environmental Management Act, No. 7 of 2007 (EMA) and the Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012). This report combines the scoping and impact assessment phases into a single report, as determined by the Department of Environmental Affairs and Forestry (DEAF) at screening. The baseline is based on desktop sources and an ECC site visit on 29 July 2026, and the hydrogeological study by Namib Hydro search CC (2025) was the only specialist study required. Impacts were assessed using a methodology based on IFC Performance Standard 1 (IFC, 2012).

Public consultation

Public consultation began on 13 July 2026, when notification letters and the background information document were sent to key stakeholders and interested and affected parties (I&APs). Advertisements were placed in The Republikein, The Namibian Sun and Allgemeine Zeitung on 15 and 22 July 2026, a public meeting was held in Sesriem on 29 July 2026, and a

site notice was erected on 30 July 2026. The issues raised concerned the use of the term "Sanctuary" in the Lodge name and the photograph used on the cover of the background information document. The background information document was available for review from 17 August 2026 to 28 August 2026, and the draft of this report and the draft ESMP were available for review for 14 days, from 20 October 2026 to 02 November 2026. No comments were received during either review period.

Receiving environment

The Project lies on the pro-Namib plain within the Greater Sossusvlei Namib Landscape, with the NamibRand Nature Reserve to the west and southwest. The climate is hyper-arid, with a mean annual rainfall of 76 mm. Groundwater is the Project's sole water source and is shared with neighbouring landowners and operators. Protected plant species, including *Moringa ovalifolia* and *Aloidendron dichotomum*, were observed on site, and the dark night sky and sense of place of the landscape underpin its tourism value.

Key findings

A total of 104 potential impacts were assessed across the construction, operational and decommissioning phases. Of these, 61 were assessed as significant before mitigation, 35 as not significant and 8 as beneficial. With mitigation, 23 of the significant impacts are reduced to Minor and 32 to Low residual significance, and no adverse impact retains Major significance. Six impacts remain at Moderate residual significance, relating principally to groundwater abstraction and to the permanent loss of employment, procurement spend and conservancy revenue on decommissioning.

Two beneficial impacts, the creation of permanent operational employment and the addition of high-value tourism capacity to the Sossusvlei area, retain Major positive significance after enhancement. The Project's contribution to cumulative impacts is most relevant to groundwater abstraction, night sky darkness and sense of place, wildlife disturbance and traffic on the C19.

In addition to the environmental clearance certificate, the Project will require a borehole abstraction and water use licence under the Water Resources Management Act, No. 11 of 2013 (WRMA), which the Department of Water Affairs will issue only once the environmental clearance certificate has been obtained, together with the other permits and licences listed in Table 5.

Conclusion and way forward

ECC is of the opinion that the potential environmental and social impacts of the Project can be reduced to acceptable levels, provided the mitigation, management and monitoring

measures in the final ESMP (Appendix A) are implemented and maintained throughout the Project life cycle. The draft report and draft ESMP were available to registered I&APs, key stakeholders, neighbouring properties and MEFT for review and comment from 20 October 2026 to 02 November 2026, and no comments were received. This final report and the final ESMP are submitted to MEFT (DEAF) for a record of decision on the application for an environmental clearance certificate.

1 INTRODUCTION

1.1 COMPANY BACKGROUND

Environmental Compliance Consultancy (Pty) Ltd (ECC) has been appointed by Pula Cost Consulting (Pty) Ltd, on behalf of Neuhof Reserve (Pty) Ltd (Project Proponent), as the independent environmental assessment practitioner (EAP) to submit an environmental clearance certificate application and undertake an environmental and social scoping plus impact assessment process and develop an environmental and social management plan (ESMP) for the proposed construction and operation of the high end Sanctuary Sossusvlei Lodge in the Namib Desert, Hardap Region, Namibia. The Project is located within the private reserve of the Namib Tsaris Conservancy and will be operated by Abercrombie & Kent (A&K) Sanctuary Namibia, a luxury hospitality and conservation focused tourism operator.

The proposed development is a Greenfields tourism development intended to provide high-quality accommodation and tourism facilities.

The following activities are envisioned, which shall be further defined as the Sossusvlei Lodge is refined:

- Fifteen (15) luxury guest accommodation units (13 single and 2 family units);
- Wellness centre;
- Gym facilities;
- Lookout points and viewing areas;
- Staff facilities (an extension of the existing facilities north of the current proposed location);
- Swimming pools; and
- Associated supporting infrastructure and services (e.g. solar photovoltaic (PV) plant).

The Project site is situated within a remote desert environment characterised by arid conditions, sparse vegetation and unique desert landscapes that contribute to the area's high conservation and tourism value. The proposed development footprint covers approximately 18 500 square metres (m²) and will accommodate the luxury lodge and its associated infrastructure. The lodge facilities will fall on the eastern side of the C19 road and the staff facilities on the western side of the C19 road.

The Project site is shown in Figure 1, Figure 2 and Figure 3, respectively.

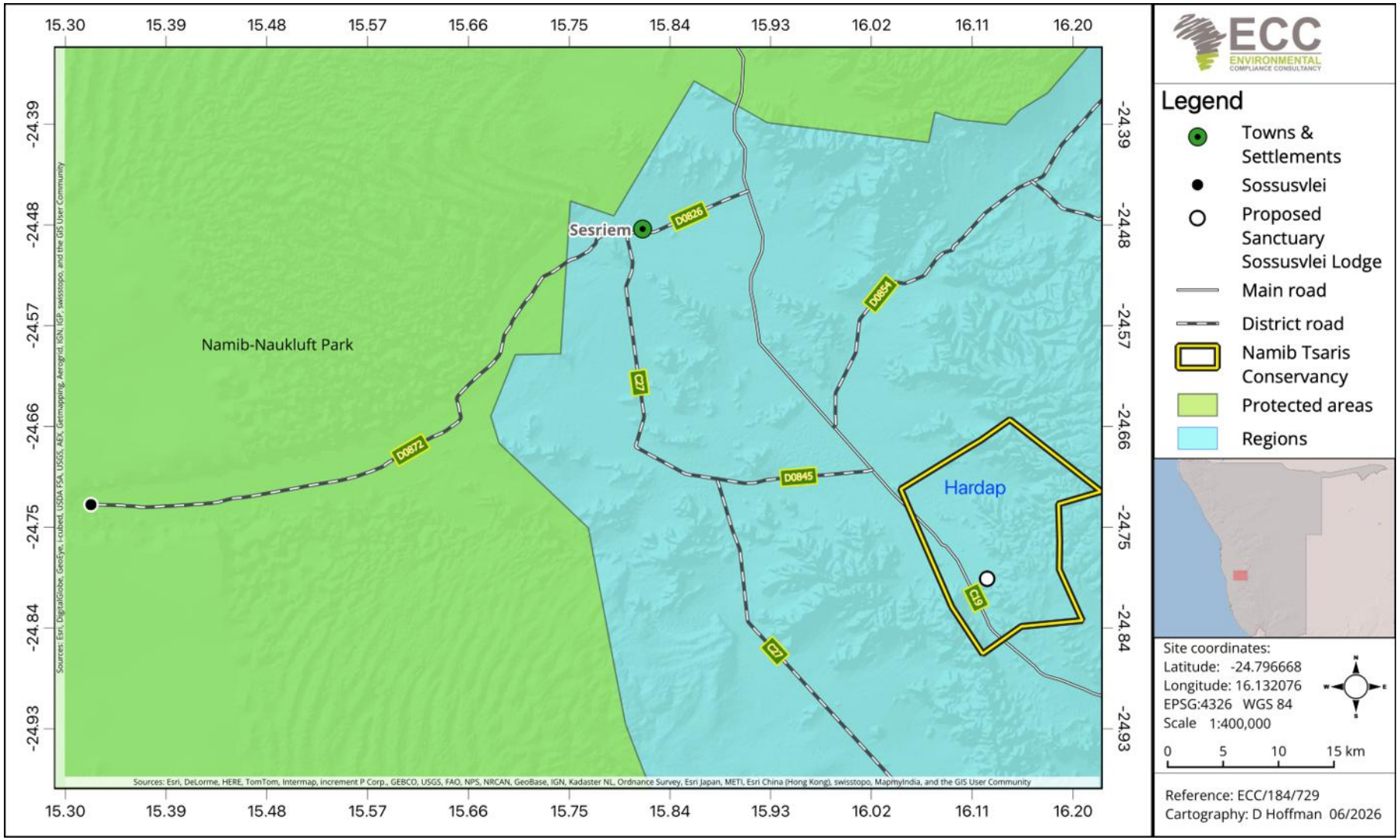

Figure 1 - Locality map of the Project site

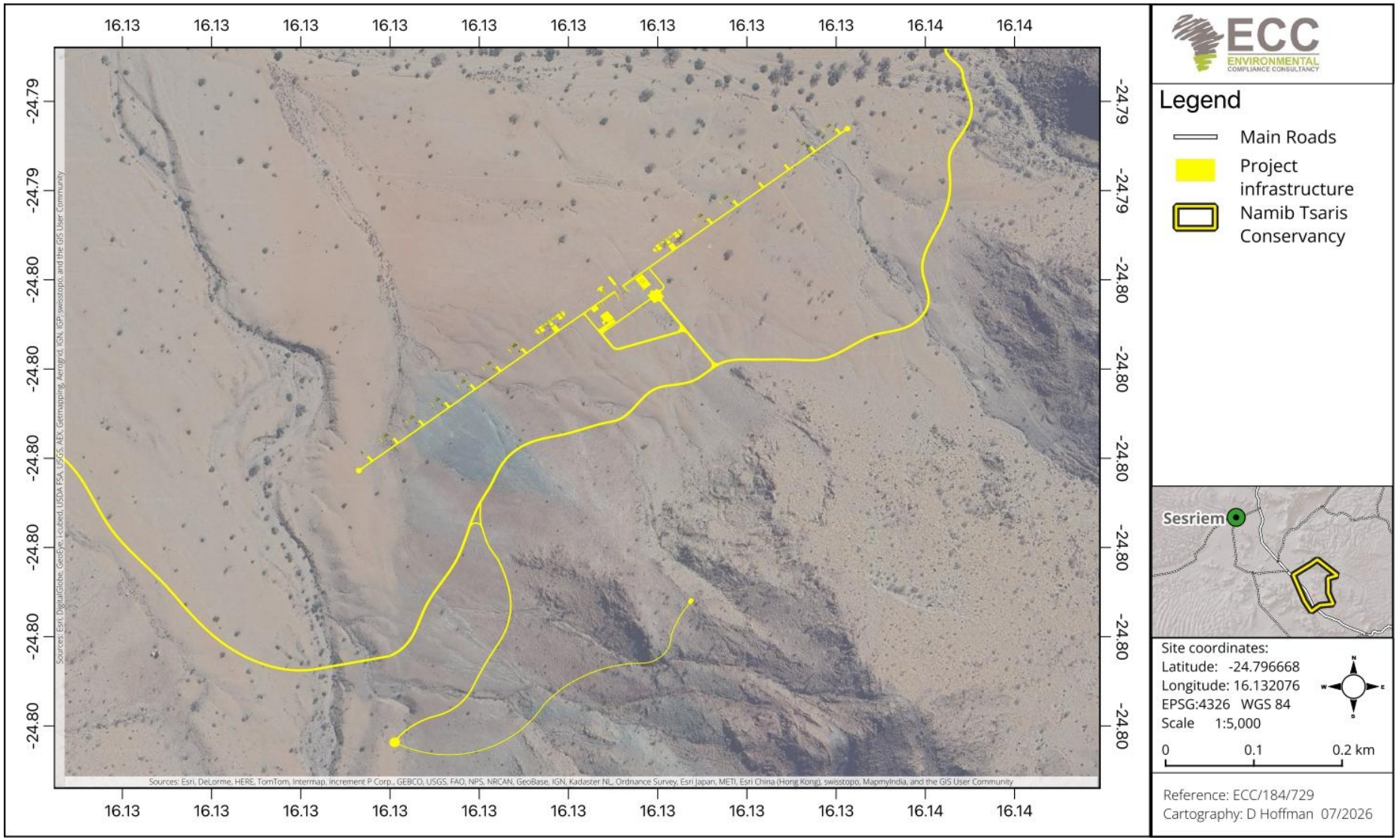

Figure 2 - Zoomed in locality map of the Lodge site

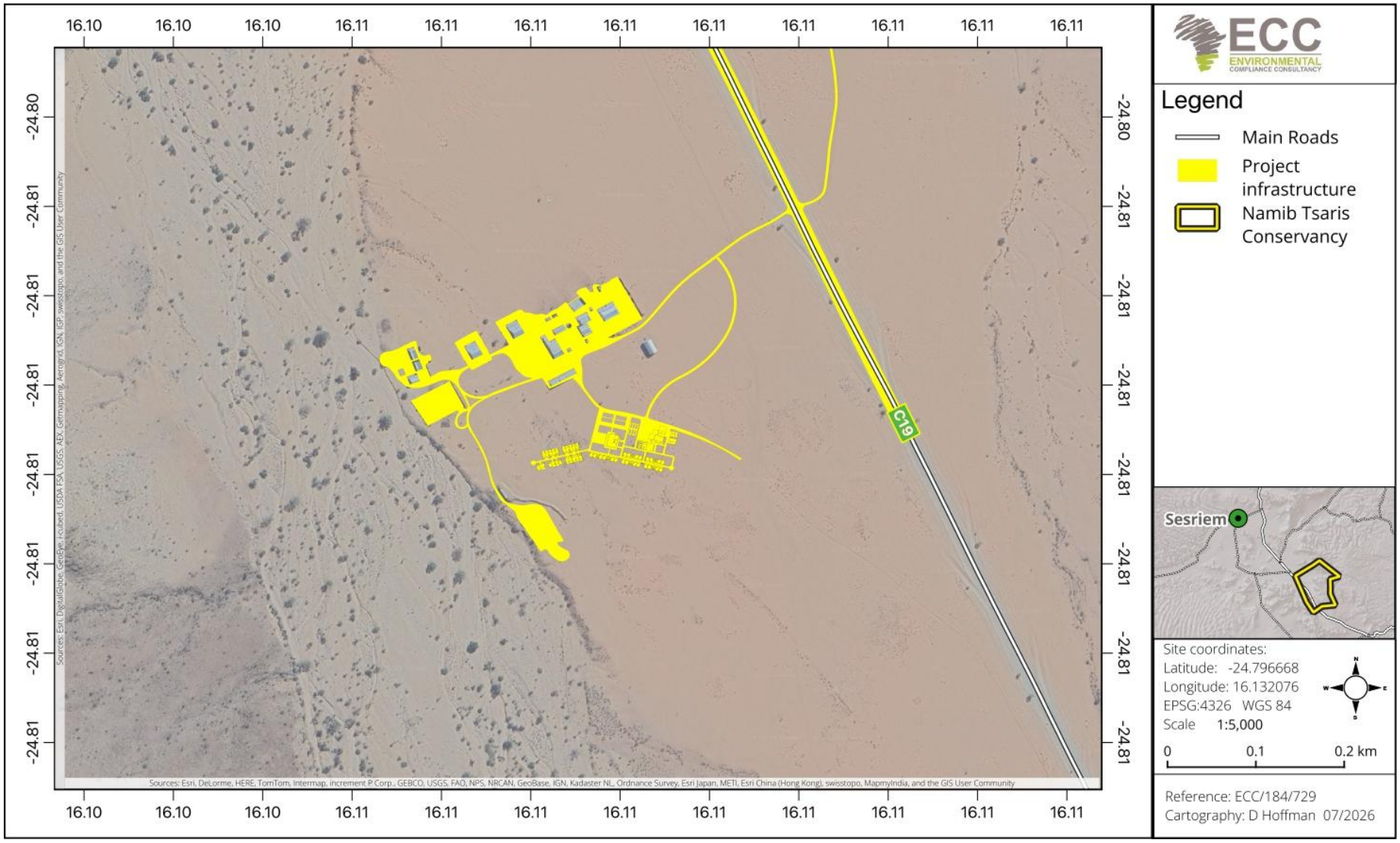

Figure 3 - Zoomed in locality map of the staff village site

1.2 THE PROPONENT'S DETAILS

Table 1 – Proponent's details

Company representative:	Contact details:
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1.3 PURPOSE OF THE SCOPING PLUS IMPACT ASSESSMENT REPORT

This scoping plus impact assessment report summarises the prescribed environmental and social impact assessment (ESIA) process followed, provides information on the baseline biophysical and socio-economic environments, Project description and details, identify and assess potential impacts, whether positive or adverse and their relative significance, explore alternatives for technical recommendations and identify appropriate mitigation measures.

This report provides information to the public and stakeholders to aid in the decision-making process for the proposed Project by MEFT. The objectives are to:

- Describe in depth the proposed activity and the site on which the activities are to be undertaken;
- Describe the baseline environment that may be affected by the proposed activities;
- Identify the laws, legislations and guidelines that have been considered in the assessment and preparation of this report;
- Provide details of the public consultation process;
- Provide a high-level analysis of feasible or unfeasible alternatives that were considered;
- Describes the assessment methodology used in the assessment;
- Provide an assessment of potential significant impacts identified; and
- Develop the management, mitigation and monitoring measures to minimise the potential impacts.

The ESMP provides a management framework for the planning and implementation of the proposed Project. The ESMP further provides development standards and commitments to ensure that the identified potential environmental and social impacts are minimised, mitigated, prevented, and/or enhanced as far as reasonably practicable, and that statutory requirements and other legal obligations are fulfilled.

This process is undertaken in terms of the Environmental Management Act No. 7 of 2007 (EMA) and its 2012 Regulations. ECC determined, as per Section 32(1) of the EMA that the Ministry of Environment, Forestry and Tourism (MEFT) is the competent authority.

The draft scoping plus impact assessment report and draft ESMP, with supporting appendices, were made available to registered interested and affected parties (I&APs), identified key stakeholders, neighbouring properties to the development and MEFT for review and commentary for a period of 14 days, from 20 October 2026 to 02 November 2026. No comments were received during the review period, and no changes to the assessment were therefore required. This final scoping plus impact assessment report and final ESMP (Appendix A) are submitted to MEFT, Department of Environmental Affairs and Forestry (DEAF), for review and a record of decision (RoD).

1.4 ENVIRONMENTAL AND SOCIAL ASSESSMENT PRACTITIONER

Environmental Compliance Consultancy (Pty) Ltd (ECC) (Reg. No. 2022/0593) has prepared this scoping plus impact assessment report on behalf of the Proponent.

This report has been authored by employees of ECC, who have no material interest in the outcome of this report, nor do any of the ECC team have any interest that could be reasonably regarded as being capable of affecting their independence in the preparation of this report. ECC is independent from the Proponent and has no vested or financial interest in the Project, except for fair remuneration for professional fees rendered which are based upon agreed commercial rates. Payment of these fees is in no way contingent on the results of this report or the assessment, or a record of decision issued by Government. No member or employee of ECC is, or is intending to be, a director, officer, or any other direct employee of the Proponent. No member or employee of ECC has, or has had, any shareholding in the Project.

All compliance and regulatory requirements regarding this report should be forwarded by email or posted to the following address:

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1.5 ENVIRONMENTAL REQUIREMENTS

The EMA and its 2012 Regulations stipulate that an environmental clearance certificate is required before undertaking any of the listed activities that are identified in the Act and its regulations. Potential listed activities triggered by the Project are provided in Table 2.

Table 2 - Activities potentially triggered by the Sanctuary Sossusvlei Lodge

Source: Environmental Management Act, 2007, and its regulations

Listed activity as defined by the regulations of the Act	Relevance to the Project
Energy generation, transmission, and storage activities 1. The construction of facilities for: (a) The generation of electricity; and (b) The transmission and supply of electricity.	– Diesel generators and solar power systems may be utilised during both the construction and operational phases to provide backup and supplementary electricity supply to the lodge and associated infrastructure.
Waste management, treatment, handling and disposal activities 2.1) The construction of facilities for waste sites, treatment of waste and disposal of waste (2.3) The import, processing, use and recycling, temporary storage, transit or export of waste.	– The proposed Project involves the construction and operation of the Sanctuary Sossusvlei Lodge and associated infrastructure, which will generate general domestic waste, recyclable waste and hazardous and hydrocarbon waste streams during both the construction and operational phases. – Ablution facilities will be constructed as part of the lodge infrastructure and wastewater generated during operation will be managed through an on-site advanced wastewater treatment system. – Waste bins and designated waste storage areas will be provided to ensure the proper collection, separation and management of general waste, including food waste, packaging materials and housekeeping waste. – A wastewater treatment, reuse and discharge licence, issued in terms of the Water Resources Management Act, No. 11 of 2013 (WRMA) by Department of Water Affairs (DWA) will be required for the wastewater treatment facility.

Listed activity as defined by the regulations of the Act	Relevance to the Project
Mining and Quarrying Activities (3.1) The construction of facilities for any process or activities which requires a license, right or other form of authorisation, and the renewal of a license, right or other form of authorisation, in terms of the Minerals (Prospecting and Mining Act), 1992.	–
Forestry activities (4.) The clearance of forest areas, deforestation, afforestation, timber harvesting or any other related activity that requires authorisation in terms of the Forest Act, 2001 (Act No. 12 of 2001) or any other law	– Limited vegetation clearing will be required within the development footprint to accommodate lodge infrastructure, internal access roads, parking areas and associated services. – Disturbed areas will be rehabilitated following construction, and necessary permits will be obtained where protected or controlled plant species are affected.
Tourism development activities (6.) The construction of resorts, lodges, hotels or other tourism and hospitality facilities.	– The lodge comprising of thirteen (13) single units and two (2) family units will be constructed along with the following supporting infrastructure: swimming pools, restaurant, gym, reception block, spa and staff village.
Water resource developments (8.1) The abstraction of ground or surface water for industrial or commercial purposes. (8.6) Construction of industrial and domestic wastewater treatment plants and related pipeline systems. (8.8) Construction and other activities in watercourses within flood lines.	– Water will be abstracted from onsite borehole(s) to support construction activities and lodge operations including, domestic use and housekeeping. – A borehole abstraction and water use licence issued by DWA in terms of WRMA will be required. – If new boreholes are to be drilled, these boreholes will need to be registered before drilling is to take place. This requires the submission of an application for a borehole drilling licence.

Listed activity as defined by the regulations of the Act	Relevance to the Project
Hazardous substance treatment, handling, and storage 9.1 The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.	– Fuels, oils, cleaning chemicals, concrete batching and other hazardous and hydrocarbon substances will be stored, transported, handled and used on site during both the construction and operational phases. – Diesel for the backup diesel generator (approximately 5000 litres (L)) will be stored on site in double walled, self-bunded diesel storage tanks. In terms of the Petroleum Act, No. 13 of 1990 and its Regulations of 2000, a consumer installation certificate will be required for the bulk fuel storage (> 600 L above ground), handling and dispensing of fuel in a rural area from the Ministry of Industries, Mines and Energy (MIME).
Infrastructure 10.1 The construction of- (d) Airports and airfields (g) Communication networks including towers, telecommunication and marine telecommunication lines and cables (j) Masts of any material or type and of any height, including those used for telecommunication broadcasting and radio transmission, but excluding: (ii) Lightning conductor's poles	–

2 APPROACH TO THE ASSESSMENT

2.1 PURPOSE AND SCOPE OF THE ASSESSMENT

This assessment aims to determine which impacts are likely to be significant. Available data was reviewed to identify any information gaps, inform the spatial and temporal scope of the assessment, and define the methodology to be applied.

The scope of the assessment was established through a preliminary evaluation of the proposed Project in relation to the receiving biophysical and social environment, based on a desktop review. Thereafter an infield visit was conducted on 29 July 2026 to verify the onsite conditions. During the screening phase, it was determined that no specialist studies are required apart from the hydrogeological report available from Namib Hydrosearch (October 2025) (Appendix C).

2.2 THE ASSESSMENT PROCESS

The ESIA methodology applied in this assessment has been developed in alignment with Namibia's Environmental and Management Act, No. 7 of 2007 (EMA) and has been developed and modelled using the International Finance Corporation (IFC) standards, in particular Performance Standard 1: *Assessment and Management of Environmental and Social Risks and Impacts* (IFC, 2012; IFC, 2017). This standard emphasises the importance of:

- Integrated assessments to identify the environmental and social impacts, risks, and opportunities associated with Projects;
- Effective stakeholder engagement through the disclosure of Project-related information and consultation with local communities on matters that directly affect them; and
- The Proponent's management of environmental and social performance throughout the Project lifecycle.

In addition, the Namibian Draft Procedures and Guidance for ESIA and EMP (Republic of Namibia, 2008), together with applicable international and national best practice, and over 40 years of combined ESIA experience, have informed the assessment process.

This impact assessment is a formal process through which the potential impacts of the Project on the biophysical, social and economic environments are identified, assessed and reported, enabling the significance of these impacts to be considered in decisions regarding approval, consent or support for the proposed Project.

2.3 SCREENING OF THE PROJECT

The initial stages of the ESIA process involve registering the Project with the Department of Environment Affairs and Forestry (DEAF) within the Ministry of Environment, Forestry and

Tourism (MEFT) and undertaking a screening exercise to identify any triggered listed activities under the Environmental Management Act, No. 7 of 2007 (EMA) and the associated Regulations of 2012. The location, scale and duration of Project activities were considered in relation to the receiving environment to inform an initial assessment of potential impact significance.

The proposed Project constitutes a listed activity, and potential impacts have been identified. It was therefore concluded by the DEAF during Project registration and screening through the terms of reference (ToR) that a scoping plus impact assessment report is required for the Project. In addition, an environmental and social management plan (ESMP) will be developed and submitted as part of the application for an environmental clearance certificate.

1. Project screening

Complete

The first stages in the draft scoping plus impact assessment process are to undertake a screening exercise to determine whether the Project triggers listed activities under the Environmental Management Act, 2007, and its Regulations. The screening phase of the Project is a preliminary analysis, to determine ways in which the Project might interact with the biophysical, social, and economic environments.

Stakeholder engagement:
- Registration of the Project
- Preparation of the BID

2. Establishing the assessment scope

Complete

Where a scoping plus impact assessment is required, the second stage is to scope the assessment. The main aim of this stage is to determine which impacts are likely to be significant; to scope the available data and any gaps that need to be filled; to determine the spatial and temporal scope; and to identify the assessment methodology.

The scope of this assessment was determined through undertaking a preliminary assessment of the proposed Project against the receiving environment. The following environmental and social topics were scoped into the assessment, as there was the potential for significant impacts to occur. Impacts that are identified as potentially significant during the screening and scoping phase are taken forward for further assessment in the scoping with impact assessment process. These are:

SOCIOECONOMIC ENVIRONMENT
- Employment
- Local & regional business impacts
- Air quality
- Noise quality
- Heritage and cultural
- Visual / sense of place
- Increased tourism
- Occupational health and safety
- Traffic
- Cumulative impacts

BIOPHYSICAL ENVIRONMENT
- Surface and ground water
- Biodiversity
- Road development
- Soil contamination
- Petroleum spills and leakages
- Cumulative impacts

3. Baseline studies

Complete

A robust baseline is required, to provide a reference point against which any future changes associated with a Project can be assessed, and to allow suitable mitigation and monitoring to be identified.

The region and general area have been studied for various projects and assessments. The available literature will be referenced. The Project site-specific area has been studied as part of the scoping plus impact assessment process and the following has been conducted as part of this assessment:

- Desktop studies;
- Site verification;
- Hydrogeological specialist study; and
- Consultation with stakeholders

The environmental and social baselines are provided chapter 5 of this report.

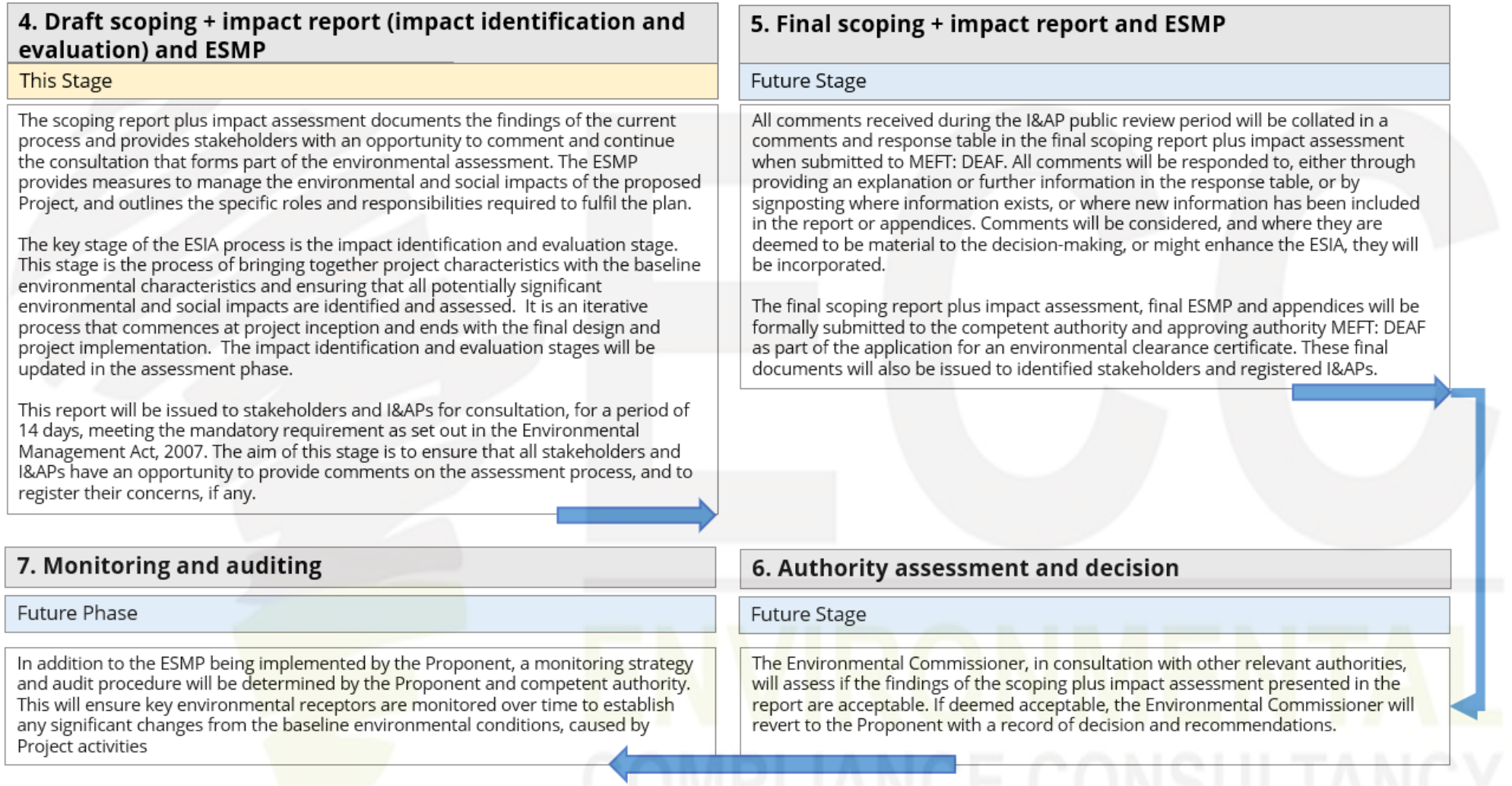


Figure 4 - ESIA flowchart

2.3.1 SCOPING AND THE ENVIRONMENTAL ASSESSMENT

Where a detailed assessment is required, the second stage of the ESIA process is the scoping phase. The primary objectives of this stage are to identify impacts that are likely to be significant, review available baseline data and identify any information gaps, define the spatial and temporal boundaries of the assessment and establish the methodology to be applied.

The scoping phase involves a preliminary evaluation of how the Project may interact with the biophysical, social and economic environments. Potential impacts are initially identified during the screening phase and are further evaluated during the scoping and impact assessment phase. Feedback from stakeholder engagement, including consultation with interested and affected parties (I&APs), has informed the impact analysis.

The methodology and outcomes of the impact assessment are presented in chapters 6 and 7 of this report, respectively. The following environmental and social aspects were considered during the initial impact screening phase:

BIOPHYSICAL ENVIRONMENT

- Surface water and groundwater (including hydrology and vulnerability);
- Biodiversity (fauna and flora)
- Road development;
- Soil contamination;
- Petroleum spills and leakages;
- Cumulative impacts.

SOCIO-ECONOMIC ENVIRONMENT

- Noise;
- Air quality;
- Traffic;
- Visual impact (viewshed);
- Occupational health and safety;
- Increment in tourism;
- Impacts on cultural heritage (including disturbance to heritage objects or artefacts);
- Employment and economic opportunities;
- Local and regional economic impacts (including market competition);
- Contribution to government revenue; and
- Cumulative socio-economic impacts.

2.4 BASELINE STUDIES

Baseline studies are undertaken as part of the scoping phase and involve the collection and review of relevant information to characterise the current condition of the receiving

environment within the Project's area of influence (AoI). This establishes a reference baseline against which potential changes resulting from the Project can be assessed.

For this Project, baseline information was primarily derived from a desktop review, with a focus on key environmental and social receptors that may be affected by Project activities. The baseline was subsequently verified through a site visit conducted by Environmental Compliance Consultancy (ECC) on 29 July 2026. Additionally, the hydrogeological specialist report (Appendix C) was also used to inform chapter 5.

A detailed description of the baseline environment is provided in chapter 5 of this report.

2.5 STUDY AREA

This scoping plus impact assessment study area has been defined according to the geographic scope of the receiving environment and potential impacts that could arise because of the proposed Project within that area. The receiving environment is a summary term for the biophysical and socioeconomic environment described in the baseline chapter (chapter 5).

The study area considers the proposed lodge footprint, staff village (south of existing staff village for established lodge activities on Farm Neuhof), advanced wastewater treatment plant, spa/wellness centre, internal roads, solar PV plant and associated infrastructure, as well as surrounding areas that may be affected by activities such as construction, water abstraction, wastewater management, vehicle movements, noise, visual impacts and increased human activity.

2.6 PUBLIC CONSULTATION

Public participation and consultation are a requirement stipulated in Section 21 of the Environmental Impact Assessment Regulations (Regulations 21 and 23) of the EMA for a project undertaking a listed activity and requires an environmental clearance certificate.

Consultation is a compulsory and critical component of the ESIA process for achieving transparent decision-making and can provide many benefits. Consultation is ongoing during the ESIA process. The objectives of the public participation and consultation process are to:

- Provide information on the Project and introduce the overall Project concept and plan in the form of a background information document (BID), which can be viewed in the Public Consultation report (Appendix B);
- Determine the relevant government, regional and local regulating authorities;
- Engage with stakeholders to understand community issues, record concerns and questions raised;

- Explain the scoping and impact assessment process, including associated timeframes; and
- Establish a platform for ongoing consultation.

The Project was registered on the MEFT portal on 05 June 2026 and public consultation for the Project commenced on 13 July 2026, when stakeholder notification letters and the BID were distributed via email to identified key stakeholders and I&APs.

A site notice was subsequently erected at the proposed Project site on 30 July 2026.

Advertisements were published in local newspapers to announce the public meeting and to invite members of the public to register as I&APs. Advertisements for the public meeting were placed in the following newspapers on 15 July 2026 and 22 July 2026, respectively:

- The Republikein;
- The Namibian Sun; and
- Allgemeine Zeitung.

A reminder for the public meeting was sent out on email on 27 July 2026 to all identified stakeholders and registered I&APs. A public meeting was held on 29 July 2026 at 15:00 at the Sossusvlei Lodge Boardroom in Sesriem, where information on the proposed Project and the environmental assessment process was presented and stakeholders were provided with an opportunity to raise comments and concerns. The public consultation report is presented in Appendix B.

2.6.1 IDENTIFICATION OF KEY STAKEHOLDERS AND INTERESTED AND AFFECTED PARTIES

A stakeholder identification and engagement process was undertaken to identify relevant authorities, organisations, businesses and other parties with an interest in, or who may potentially be affected by, the proposed Project. Figure 5 provides an example of a stakeholder map for the Project AOI.

Stakeholders and I&APs were engaged through direct communication, written notifications, newspaper advertisements, the site notice and the public meeting. The consultation process focused on obtaining feedback relevant to the proposed lodge development and its potential environmental and socio-economic impacts.

A summarised list of stakeholders that were engaged during the public consultation process is given below:

- Directly and indirectly affected Lodge, adjacent farms and landowners;
- The public with an interest in the Project;
- Ministry of Environment, Forestry and Tourism (MEFT);
- Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR);
- Ministry of Industries, Mines and Energy (MIME);

- National Heritage Council (NHC);
- Hardap Regional Council (HRC);
- Namibian Tourism Board
- Daweb Constituency;
- Roads Authority (RA);
- Neighbouring lodges and tourism operators; and
- Relevant conservancy/community representatives.

The records of the public consultation process in the form of a summary report are provided in Appendix B and provides a list of interested and affected parties (I&APs'), evidence of consultation, including notes of the public meeting, advertisements in national newspapers and a summary of the comments or questions raised by the public.

The background information document was made available for review and comment from 17 August 2026 to 28 August 2026. The draft scoping plus impact assessment report and draft ESMP were made available to MEFT and registered I&APs for review and comment for 14 days, from 20 October 2026 to 02 November 2026. No comments were received during either review period. The review periods and their outcome are recorded in the comments and responses report in Appendix B. This final scoping plus impact assessment report and final ESMP are submitted to MEFT for a RoD. All registered I&APs and identified stakeholders will also receive records of these reports.

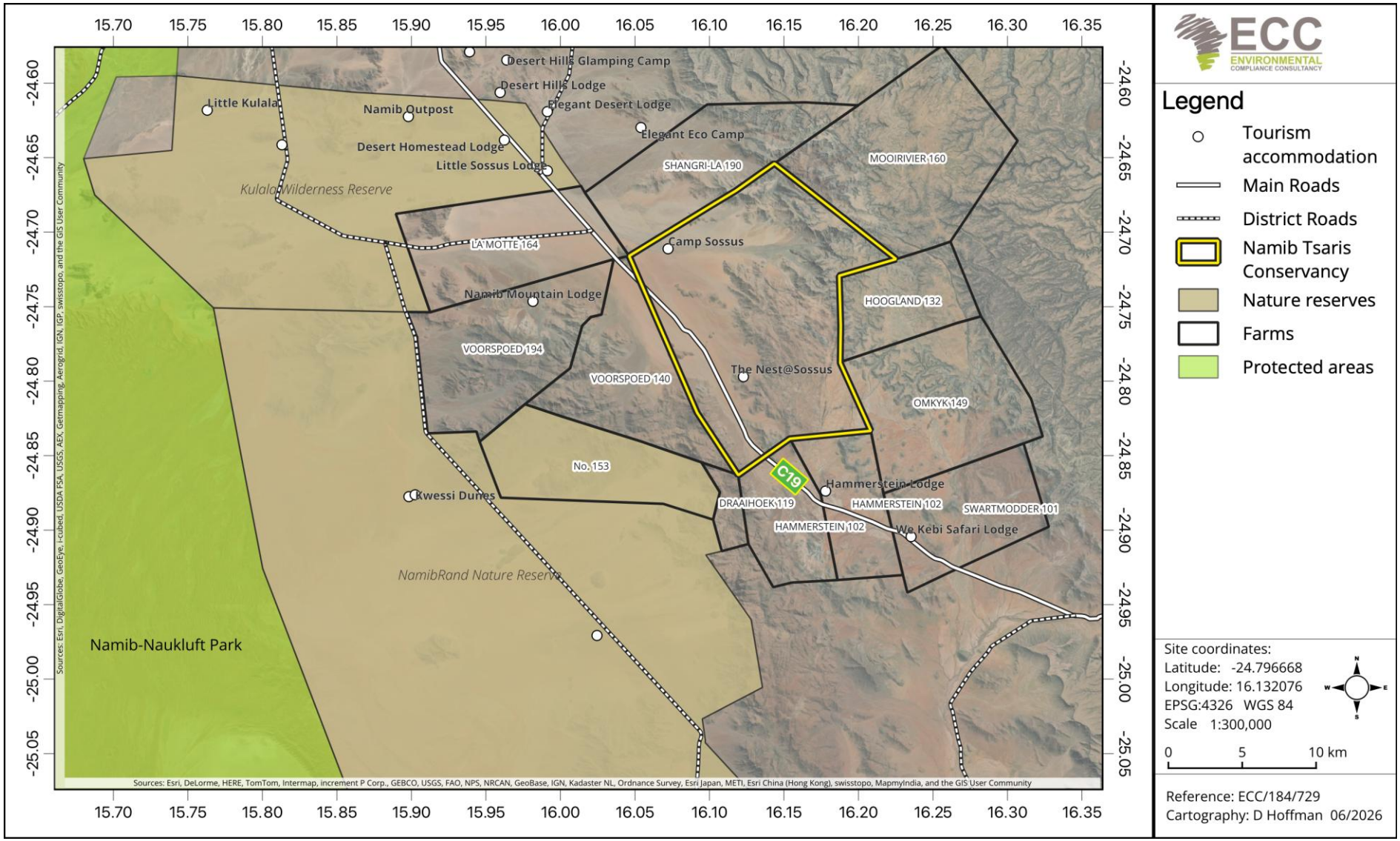


Figure 5 - Project stakeholder map with surrounding farms and lodges

2.6.2 SUMMARY OF ISSUES RAISED

The comments and concerns raised during the public consultation process were generally related to the proposed lodge development, Project documentation and the potential implications of the development for the surrounding tourism environment and these are summarised as follows:

- Proposed lodge name: A concern was raised regarding the use of the term "Sanctuary" in the proposed lodge name and the potential broader reputational implications for existing lodges and businesses operating under or associated with the "Sossusvlei" brand. The concern was noted and referred to the Proponent for consideration. As the development progresses, the proposed lodge name could change.
- BID cover photograph: A stakeholder raised a concern that the photograph used on the BID cover depicted another lodge and had been used without consent. It was confirmed that the photograph would be replaced with an appropriate image provided by the lodge operator. The BID will be re-uploaded onto the MEFT portal.

The comments received during the consultation process were considered in the environmental assessment and, where relevant, incorporated into the assessment of potential impacts and management measures. No comments were received during the review periods for the background information document (17 August 2026 to 28 August 2026) or the draft report and draft ESMP (20 October 2026 to 02 November 2026).

3 REVIEW OF THE LEGAL ENVIRONMENT

3.1 RELEVANT NATIONAL LEGISLATION

This chapter outlines the regulatory framework applicable to the proposed Project. A review of relevant legislation has been conducted to identify the applicable laws, policies and guidelines that aligns with the proposed Project. As stated in chapter 1, an environmental clearance certificate is required for any activity listed in Government Notice No. 29 of 2012 of the EMA.

Table 3 outlines the relevant legal requirements specific to the Project, Table 4 outlines Namibian national policies and plans applicable to the proposed Project and Table 5 lists specific permits, licences or certificates that will be required for the Project.

3.2 NATIONAL REGULATORY FRAMEWORK

Table 3 - Details of the regulatory framework as it applied to the Sanctuary Sossusvlei Lodge

National regulatory framework	Summary	Applicability to the Project
Constitution of the Republic of Namibia (1990)	The constitution defines the country's position in relation to sustainable development and environmental management. The constitution states that the state shall actively promote and maintain the welfare of the people by adopting policies aimed at the following: "Maintenance of ecosystems, essential ecological processes and biological diversity of Namibia, and the utilisation of living, natural resources on a sustainable basis for the benefit of all Namibians, both present and future."	The Proponent is committed to the sustainable use of the environment and has aligned its corporate mission, vision, and objectives with the ambit of the Constitution of the Republic of Namibia (1990).
Environmental Management Act, No.7 of 2007 and the Environmental Management Act Regulations (2012) including the Environmental Impact Assessment Regulations, 2012 (Government Notice No. 30 of 2012)	The Act aims to promote sustainable management of the environment and use of natural resources. The Act requires certain activities to obtain an environmental clearance certificate prior to Project development. The Act states that an EIA should be undertaken and submitted as part of the environmental clearance certificate application process. The MEFT is responsible for the protection and management of Namibia's natural environment. The Department of Environmental Affairs and Forestry,	This environmental scoping plus impact assessment report documents the findings of the scoping and assessment phase of the environmental assessment undertaken for the proposed Project. The process has been undertaken in line with the requirements under the Act and its regulations. The Project shall not commence until an environmental clearance certificate has been

National regulatory framework	Summary	Applicability to the Project
	under the MEFT, is responsible for the administration of the EIA process.	issued in accordance with the provisions of the Environmental Management Act, No. 7 of 2007.
Water Resource Management Act, No. 11 of 2013 and the Water Resource Management Regulations, 2023	The Water Resources Management Act (No. 11 of 2013) has been billed and was promulgated in August of 2023. The regulations were also passed in August of 2023. This Act provides for the control, conservation and use of water for domestic, agricultural, urban, and industrial purposes; and to make provision for the control of certain activities on or in water. The Department of Water Affairs, within the Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR), is responsible for the administration of the Act.	The Act stipulates obligations to prevent the pollution of water and measures to minimise potential surface and groundwater pollution are contained in the ESMP (Appendix A). Since the promulgation of the new act and regulations, the entire Namibia is now considered a water-controlled area. Therefore, the Project is obliged to have all licences relevant to its operations under this Act. The Project will require water from onsite groundwater borehole(s) for construction and lodge operations and will therefore require the necessary water abstraction and use licence(s) from the Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR). A wastewater treatment, reuse and discharge licence will also be required for the proposed onsite advanced wastewater treatment system. If additional boreholes are to be drilled for water abstraction, a borehole registration and drilling licence application is required to be

National regulatory framework	Summary	Applicability to the Project
		submitted to DWA. The Proponent to ensure that the drilling company is formally registered with DWA.
The Forestry Act, No. 12 of 2001 as amended by the Forest Amendment Act, No. 13 of 2005	Section 22 deals with the protection of natural vegetation that is not part of the surveyed erven of a local authority area as defined. Section 21 states that no person shall cut, destroy, or remove vegetation that is growing within 100 metres of a river, stream, or watercourse. Section 23 requires a permit from the Director for the clearance of vegetation on more than 15ha on any piece of land or several pieces of land situated in the same locality as that which has predominantly woody vegetation; or cut or remove more than 500 cubic metres of forest produce from any piece of land in a period of one year.	Limited vegetation clearing will be required within the development footprint for lodge infrastructure, internal roads, staff village, parking areas and associated services. The Proponent will ensure that all required permits are in place before vegetation removal commences.
National Heritage Act, No. 27 of 2004.	The Act provides provision for the protection and conservation of places and objects with heritage significance. Section 55 requires any person who discovers an archaeological or palaeontological object to report it to the National Heritage Council.	The proposed development may disturb archaeological, cultural heritage or palaeontological resources. The chance find procedure will be used when heritage sites are discovered, as described in the ESMP (Appendix A).

National regulatory framework	Summary	Applicability to the Project
	Subsection 9 allows the NHC to issue a consent, subject to any conditions that the Council deems necessary.	
Labour Act, No. 11 of 2007	The Labour Act, No. 11 of 2007 (Regulations relating to the Occupational Health & Safety provisions of Employees at Work, promulgated in terms of Section 101 of the Labour Act, No. 6 of 1992 - GN156, GG 1617 of 1 August 1997)	The Project shall adhere to all labour provisions and guidelines, as enshrined in the Labour Act. The Project shall also develop and implement a comprehensive occupational health and safety plan to ensure adequate protection for its personnel throughout the Project lifecycle.
Road Traffic and Transport Act, No. 22 of 1999	This Act makes provision for the control of traffic on public roads, the licensing of drivers, the registration and licensing of vehicles, and the control and regulation of road transport users across Namibia.	Construction and operational activities will involve vehicle movements, deliveries and the transportation of personnel and materials along the existing C19 road. Project-related services and infrastructure may also require the road to be crossed at designated locations. All employees, contractors and supporting businesses will be required to comply with applicable national road traffic legislation and regulations when using public roads. Roads Authority will need to be engaged during construction regarding services crossing the C19 road.
Hazardous Substances Ordinance, No. 14 of 1974	This Ordinance provides for the control of toxic substances and can be applied in conjunction with the Atmospheric Pollution Prevention Ordinance, No. 11 of 1976.	The planned Project will involve the handling, transport and storage of hazardous and hydrocarbons substances such as fuels, oils, cleaning chemicals, cement and concrete

National regulatory framework	Summary	Applicability to the Project
	This applies to the manufacture, sale, use, disposal, and dumping of hazardous substances, as well as their import and export.	batching and other hazardous or hydrocarbon substances. The Proponent shall ensure and implement appropriate handling, storage, containment and disposal procedures for hazardous substances. The Proponent is obliged to ensure that all permits under this Ordinance are obtained prior to Project commencement.
Petroleum Products Regulations, 2000 under the Petroleum Act, No. 13 of 1990	The petroleum legislation and regulations regulate petroleum products and requirements for the storage, handling and dispensing of fuel.	Approximately 5 000 litres of diesel for the backup generator will be stored onsite in double-walled, self-bunded tanks. As the proposed bulk fuel storage exceeds 600 litres above ground in a rural area, a consumer installation certificate will be required for the storage, handling and dispensing of fuel from the Ministry of Industries, Mines and Energy (MIME).
Electricity Act, No. 4 of 2007	Required for the establishment and operation of the proposed solar photovoltaic (PV) plant, unless the installation qualifies for an exemption under the Electricity Act. An onsite generation plant of less than 500 kVA generating electricity exclusively for own consumption may be exempt from the generation licensing requirement, subject to the applicable requirements of the Act.	The proposed Project will include an onsite solar photovoltaic (PV) plant to provide electricity for the reserve's operations.

National regulatory framework	Summary	Applicability to the Project
Namibia Tourism Board Act, No. 21 of 2000 and 2004 Regulations	Section 19 of the Act required accommodation establishments to be registered. Section 20 of the Act describes the application for registration of an accommodation establishment. Section 21 of the Act describes the application for grading of accommodation establishments and Section 22 the regrading. Section 23 of the Act requires the regulation of sectors within or relating to the tourism industry and persons or businesses falling within the categories set out in the schedule is required to hold in respect of that business a certificate of registration. Section 24 of the Act requires the application for registration of regulated businesses. Section 29 describes the levies to be paid by the regulated categories. Should the Project's operations include any of the scheduled businesses under the Regulations, such as (a) activity operators, (e) foreign tour operators, or (f) shuttle and transport service operators, the	The Proponent is required to be registered with the Namibia Tourism Board (NTB) and complete the required application and registration forms as per the categories stipulated in the regulations, which pertains to new lodges and associated recreational activities for the Project. Should the Project's operations fall within any of the scheduled business categories referred to above, Annexures 1, 2, 6 and 7 of the Regulations set out the applicable fees and registration requirements, and the Proponent would be required to comply with these accordingly.

National regulatory framework	Summary	Applicability to the Project
	corresponding registration requirements set out in the Regulations would apply to the Project.	

3.3 NATIONAL POLICIES AND PLANS

Table 4 - Namibian national policies and plans applicable to the Sanctuary Sossusvlei Lodge

Policy or plan	Description	Relevance to the Project
Vision 2030	Vision 2030 sets out the nation's development targets and strategies to achieve its national objectives. Vision 2030 states that the overall goal is to improve the quality of life of the Namibian people aligned with the developed world.	The proposed Project shall aim to meet the objectives of Vision 2030 and shall contribute to the overall development of the country through continued employment opportunities and ongoing contributions to the gross domestic product (GDP).
Sixth National Development Plan (NDP6)	The NDP6 is the sixth in a series of seven five-year national development plans that outline the objectives and aspiration of Namibia's long-term vision. The NDP6 four pillars are: - Economic growth, transformation and resilience; - Human development and community resilience; - Environmental sustainability; and - Good governance and effective public service delivery.	The planned Project supports meeting the objectives of the NDP6 through creating opportunities for continued employment and economic growth for the Hardap Region.

Policy or plan	Description	Relevance to the Project
National Disaster Risk Management Policy	The policy provides a framework for disaster preparedness, prevention, mitigation and emergency response.	The Project will develop and implement emergency preparedness to reduce risks associated with fire outbreaks and other potential accidents (construction and operational phases).

Table 5 - Specific permits, certificates and licence requirements for the Sanctuary Sossusvlei Lodge

Permit or licence	Related activities requiring permits/licences	Relevant authority
Environmental clearance certificate	Required for any listed activities in terms of the EMA and its Regulations of 2012.	Ministry of Environment, Forestry and Tourism (MEFT) – Department of Environmental Affairs and Forestry (DEAF)
Borehole abstraction and water use licence	Required for abstraction of groundwater from onsite borehole(s) for construction and lodge operations.	Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR) - Department of Water Affairs (DWA)
Boreholes registration and drilling licence (exploration and water boreholes)	Should the Project require additional boreholes to be drilled for water abstraction, whether for exploration or water supply purposes, a borehole registration and drilling licence application would be required to be submitted to DWA prior to drilling.	Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR) - Department of Water Affairs (DWA)
Wastewater treatment, effluent discharge and reuse licence	Required for the proposed onsite advanced wastewater treatment facility, reuse and discharge of wastewater.	Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR) - Department of Water Affairs (DWA)
Permit for the clearing of land	Required where protected or controlled plant species are affected by vegetation clearing.	Ministry of Environment, Forestry and Tourism (MEFT) – local Forestry office (Keetmanshoop)

Permit or licence	Related activities requiring permits/licences	Relevant authority
National Heritage Council consent	A permit is required before any heritage resource found within the Project footprint is disturbed, removed or destroyed, under the National Heritage Act 27 of 2004. It applies only if heritage resources are found, and any find must be reported to the NHC.	National Heritage Council (NHC)
Consumer installation certificate for bulk fuel storage	Required for bulk fuel storage of more than 600 litres above ground, including handling and dispensing, in a rural area. Approximately 5 000 litres of diesel is proposed for onsite storage.	Ministry of Industries, Mines and Energy (MIME) – Department of Petroleum Affairs
Electricity generation licence	No generation licence is required under section 18(1)(a) of the Electricity Act 4 of 2007, because the plant of 500 kVA is in an area with no supply network and generates exclusively for own consumption on premises owned or occupied by the Proponent. Under section 18(4), generation must still comply with the rules and codes of the Electricity Control Board and with health, safety and environmental law. If it is 500 kVA or more: A generation licence is required under section 17(1) of the Electricity Act 4 of 2007 for the solar PV plant and backup generators.	Electricity Control Board (ECB)
Wayleave approval	Consent/approval to cross a district road (C19) with infrastructure in a rural area (Daweb Constituency).	Roads Authority Head office (Windhoek)
Business/operator NTB registration	Business/operators registration with NTB.	Namibia Tourism Board (Windhoek)
Registration, application and update information form Lodge	Registration of a new lodge within Namibia.	Namibia Tourism Board (Windhoek)

Permit or licence	Related activities requiring permits/licences	Relevant authority
Application form for star grading.	If the Lodge warrants an official star grading award by the NTB.	Namibia Tourism Board (Windhoek)

4 PROJECT DESCRIPTION

4.1 PROJECT OVERVIEW

The Project is a Greenfields tourism development intended to provide high-quality accommodation and tourism facilities within a remote desert environment. The site is characterised by arid conditions, sparse vegetation and unique desert landscapes that contribute to the area's high conservation and tourism value. The development footprint is estimated at approximately 18 500 square metres (m^2), comprising a total building area of approximately 0.65 hectare (ha) and approximately 1.87 ha of new internal roads and paths.

The Lodge comprises several distinct developed areas linked by internal access roads: the main lodge facilities, a spa and a staff village. The staff village is intended to house the Project's utilities infrastructure, including the solar photovoltaic (PV) plant, backup diesel generators and fuel storage, and the water and wastewater treatment infrastructure; this area may also serve as the contractors' camp during construction.

The infrastructure locations and layouts presented in this chapter reflect the concept design current at scoping stage and are intended locations only. Site-specific positioning of individual infrastructure components will be confirmed by the engineering and design team as the detailed design process progresses, and the Proponent will submit an updated package of drawings and site layouts to the Ministry for their records once these are finalised.

The Project site layout is shown in Figure 6 and Figure 7.

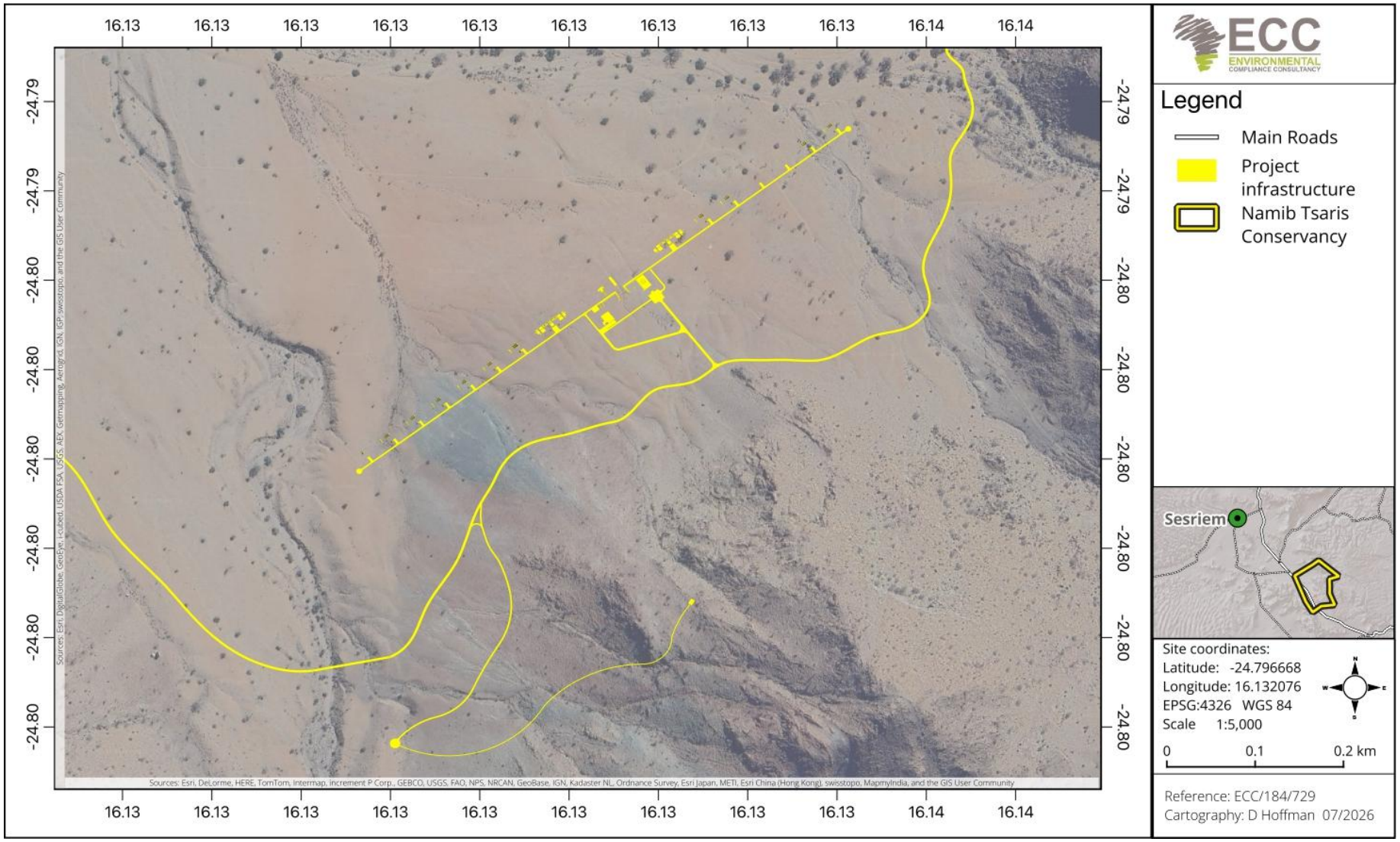


Figure 6 - Project site layout (Indicative)

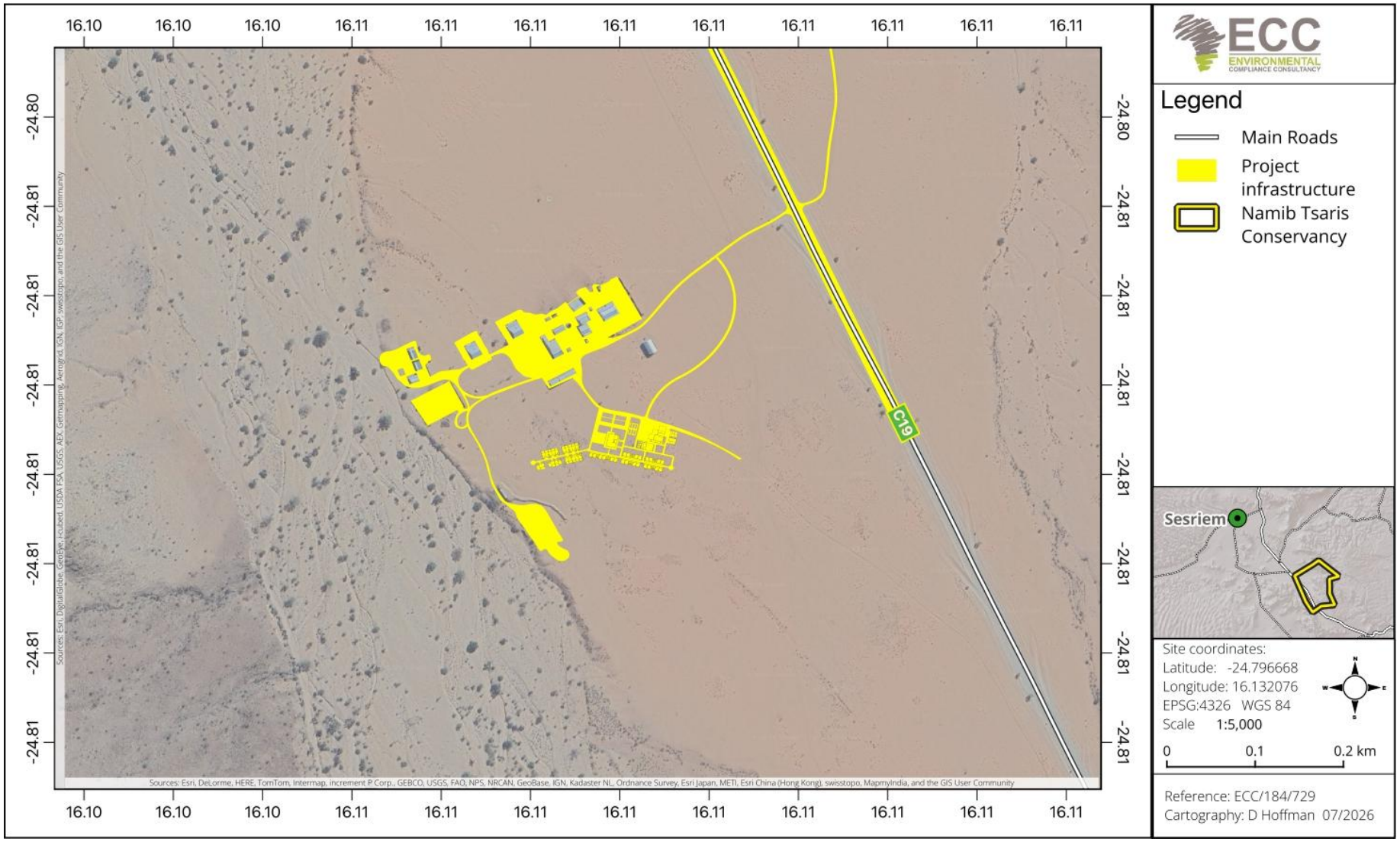


Figure 7 - Project site Staff Village layout (Indicative)

4.2 NEED FOR THE PROJECT

Tourism is a key driver of Namibia's economy, contributing significantly to employment, foreign exchange earnings and regional development. The proposed Greenfields luxury lodge will support the continued growth of the tourism sector in the Sossusvlei area by expanding high-quality accommodation options, creating employment opportunities, strengthening local business participation and enhancing the region's tourism infrastructure. Located within a private reserve, the development will support conservation objectives through the sustainable management of natural resources and the protection of biodiversity. The Project is also expected to contribute to both conservation and sustainable economic growth while showcasing Namibia's unique desert landscapes and tourism attractions.

During the construction phase, approximately 30 to 50 temporary jobs will be created, and during the operational phase, approximately 70 permanent jobs will be created.

4.3 ALTERNATIVES CONSIDERED

In terms of the Environmental Management Act, No. 7 of 2007 and the Environmental Impact Assessment Regulations, 2012 (Government Notice No. 30 of 2012), alternatives considered must be presented and analysed in the scoping plus impact assessment report. This requirement ensures that, during the design evolution and decision-making process, potential environmental and social impacts, costs and technical feasibility have been considered, leading to identification of the best option(s).

During the design phase, alternatives were considered in respect of the routing of internal linear infrastructure, staff accommodation, the placement of central support services, the technology used for power supply and for wastewater treatment, the floor plan sizing of the single and family units, roofing structural options and the utilisation of shared infrastructure with existing services on the reserve (i.e. existing staff village).

As other lodging facilities already exist on the reserve in specific locations, alternative sites for the Lodge itself were not considered feasible; a thorough assessment of alternative land uses for the site will nonetheless be conducted, particularly in consultation and collaboration with selected stakeholders.

The assessment of alternatives seeks to identify the most environmentally and socially acceptable option while meeting the objectives of the proposed development. Where required, specialist investigations, including groundwater assessments, will be undertaken to inform decision-making and minimise potential environmental impacts during the assessment phase.

4.4 NO-GO ALTERNATIVE

The proposed Project would not be implemented and the existing conditions within the Project area and the Namib Tsaris Conservancy would remain unchanged. Consequently, the employment, tourism, and conservation-related benefits anticipated from the Project, as described in section 4.2, would not be realised. Existing lodging facilities within the reserve would continue to operate under current conditions, with no additional employment opportunities, tourism-related activities, or conservation-linked benefits associated with the proposed development.

4.5 PROPOSED PROJECT ACTIVITIES

4.5.1 PROJECT PHASES

4.5.1.1 Planning phase

Construction is anticipated to commence in July 2027, with the Lodge expected to become operational in September 2028.

4.5.1.2 Construction phase

Construction of the Lodge and associated infrastructure will require limited clearing of vegetation within the development footprint to accommodate the guest accommodation units, wellness centre, restaurant, gym, reception block, swimming pools and staff village, together with internal access roads, parking areas and other associated services. Disturbed areas not required for the operational footprint will be rehabilitated following construction and any protected or controlled plant species affected will be dealt with under the necessary permits.

Construction will include the following:

- Standard earthworks for site preparation, road clearing, digging and trenching;
- Civils works required for the different facilities;
- Stormwater channeling;
- Standard concrete strip footings;
- External and partition walls of cavity cement blockwork combined with localised cast-in-situ feature walls, using locally sourced aggregates, sands and stone where possible, subject to approval by the local authorities;
- Screen walls of locally sourced and cut stone combined with reinforced masonry;
- Roofs of cast-in-situ concrete domed roofs and gutter beams, with sheet metal on steel and timber substructures; and
- Pergolas of cut or laminated eucalyptus beams on concrete stub columns.

All construction materials will be stored in designated areas to minimise environmental impacts.

The construction phase will require approximately 30 to 50 workers, sourced locally. On-site construction workforce facilities will include a contractors' camp, ablution facilities, workshops and canteens. Working hours are anticipated to be 7 am to 5 pm. Site access will be via existing roads, and new internal tracks will be created, no perimeter fence is currently planned.

Water for construction purposes will be abstracted from onsite borehole(s); estimated water demand during construction is approximately 57 000 litres per day, based on the hydrogeological assessment undertaken for the Project (Namib Hydrosearch, October 2025). A borehole abstraction and water use licence issued by the Department of Water Affairs (DWA) in terms of the Water Resources Management Act, 2013 (Act No. 11 of 2013) (WRMA) will be required, and the application for this licence can be lodged with DWA; however, DWA will only issue the licence once the Environmental Clearance Certificate for the Project has been obtained. Any new boreholes will need to be registered and licensed before drilling. Diesel generators and solar power systems may be used to provide backup and supplementary electricity supply during construction.

Fuels, oils, cleaning chemicals and other hazardous and hydrocarbon substances will be stored and used on site during construction, including diesel for the backup generator (approximately 5 000 litres), which will be stored in double-walled, self-bunded storage tanks. A consumer installation certificate will be required for the bulk fuel storage, handling and dispensing in terms of the Petroleum Products and Energy Act, 1990 (Act No. 13 of 1990) and its regulations.

Earthworks will include cut and fill, trench, road and bridge excavation, and excavation for building footings and platforms. Excavated material is expected to be reused on site, including as backfill below floor slabs and offsite disposal of excavated material is not anticipated. Stormwater controls will be implemented where required.

Construction will generate general waste, including general household waste from the workforce, and timber packaging and pallets associated with construction materials. Waste bins and designated, appropriately labelled storage areas will be provided on site, and all waste will be collected and disposed of off-site by an appointed waste contractor.

4.5.1.3 Operational phase

During operations, the Lodge will comprise 15 luxury guest accommodation units (13 single and 2 family units), a wellness centre and spa, gym facilities, a restaurant, a lounge and bar,

swimming pools and a staff village, together with associated supporting infrastructure and services. The Lodge is expected to accommodate up to 50 guests per day and will be supported by approximately 70 permanent staff (refer to section 4.2).

Water for domestic use and housekeeping will continue to be abstracted from the onsite borehole(s) under the water use licence obtained for the Project; estimated daily water consumption during operation is approximately 52 000 litres, based on the hydrogeological assessment undertaken for the Project (Namib Hydrosearch, October 2025).

Wastewater will be managed through a modular packaged sewage treatment plant with a capacity of approximately 40 kilolitres per day, sized for the anticipated peak hydraulic and organic load, comprising primary settlement, biological treatment, clarification and final disinfection. Treated effluent will be suitable for controlled irrigation and/or disposal via soak ways, subject to the conditions of the environmental approval. The plant will be designed, supplied and commissioned by a specialist supplier, with sludge management and servicing undertaken under a formal operations and maintenance plan and will be sited to avoid odour, noise and visual impacts on guest areas.

The treated effluent from this plant will also be disposed of via French drains, sized based on percolation tests, serving both the main guest and back-of-house facilities and the staff village. A total of sixty-five (65) toilets is planned across the Lodge, comprising twenty-five (25) at the main guest and back-of-house facilities and forty (40) at the staff village. A wastewater treatment, reuse and discharge licence issued by DWA in terms of the WRMA will be required for this facility. As an Environmental Clearance Certificate is a prerequisite for this licence to be issued, the application will only be submitted once the Environmental Clearance Certificate for the Project has been obtained.

Diesel generators and solar power systems will provide backup and supplementary electricity supply to the Lodge and associated infrastructure.

The Lodge will generate general domestic and recyclable waste during operation, including food waste, packaging materials and housekeeping waste. Waste bins and designated, appropriately labelled storage areas will be provided to ensure proper collection and management of this waste, and all waste will be collected and disposed of off-site by an appointed waste contractor.

4.5.1.4 Decommissioning phase

This phase will be conducted in a controlled, environmentally and socially responsible manner. The decommissioning phase will involve the safe closure and dismantling of the Lodge and associated infrastructure in accordance with best practice environmental and

regulatory requirements. Key activities will include the removal of the solar photovoltaic and backup diesel generator plant and associated fuel storage tanks, remediation of any contaminated soils, proper disposal of demolished materials and site rehabilitation for its next future use. This phase will be conducted in consultation with the Namib Tsaris Conservancy and the landowner.

5 ENVIRONMENT AND SOCIAL BASELINE

5.1 BASELINE DATA COLLECTION

Desktop studies relevant to the proposed Project form part of the current environmental and social assessment undertaken for the Project. No specialist field investigation was deemed necessary at the scoping stage; this is presented as a single scoping plus impact assessment report. The baseline described in this chapter is therefore based on desktop sources and observations made during the site visit, and it is the baseline against which the impacts in Chapter 7 are assessed. An infield visit was conducted by ECC on 29 July 2026 to assess the Project location, conduct a stakeholder engagement, acquire baseline information and determine potential significant impacts that could arise from Project activities.

The baseline studies in this chapter aim to establish the status of the receiving environment against which potential impacts (positive, negative and cumulative) associated with proposed Project can be assessed. Understanding the existing environmental and socio-economic conditions assists in identifying sensitive receptors and ensures that appropriate mitigation measures are incorporated into the Project design to avoid, reduce or manage potential adverse impacts.

This chapter describes the existing biophysical and socio-economic environment through a review of available literature, spatial data, aerial imagery and publicly available reports, supplemented by observations from a site inspection and stakeholder engagement activities. The defined baseline environment provides the framework within which potential changes resulting from the proposed Project can be measured and evaluated.

5.2 LAND USE

The Project site lies within the Namib Tsaris Conservancy, a private conservancy of approximately 9,700 ha situated between the Nubib and Zaris mountains in the Hardap Region. The site is centred on 24.796668°S, 16.132076°E and is reached from the C19 main road, which runs along the western side of the conservancy. The current land use of the site is conservation and tourism on freehold land.

The conservancy is already in tourism use. Existing lodging facilities operate on the reserve at other locations, and an existing base camp serves the reserve. The proposed staff village lies south of that base camp, on the opposite side of the C19 to the lodge and spa sites, which means Project land use will straddle a public main road, C19.

Surrounding properties are large freehold holdings that have moved from livestock and game farming to conservation and tourism. Adjoining land use is dominated by low density tourism

operations and conservation managed land rather than settlement or cultivation. Sesriem lies to the northwest and gives access to the Sossusvlei area of the Namib-Naukluft National Park, which forms the western boundary of the district.

The Project displaces no agricultural use and proposes no cultivation or livestock. The disturbance footprint is approximately 18,500 m², comprising approximately 0.65 ha of building area and approximately 1.87 ha of linear infrastructure, distributed across several separate sites within the 9,700-ha conservancy. The Project is consistent with the established and intended land use of the reserve.

5.3 GEOLOGICAL SETTING

5.3.1 GEOLOGY

The Project area forms part of the pro-Namib landscape immediately west of the Great Escarpment. The regional geological setting is characterised by the Nubib Mountains to the west and the Zaris Mountains to the east, with the intervening plain comprising extensive areas of aeolian and alluvial cover. The surrounding mountain ranges expose older geological formations, including granite, schist, dolerite and areas of Nama Group sediments. Lavas belonging to the Sinclair Sequence, including the Barby Formation, also occur in the wider region.

At the proposed service hub, solar PV plant and staff village, the underlying geology is largely concealed by aeolian sand and alluvial deposits derived from the surrounding higher ground. These deposits form the relatively open and gently sloping plain adjacent to the C19.

Towards the proposed main lodge and spa locations, the landscape becomes more dissected and is characterised by mountain foot slopes, shallow soils and drainage features. Bedrock is therefore expected to occur at relatively shallow depths in parts of these areas. The depth and nature of bedrock will be an important consideration for excavation, foundation construction and the placement of infrastructure.
The regional geological setting is shown in Figure 8. The mapped infrastructure positions are predominantly associated with Kalahari and Namib Sand cover, while the surrounding geological units become more prominent towards the mountain ranges. The geological information presented at this stage is based on regional mapping and available site investigation information and should be supplemented by site-specific investigations where required during detailed design.

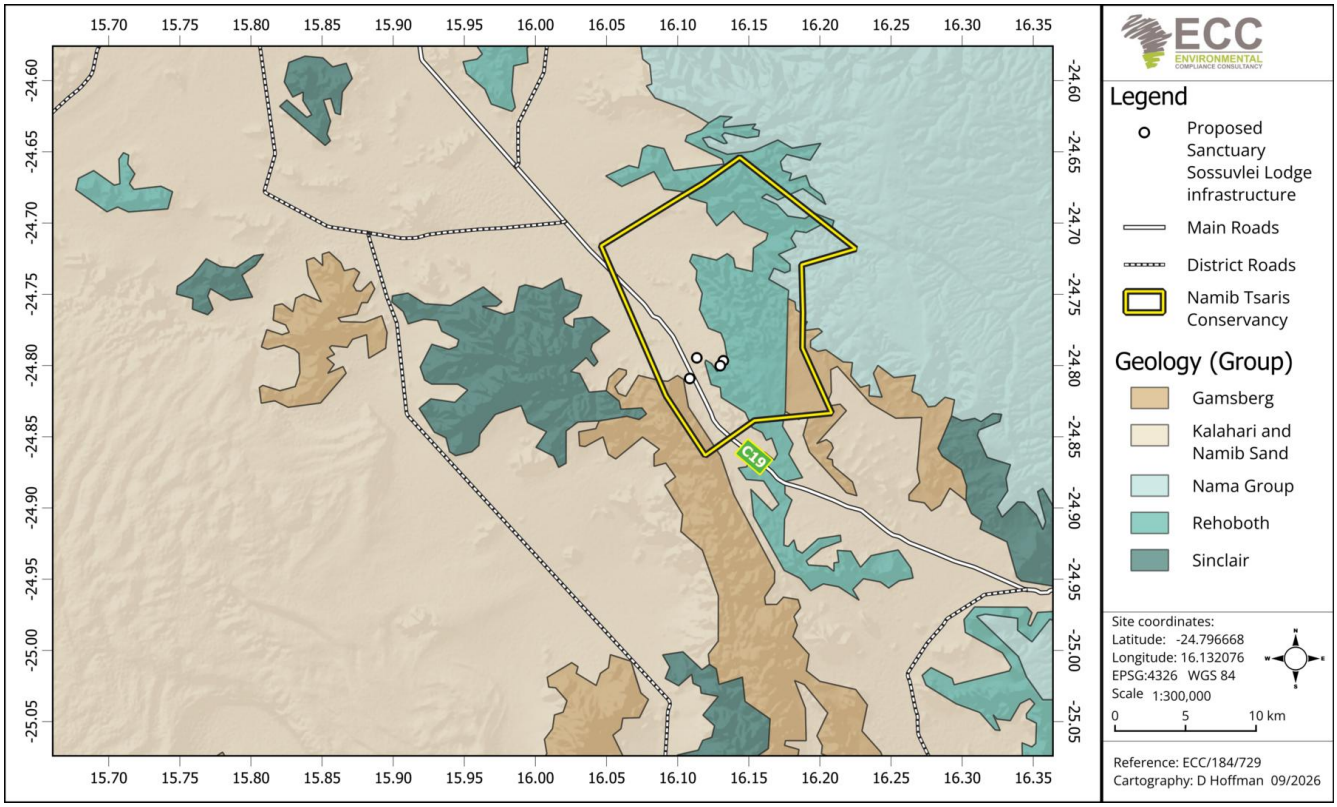


Figure 8 – Geological setting of the Project area, showing mapped geological groups relative to the Namib Tsaris Conservancy and the proposed infrastructure positions (Cartography: D Hoffman, ECC, 09/2026)

5.4 TOPOGRAPHY

The site lies on the pro-Namib plain between two ranges, and elevation rises from the plain in the west towards the higher ground in the east. The service hub, solar plant and staff village are proposed on the open plain next to the C19. The main lodge and spa lie approximately 3 km to the east, at higher elevation against the foot slopes and broken ground of the mountains.

The Project area lies between approximately 1,050 m above mean sea level in the central valley and approximately 1,570 m on the Tsaris Plateau. The wider landscape shows a much greater range in relief. The southern end of the Nubib mountains, west of the Project area, reaches approximately 1,979 m above mean sea level, while the valleys of the plains beyond the Project area fall below 900 m. Across this landscape, inselbergs and mountain foot slopes rise abruptly from otherwise flat gravel and sand plains.

Ephemeral drainage lines run off the high ground and cross the plain in a generally westerly direction towards the C19. There are no perennial rivers. Occasional summer thunderstorms produce limited runoff in otherwise dry gullies, and the ground absorbs it quickly. The new

access road shown in Figure 9 crosses these drainage lines between the C19 and the lodge site.

The topography has two direct consequences for the assessment. Because the lodge and spa sit against elevated broken ground, they will be more visible across the open plain to the west, which is addressed in section 5.10. Because infrastructure and the access road cross drainage lines, they are exposed to flooding and drainage effects, which are addressed in section 5.13.

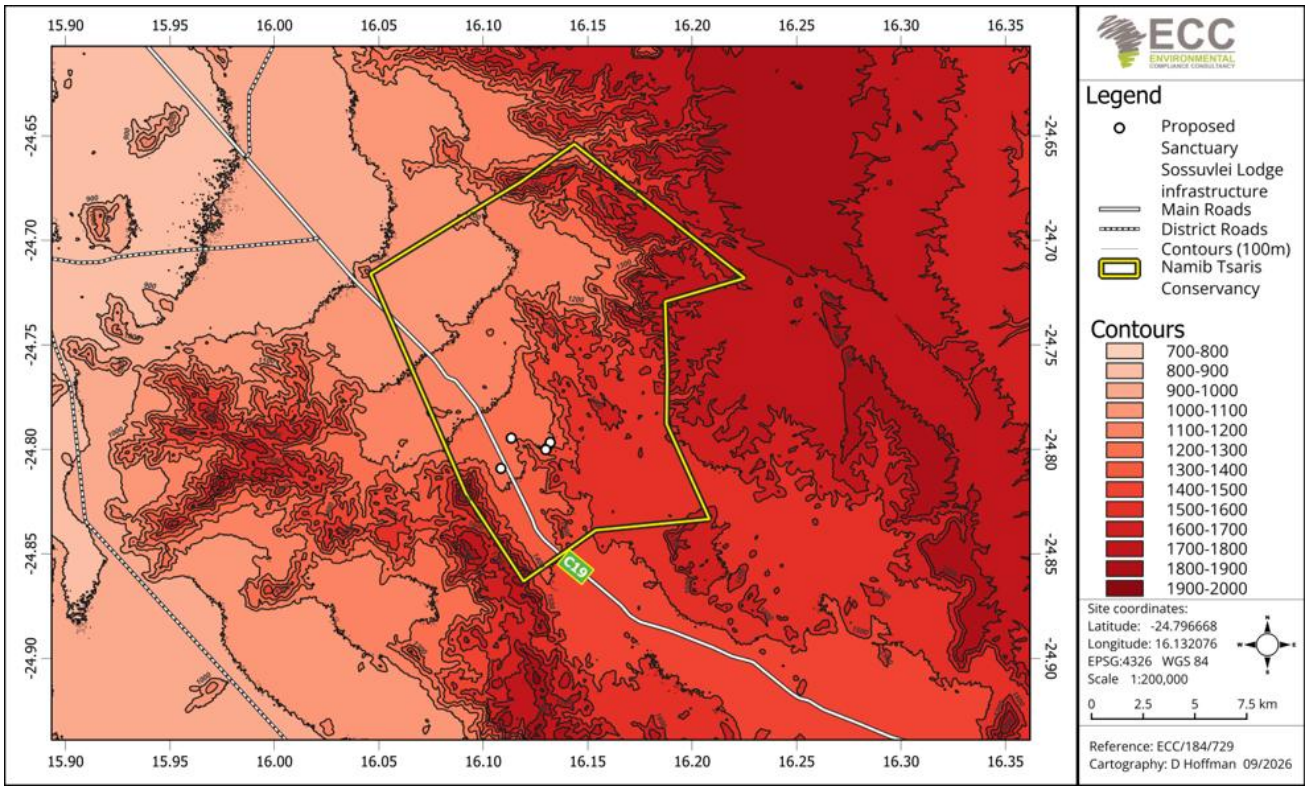


Figure 9 - Topography setting surrounding Project Site. (Cartography: D Hoffman, ECC, 09/2026)

5.5 HYDROLOGY AND HYDROGEOLOGY

The Project site is located within the broader Tsauchab River catchment, a region characterised by limited surface water resources and ephemeral drainage systems that flow only in response to significant rainfall events. Due to the arid climate and low annual rainfall, no perennial rivers, wetlands or other sensitive aquatic ecosystems occur within or immediately adjacent to the Project site.

No major drainage lines exist within the project area, but small drainage lines gather into intermediate drainage lines which feed into the ephemeral Tsauchab river. The Tsauchab river flows into Sesriem Canyon and Sossusvlei in good rainy seasons. Both areas form part of a major tourism corridor with high income in the South of Namibia. Rainfall in the area is

zero to low during average rainfall seasons and any pollution from the lodge could affect the tourism industry and any vegetation along the river. The Neuhof Reserve lies within the Greater Sossusvlei Namib Landscape.

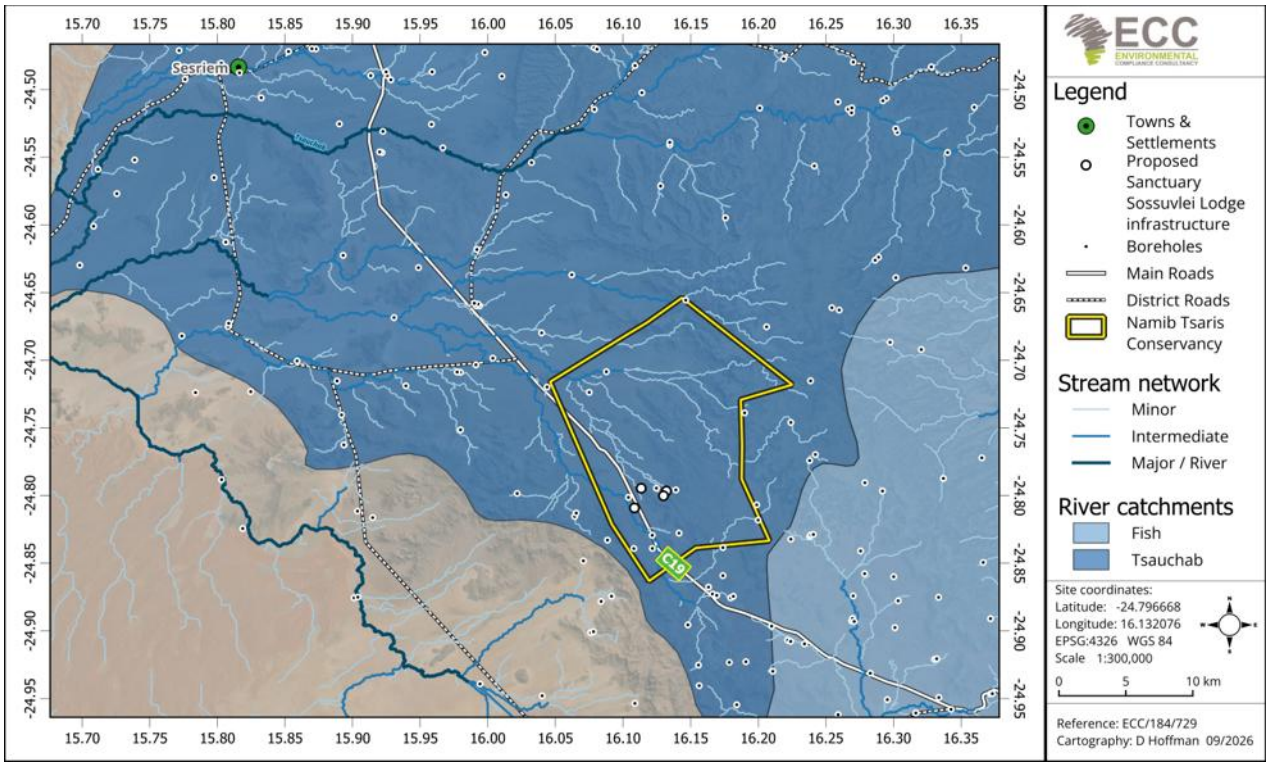


Figure 10 - Hydrological setting of Project site. (Cartography: D Hoffman, ECC, 09/2026)

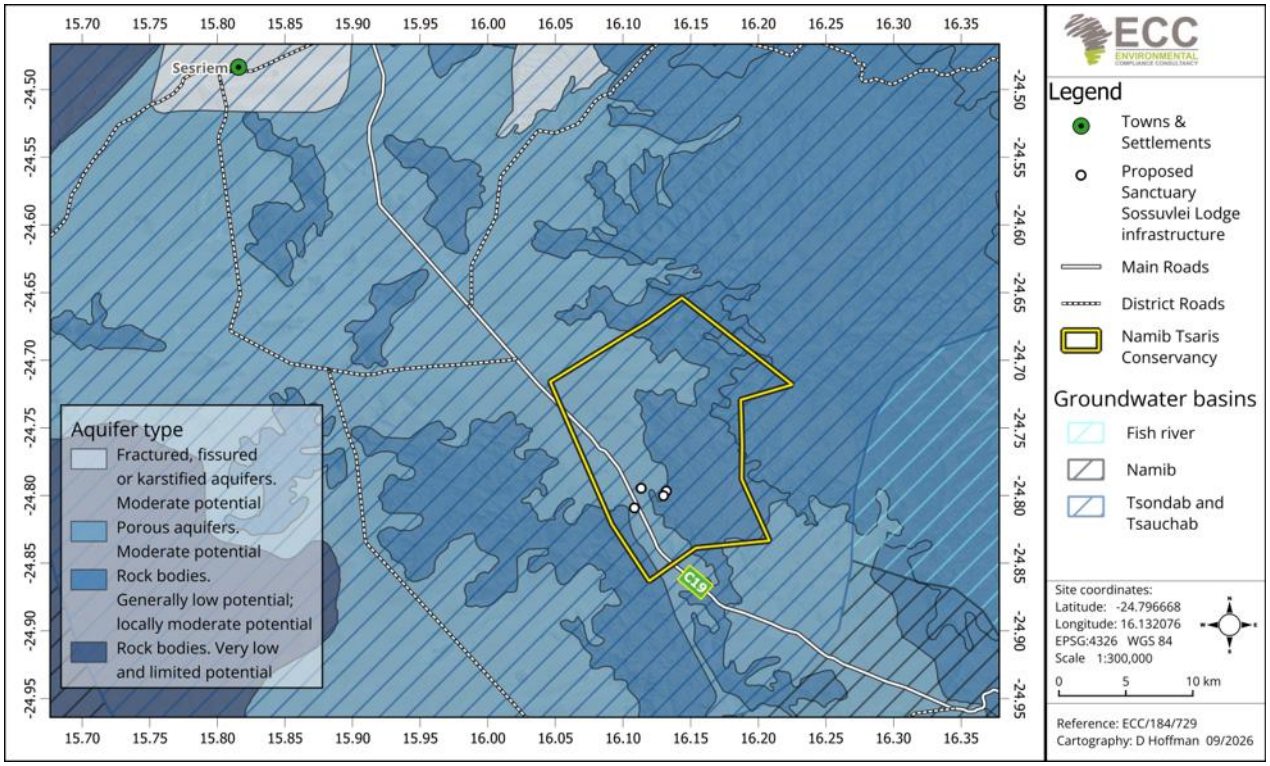


Figure 11 - Hydrogeology setting of Project site. (Cartography: D Hoffman, ECC, 09/2026)

5.6 Built Environment and Infrastructure

5.6.1 Infrastructure and Bulk Services

The site is not served by any municipal or bulk service. There is no reticulated water supply, sewer connection, waste collection service or grid electricity connection at the site, and the Project is therefore designed to operate independently of external services.

Water will be supplied from boreholes on the site, with associated storage infrastructure. Electricity will be supplied by a solar photovoltaic plant at the service hub, with backup diesel generation. Approximately 5,000 L of diesel will be stored on site in double walled, self-bunded tanks. Domestic wastewater will be treated on site through a modular treatment system with French drain disposal.

Waste will be separated at source, held in a dedicated storage area and removed to approved off site recycling or disposal facilities. Communication infrastructure will include telephone, radio and internet services. The conservancy already carries tourism infrastructure. Existing lodging facilities operate elsewhere on the reserve, and an existing base camp lies adjacent to the proposed staff village. Existing tracks provide access across the property.

5.6.2 TRAFFIC AND TRANSPORT

Regional access to the Project area is by the C19, a proclaimed gravel road running between Maltahöhe and Solitaire. The site lies approximately 85 km East of Maltahöhe. There is no surfaced road, no public transport service and no rail access in the Project area. Movement in the landscape is entirely by private and hired vehicle, by tour operator vehicle, and by light aircraft.

Traffic on the C19 is predominantly tourist traffic, with farm and lodge service vehicles making up the balance. Nationally, 45 percent of leisure tourists travel in private vehicles and 39 percent in hired vehicles, with 6 percent arriving by coach or minibus through tour operators, and 18 percent of tourists surveyed in the 2013 exit survey visited the Sossusvlei and Sesriem area. Traffic is strongly seasonal, following the occupancy pattern in the landscape, which peaks at 56 percent in August and 47 percent in July and falls to 17 percent in June.

Three characteristics of the receiving road environment bear on the assessment. The C19 is an unsurfaced gravel road, so vehicle movement generates dust and the road surface is sensitive to increased heavy vehicle loading. Drivers on it are largely visitors unfamiliar with gravel road conditions. And the landscape is substantially fence free, with contiguous unfenced land amounting to 52 percent of the landscape area, so game moves across the road, particularly at night. Existing internal access on the property is by gravel tracks serving the base camp, existing lodging facilities, boreholes and water infrastructure.

5.7 SOCIOECONOMIC BASELINE

5.7.1 GOVERNANCE

The Project falls within the Hardap Region, one of the fourteen regions established under the Regional Councils Act, No. 22 of 1992. Regional administration is exercised by the Hardap Regional Council, seated in Mariental. At constituency level the Project falls within Daweb Constituency, administered from Maltahöhe. Maltahöhe is a village council established under the Local Authorities Act, No. 23 of 1992, and is the nearest proclaimed settlement to the site, lying approximately 85 km to the east. The site is held under freehold title and lies within the Namib Tsaris Conservancy, a private conservancy of approximately 9,700 ha. No communal land or traditional authority jurisdiction applies to the Project area, so no consent under the Communal Land Reform Act, No. 5 of 2002 is required. Land management consent rests with the landowner and with the conservancy under its own management arrangements. The Hardap Regional Council, the Daweb Constituency councillor and the Maltahöhe Village Council are registered as interested and affected parties for the purposes of the public consultation process described in Chapter 2.

5.7.2 DEMOGRAPHIC PROFILE

The Hardap Region recorded a population of 106,680 at the 2023 Population and Housing Census, an increase of 34.2 percent since 2011, with the urban population growing by 65.7 percent while the rural population declined by 13.3 percent. The regional population density was 1.0 persons per km².

Daweb Constituency is the least populous and least densely settled constituency in the region. It recorded a population of 6,092 in 2023 across approximately 40,210 km², giving a density of 0.2 persons per km², and grew by only 5.6 percent between 2011 and 2023, the lowest growth of any constituency in the region. Households numbered 1,496 with an average size of 3.3 persons, and 44.0 percent were headed by women. The population of Maltahöhe was 3,464 in 2023, up from 2,379 in 2011, so more than half the constituency population lives in the village and the balance is dispersed across farms and lodges.

Household services in the constituency remain limited. 84.5 percent of households had access to safe drinking water, down from 91.0 percent in 2011, 47.2 percent had no toilet facility, 40.2 percent used electricity for lighting and 52.7 percent used wood or charcoal for cooking. Households living in improvised dwellings rose from 19.9 percent in 2011 to 41.4 percent in 2023.

Khoekhoegowab is the language most spoken in households in the region at 41.9 percent, followed by Afrikaans at 39.4 percent. Daweb recorded the lowest proportion of Namibian citizens of any constituency in the region at 92.6 percent, which is consistent with a farm and tourism labour force drawn partly from outside the country.

The demographic significance of the Project is therefore scale relative to a very small resident population. The Project will employ approximately 30 to 50 workers during construction and approximately 70 permanent staff during operation (section 4.2).A workforce of the order proposed, housed in a staff village on site, represents a material addition to the population of a constituency of this size, and the in-migration, service demand and social change addressed in Chapter 7 follow from that ratio rather than from the absolute numbers.

Table 6 - Socioeconomic baseline study summary of key indicators as of the 2023 Census (Namibian Statistics Agency, 2023)

Indicator	Hardap Region	Daweb Constituency
Population estimate 2023	106 680	6 092
Gender ratio	50.9% male and 49.1% female	52.5% male and 47.5% female
Average household size	3.6 persons	3.3 persons

5.7.3 HEALTH

Public health services in the region are administered by the Hardap regional directorate of the Ministry of Health and Social Services, based in Mariental (Ministry of Health and Social Services, 2026). Hospital care is provided at Mariental District Hospital, approximately 110 km east of Maltahöhe. The nearest primary health care to the Project is at Maltahöhe,

approximately 85 km east of the site, which has a health centre and a clinic. The operating hours of these facilities, and whether a doctor attends or an ambulance is stationed at either, could not be confirmed for this assessment. Emergency response planning for the Project should therefore not assume that a doctor or ambulance is available at Maltahöhe.

There is no health facility within the conservancy or on any neighbouring property. Existing lodges in the landscape rely on on-site first aid, private medical assistance and air evacuation.

Health indicators for the constituency are broadly in line with the region. The crude death rate in Daweb Constituency was 11.0 deaths per 1,000 population against a regional rate of 11.2 at the 2023 census. Across the region the leading recorded causes of death were illnesses not separately classified at 25.7 percent, followed by cancer at 11.3 percent, heart disease at 9.4 percent and lung disease at 8.0 percent. More than 90 percent of births in the region were attended by a medical doctor or a nurse or midwife, although in the predominantly rural constituencies, Daweb among them, more than 4.0 percent of births were attended by someone other than a medical professional, which reflects distance to a facility rather than choice. Of the population aged 5 years and above in Daweb Constituency, 19.3 percent reported some difficulty and 5.5 percent a lot of difficulty in performing an activity in at least one functional domain.

Household water and sanitation conditions are a material part of the health baseline. In Daweb Constituency 47.2 percent of households had no toilet facility and 84.5 percent had access to safe drinking water, down from 91.0 percent in 2011. Conditions of this kind set the context in which a staff village of the proposed size will operate, and they are the reason the wastewater treatment and potable water quality controls in the environmental and social management plan are health controls and not only environmental ones.
The Project area lies outside Namibia's malaria transmission zone, and no malaria risk is anticipated. This is consistent with high-resolution spatio-temporal risk mapping for Namibia, which classifies southern Namibia, including the Hardap Region, within the lowest-risk (“non-receptive”, Zone 4) category, with a mean predicted incidence of zero, and describes the southern part of the country as essentially malaria free (Cameron et al., 2024, Malaria Journal, 23:297). This classification should nonetheless be checked against the current Ministry of Health and Social Services malaria risk map before the final report is issued, as risk zones are reviewed periodically.

5.7.4 EMPLOYMENT

Wages and salaries are the main source of household income in Daweb Constituency at 52.5 percent, followed by old age pension at 16.7 percent, farming at 6.9 percent and non-farming business activity at 2.3 percent. The share of households dependent on farming fell from 10.6 percent in 2011, while pension dependency rose, which is consistent with a rural economy shedding agricultural employment. Of the constituency population aged 15 years and above,

49.6 percent were in the labour force at the 2023 census. Of those in the labour force, 77.4 percent were employed and 22.6 percent unemployed. The constituency unemployment rate is the lowest in the Hardap Region, where 32.1 percent of the labour force was unemployed. That figure should not be read as prosperity. The Daweb labour force is small in absolute terms, the constituency grew by only 5.6 percent between 2011 and 2023 against 34.2 percent regionally, and the regional rural population declined by 13.3 percent over the same period. Low measured unemployment in a constituency losing people is a sign of out-migration to Mariental and Rehoboth rather than of local job creation. Across the region, 96.1 percent of the potential labour force were discouraged jobseekers, meaning people who want work but have stopped looking, and this group is not counted in the unemployment rate.

Education levels constrain what local recruitment can deliver. The literacy rate for those aged 15 years and above in Daweb Constituency was 84.6 percent, the lowest of any constituency in the region against a regional rate of 90.5 percent. Of the regional population aged 15 years and above who had left school, 52.1 percent had completed primary education, 25.2 percent had completed secondary education, and 6.0 percent had completed tertiary education. Primary school enrolment for ages 6 to 13 years in the constituency was 95.0 percent and early childhood development attendance was 23.8 percent, the highest in the region, so the position is improving for children currently in school rather than for the present working age population.

Scale matters more than rate in a constituency this small. Applying the census age and labour force proportions to the constituency population gives a labour force of the order of 2,100 people, of whom approximately 480 were unemployed. Against that, the proposed 70 permanent operational posts and 30 to 50 construction posts are a significant addition to local employment, and the local employment benefit is one of the more substantial positive impacts in this assessment.

5.7.5 CRIME

Policing in the region is administered by the Namibian Police Force through its Hardap regional command, seated in Mariental. In the 2025/26 financial year the police recorded 4,374 criminal cases across the region. Rehoboth and Mariental recorded the highest number of reported cases and Derm and Sesriem the lowest. Sesriem is the station nearest the Project. The Hardap governor attributed the year's higher case count in part to increased law enforcement visibility and crime prevention operations rather than to a rise in offending.
Stock theft is the crime of most direct relevance to the receiving environment, as it is throughout Namibia's freehold farming districts. In the 2025/26 financial year 134 large stock and 907 small stocks were reported stolen in the region, with estimated losses exceeding N$3.5 million. Illegal hunting is recorded among the offences generated through police crime prevention work in the region.

5.7.6 ECONOMIC AND BUSINESS ACTIVITIES

The regional economy rests on livestock farming, with irrigated crop production concentrated around the Hardap Dam in the east of the region. Household income across the region is nevertheless dominated by wage employment rather than by farming. At the 2023 census, 56.1 percent of households in the region gave salaries or wages as their main source of livelihood, followed by old age pension at 15.9 percent, non-farming business activity at 3.4 percent, commercial farming at 2.1 percent and subsistence farming at 1.7 percent. In rural areas the wage share rises to 61.2 percent and the commercial and subsistence farming shares to 6.1 percent and 4.1 percent respectively.

The pattern in Daweb Constituency is the same, and the trend is more pronounced. Wages and salaries were the main source of income for 52.5 percent of households, old age pension for 16.7 percent, farming for 6.9 percent and non-farming business activity for 2.3 percent. The farming share fell from 10.6 percent in 2011 while pension dependency rose, which is consistent with a constituency losing agricultural employment without gaining an alternative local employer.

Formal business activity near the Project is limited to the tourism sector and to the services that support it. Maltahöhe, approximately 85 km east of the site, is the nearest settlement offering fuel, retail and accommodation. There is no industrial or commercial activity in the conservancy other than tourism operations.

Regional economic development spending is concentrated in the east of the region rather than near the Project. Investments reported for the 2025/26 period include N$10 million through the Southern Regional Electricity Distributor to electrify more than 800 households and N$75 million for the upgrading of informal settlements in Mariental, together with vocational and tertiary training facilities at Gibeon and Stampriet and 147 students enrolled at the Kai//Kanaxab Skills Training Centre. None of this infrastructure or training capacity lies within reach of the Project area.
Source for regional expenditure and training figures: Hardap governor's state of the region address, Mariental, June 2026, as reported by the Namibia Press Agency.

The Project lies within the Greater Sossusvlei Namib Landscape, the subject of a strategic environmental assessment of the tourism sector prepared for the Ministry of Environment and Tourism (SAIEA, 2014). All four Project components, the main lodge, spa, staff village and service hub, fall within the landscape area boundary. At the time of that assessment, land use across the landscape was dominated by conservation and non-consumptive tourism, and contiguous fence-free land amounted to 52 percent of the landscape area.

The southern region attracts approximately 20 percent of all visitors to Namibia, against 53 percent for Etosha. Of tourists surveyed in the April 2013 exit survey, 18 percent visited the Sossusvlei and Sesriem area. Visitors are predominantly self-drive: 45 percent of leisure tourists nationally travel in private vehicles and 39 percent in hired vehicles, with 6 percent arriving by coach or minibus through operators. Stated activity preferences are led by game viewing at 34 percent and landscape tourism at 25 percent, with hiking, 4x4 trails and hunting each at 6 percent or below, (SAIEA, 2014).

The landscape carried 31 tourism establishments with a combined 888 beds and camping berths, of which 15 were upper market establishments accounting for 597 beds. Average annual bed occupancy across the landscape was 29 percent, with upper market establishments at 30 percent. The Namibia Tourism Board recorded 914 beds in the Hardap Region with an average annual occupancy of 24 percent. Occupancy is strongly seasonal, peaking at 56 percent in August and 47 percent in July and falling to 17 percent in June. Average length of stay in the landscape was slightly under two bed nights per location, against a national average of approximately 1.25.

Tourism is the dominant economic land use in the landscape by a wide margin. Net national income was estimated at N$55 per hectare from tourism against N$4 per hectare from commercial livestock production, a difference of 14 times, and the sector supported an estimated 838 jobs across the landscape against 79 from livestock. Annual turnover across tourism facilities in the landscape was estimated at N$125.5 million with a wage bill of N$28.0 million in 2012 terms. The strategic environmental assessment attributes this to an arid environment at the margin of livestock viability combined with iconic tourism attributes.

The dark night sky is treated in the strategic environmental assessment as a tourism asset of the whole landscape rather than of the Namib Rand Nature Reserve alone. The assessment records that the reserve's International Dark Sky Reserve status raises the attraction of the entire landscape, that awareness raising is led by the reserve with the intention that local and regional development should not threaten that status, and that commercial development around Sesriem could produce sky glow degrading night views. Its desired future scenario for the landscape has other developments being careful with night lighting so that dark sky conditions extend more widely.

5.8 Heritage and Culture

Heritage resources in Namibia are protected under the National Heritage Act, No. 27 of 2004, administered by the National Heritage Council. The Act protects archaeological and palaeontological sites, objects and material, national monuments, and human remains and graves, and a permit from the Council is required to disturb, damage, excavate or remove protected material. A permit under section 46 of the Act (the application and issuing process

for which is set out in section 52) is required for these activities; where a site is affected by development, section 55(7) additionally requires the consent of the National Heritage Council before an archaeological or palaeontological site may be disturbed, and section 55(4) imposes a duty to report a chance find to the Council without delay. Protection applies whether a site is formally recorded, which is the reason a chance find procedure is necessary in an area that has not been surveyed.

The wider landscape carries recorded archaeological and historical heritage. The strategic environmental assessment for the Greater Sossusvlei Namib Landscape records significant rock art in the Naukluft area together with archaeological sites and surface remains of pastoral settlements, and a concentration of battlefield sites around the Naukluft Mountains relating to actions in the campaign against Hendrik Witbooi in the early 1900s. These sites lie within the Namib-Naukluft National Park to the west and northwest of the Project and not on the Project site.

The Namib Sand Sea, inscribed on the UNESCO World Heritage List in 2013, lies within the park to the west. It is inscribed for natural rather than cultural values, so its significance for this Project runs through the visual and sense of place assessment rather than through cultural heritage.

Palaeontological sensitivity attaches to the geology rather than to any recorded site. Nama Group strata in the region carry Ediacaran fossil assemblages of recognised international significance, and palaeontological material is protected under the National Heritage Act in the same way as archaeological material. Whether this sensitivity applies to the Project depends on whether any part of the footprint, the access road alignment or any borrow area sits on Nama Group rock rather than on the sand and alluvium of the plain, which is addressed in the geological setting section. Regional mapping indicates that the mapped Project infrastructure positions fall on the Kalahari and Namib Sand cover rather than on Nama Group strata, which crop out further east at the Zaris mountains (see the geological setting section above); this should nonetheless be verified against site-specific mapping and any borrow area before construction.

No archaeological, palaeontological or heritage survey has been undertaken for the Project, and none was required in the terms of reference confirmed by the competent authority. No recorded heritage site within the development footprint was identified from the desktop review.

The population of the constituency is predominantly Nama and Damara, with Khoekhoegowab and Afrikaans the languages most spoken in households in the region at 41.9 percent and 39.4 percent respectively. The wider area also carries a settler farming history, of which Duwisib Castle to the southeast is the best-known example.

5.9 NOISE

Namibia has no national ambient noise standard, and the site lies outside any local authority area, so no municipal noise regulations apply. The benchmark for this assessment is therefore the World Bank Group General Environmental, Health, and Safety Guidelines, section 1.7, applied in accordance with IFC Performance Standard 3.

The guidelines set one-hour LAeq limits, measured out of doors, of 55 dBA during the day between 07:00 and 22:00 and 45 dBA at night between 22:00 and 07:00 for residential, institutional and educational receptors, and 70 dBA by day and night for industrial and commercial receptors. The guideline values derive from the World Health Organization Guidelines for Community Noise, 1999. The guidelines further provide that noise impacts should not result in a maximum increase in background levels of 3 dB at the nearest receptor location off site. A receptor is defined to include hotels, parks and campgrounds as well as residences, so neighbouring tourism establishments and campsites in the landscape are receptors for the purposes of this assessment.

The baseline is expected to be exceptionally quiet. The Project lies on an unpopulated desert plain with no industry, no through traffic other than tourist vehicles on the C19, and no settlement within approximately 85 km. The NamibRand Nature Reserve, in the same landscape to the west and southwest, is recognised as Africa's first Wilderness Quiet Park, a designation that depends on acoustic conditions extending beyond its own boundary. No noise measurement has been undertaken for this Project, and no measured baseline exists for the site or the landscape.

Existing noise sources in the area are limited to vehicles on the C19 and internal tracks, existing lodge and base camp operations, aircraft overflights associated with scenic flights and lodge transfers, and natural sources including wind. Aircraft overflights and other highly intrusive intermittent noise are excluded when establishing background levels under the guidelines.

Receptors identified for the assessment are neighbouring tourism establishments and their guests, the existing base camp, the proposed staff village, users of the Namib-Naukluft National Park and the NamibRand Nature Reserve, and fauna.

5.10 VISUAL AND SENSE OF PLACE

The visual resource of this landscape is its principal tourism asset. The strategic environmental assessment records that the southern region is a destination for visitors seeking wide open spaces, beautiful landscapes and the peaceful ambience of the desert, marketed on the qualities of ruggedness, vastness and soulfulness rather than as an urban, hotel or shopping destination, and that nature-based tourism using the open spaces and

exceptional scenery holds a strong comparative economic advantage over any other land use here.

Two of the designations in the landscape rest directly on visual and experiential qualities. The Namib Sand Sea was inscribed on the UNESCO World Heritage List in part because it contains natural phenomena of exceptional beauty and aesthetic importance, with the dune landscape enhanced by exceptionally clear visibility which also produces the quality of the night sky views. The NamibRand Nature Reserve holds gold tier International Dark Sky Reserve status and recognition as Africa's first Wilderness Quiet Park. Visual intrusion, sky glow and noise are the three ways in which development outside those boundaries can diminish what is inside them.

The receiving visual environment is an open pro-Namib plain framed by the Nubib mountains to the west and the Zaris mountains to the east, with inselbergs and mountain foot slopes rising abruptly from flat gravel and sand plains. Sight lines are long and largely uninterrupted, and the absence of vegetation cover provides almost no screening. Fence removal across the landscape has produced contiguous fence-free land amounting to 52 percent of the landscape area, which reinforces the unbroken character of the view.

Existing visual modification in the immediate area is limited to the C19 and internal gravel tracks, the existing base camp, existing lodging facilities elsewhere on the reserve, and boreholes and water infrastructure. There is no settlement, no powerline and no industrial structure in the view.

Visual receptors are guests at neighbouring tourism establishments, visitors travelling the C19 between Sesriem and Maltahöhe, visitors within the Namib-Naukluft National Park and the NamibRand Nature Reserve, passengers on scenic flights over the landscape, and residents of the staff village and base camp.

The Project's own visibility differs between its two components. The service hub, solar plant and staff village sit on the open plain immediately adjacent to the C19 and are the elements most visible to road users at close range. The main lodge and spa sit approximately 3 km to the east against elevated broken ground of the mountain foot slopes, which raises their visibility across the open plain to the west, including from the direction of the park and the NamibRand Nature Reserve. Elevation increases the distance over which a structure breaks the skyline and reduces the effectiveness of screening.

Sense of place in the landscape is already under pressure from tourism itself. The strategic environmental assessment finds that the desert experiences visitors come for, including solitude, wilderness and silence, are jeopardised by the very visitors who come to enjoy them, that this is a fairly significant negative impact capable of threatening visitor numbers, and that

the impact of the high growth scenario on sense of place is negative overall but can be substantially reduced through careful planning and management of growth points.

5.11 LIGHTING AND VISUAL MARKERS

This section describes existing artificial light sources and man-made vertical markers in the receiving environment, and the elements the Project would introduce. The night sky as a resource, and the designations that attach to it, are addressed under visual and sense of place.

There is effectively no artificial lighting in the baseline. The site has no grid electricity connection and there is no distribution line, street lighting or illuminated signage in the vicinity. Artificial light in the area is limited to exterior lighting at existing tourism establishments and the base camp, which the strategic environmental assessment records as being kept to a minimum under the lighting guidelines applied across the landscape, and to vehicle headlights on the C19 and internal tracks. The nearest proclaimed settlement lies approximately 85 km to the east.

Vertical man-made markers are similarly absent. There is no powerline, pylon, communications mast, tower, water tower or beacon within the view from the Project area. The built elements present are single storey farm and lodge structures, borehole headworks and windpumps, gravel tracks, and gates and signage at property accesses off the C19. Fence removal across the landscape has left contiguous fence-free land amounting to 52 percent of the landscape area, so fencelines are not a consistent feature of the view.

The Project introduces artificial lighting at the guest units and spa, along walkways, at the staff village, at the utility hub and as security lighting, together with vehicle headlights on the new access road and at the C19 crossing. It introduces no powerline or pylons, because electricity is generated on site from the solar photovoltaic plant with diesel backup, so the linear visual marker that a grid connection would create is avoided.

5.12 BIOPHYSICAL ENVIRONMENT BASELINE

5.12.1 CLIMATE AND METEOROLOGY

The Project area lies in the pro-Namib on the eastern margin of the Namib Desert, at elevations between approximately 1,050 m in the central valley and approximately 1,570 m on the Tsaris Plateau. The area is classified as hyper-arid under the UNEP (1997) classification, with hot summers, cool winters, low and erratic summer rainfall, and potential evapotranspiration exceeding rainfall in every month of the year.

Rainfall falls predominantly as convective summer storms in the late summer months, with the period from May to September generally dry. The area lies on the edge of the winter rainfall zone and occasionally receives a few millimetres of winter rain. Mean annual rainfall for the Project area is 76 mm, derived from the CHIRPS daily rainfall record for 1980 to 2024, with a maximum of 167 mm and a minimum of 29 mm over that period. Potential evapotranspiration is 2,300 mm per year. Interannual variability is extreme, with recorded annual totals varying by a factor of more than five around the mean, so the distribution of rainfall is more significant for the Project than the average. Rainfall of this order against evapotranspiration of 2,300 mm per year means that no surface water is retained, that runoff in the ephemeral drainage lines is short lived, and that groundwater recharge is episodic rather than annual.

As shown in Figure 12, average daily maximum temperatures range between approximately 38°C and 42°C during the summer months, with the hottest months occurring between December and March. During winter, average daily maximum temperatures range between 4°C and 25°C, while minimum temperatures may drop below 0°C during June and July. Figure 12 illustrates the long-term monthly average temperature and rainfall for the Project area, confirming the hyper-arid conditions, with rainfall concentrated in the late summer months and prolonged dry conditions through winter.

The prolonged dry season, elevated summer temperatures and sparse vegetation cover together increase the likelihood of dust generation during construction, particularly during clearing, excavation and earthworks, and along the unsurfaced access road.

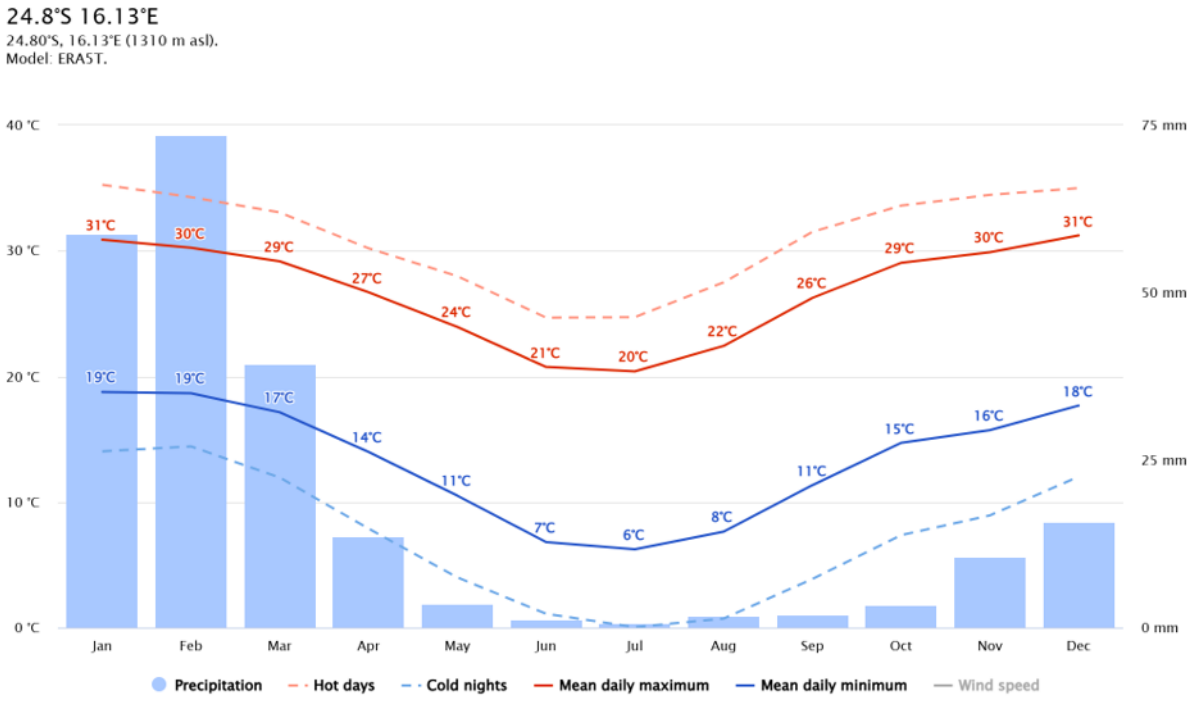


Figure 12 - Mean monthly temperature and precipitation, Sossusvlei Project area. (Source: Meteoblue, 2026)

The prevailing wind conditions for the Project area are illustrated in Figure 13. Winds occur predominantly from the Northeast and East throughout the year, with lower frequency winds from other directions. Average wind speeds are moderate, ranging between approximately 11 km/h and 15km/h, with the strongest winds, up to 77km/h, occurring between October and March.

The prevailing wind direction determines the dispersion of dust generated during construction. Dust may be carried towards the C19, towards neighbouring tourism establishments and towards the ephemeral drainage lines, depending on the prevailing direction at the time. The absence of vegetation cover and the open, unscreened character of the plain mean that dust disperses further here than in vegetated terrain, so dust deposition on vegetation and on the surfaces of neighbouring establishments is a foreseeable effect rather than a remote one. Dust suppression measures will be required throughout the construction and will be further discussed in the ESMP.

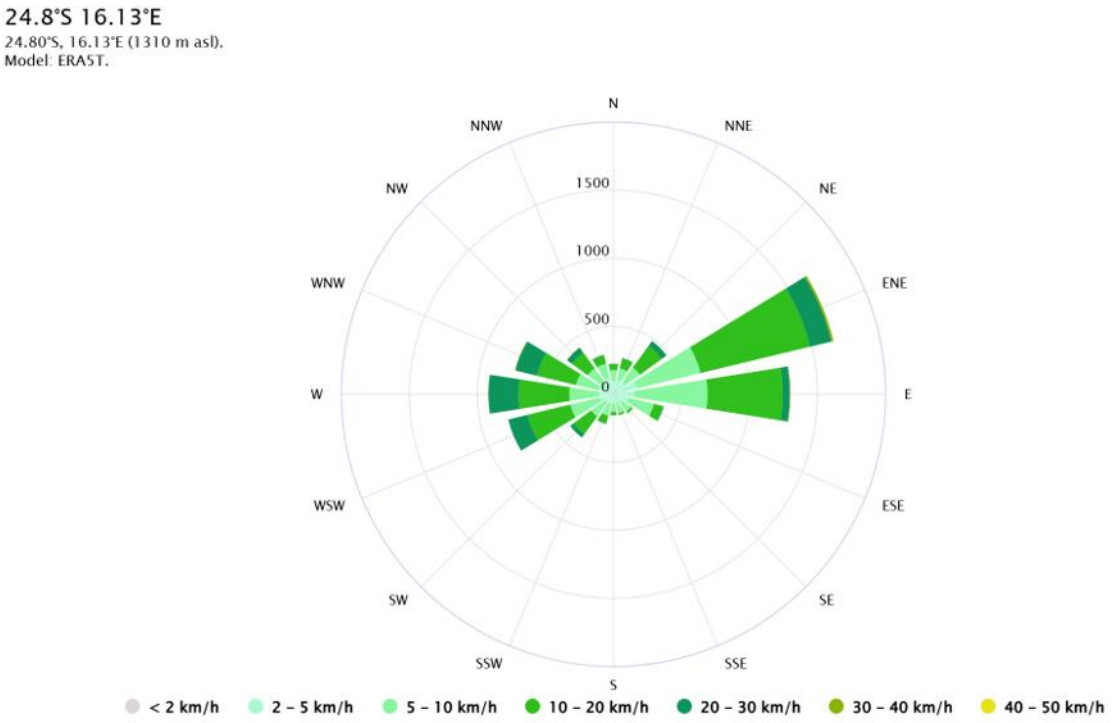


Figure 13 - Average wind direction and speed over the pro-Namib area (Source: Meteoblue, 2026)

Climate and weather data for the proposed Project site (24.796668°S, 16.132076°E) presented in Figure 12 and Figure 13 are compiled from published historical records for the Sossusvlei area (Meteoblue, 2026), consistent with the rainfall and evapotranspiration figures given above. Wind in the wider Namib-Naukluft landscape follows a mixed, multi-directional pattern rather than a single dominant direction: summer winds intensify with the land-sea temperature gradient, while winter brings warm, strengthening easterly ("berg") winds descending from the escarpment across the desert, and the star dune forms at Sossusvlei itself record a further influence from southerly and westerly airflow (Atlas of Namibia, 2022).

5.12.2 CLIMATE CHANGE

Namibia, in common with the rest of southern Africa, is subject to a long-term rise in average temperature. A local, multi-decade instrumented or modelled temperature trend specific to the Project site has not yet been sourced; Data analysis of global records reveals a pronounced upward trend in average temperatures, indicative of a broader global warming pattern. According to Lindsey and Dahlman (2024), the Earth's temperature has increased by an average of 0.06°C per decade since 1850. However, since 1982, this rate has surged to over three times faster, reaching 0.36°C per decade, notably, 2023 stood out as the warmest year on record globally, as traced back to 1850.

5.12.3 SOIL

Soils within the Project area are generally shallow, coarse-textured and skeletal, consistent with the mapped Calcaric Regosols and Colluvic Skeletic Leptic Regosols (Figure 14). The available borehole information indicates that these soils generally form a relatively thin surficial layer over weathered or competent bedrock rather than a deeply developed soil profile.

On the Tsaris Plateau in the east, at elevations ranging from approximately 1,539 m to 1,569 m above sea level, the surficial cover generally comprises approximately 1 m to 3 m of granitic soil, gravelly alluvium or calcareous sand over weathered granite, dolerite or schist. At the Magistral borehole, however, weathered clay-rich granite extends to approximately 13 m below ground level. In the central valley to the west, at elevations ranging from approximately 1,050 m to 1,243 m above sea level, surficial deposits are comparatively thicker and include calcrete-cemented gravel and boulder conglomerate overlying granite (Namib Hydrosearch CC, 2025).

The variation in soil depth and underlying geological material has implications for construction activities, particularly excavation, foundation design, road construction and the management of excavated material. Areas with shallow soils and exposed or near-surface bedrock may require more extensive excavation or rock-breaking, while areas underlain by deeper unconsolidated material may present different bearing-capacity, erosion and drainage characteristics.

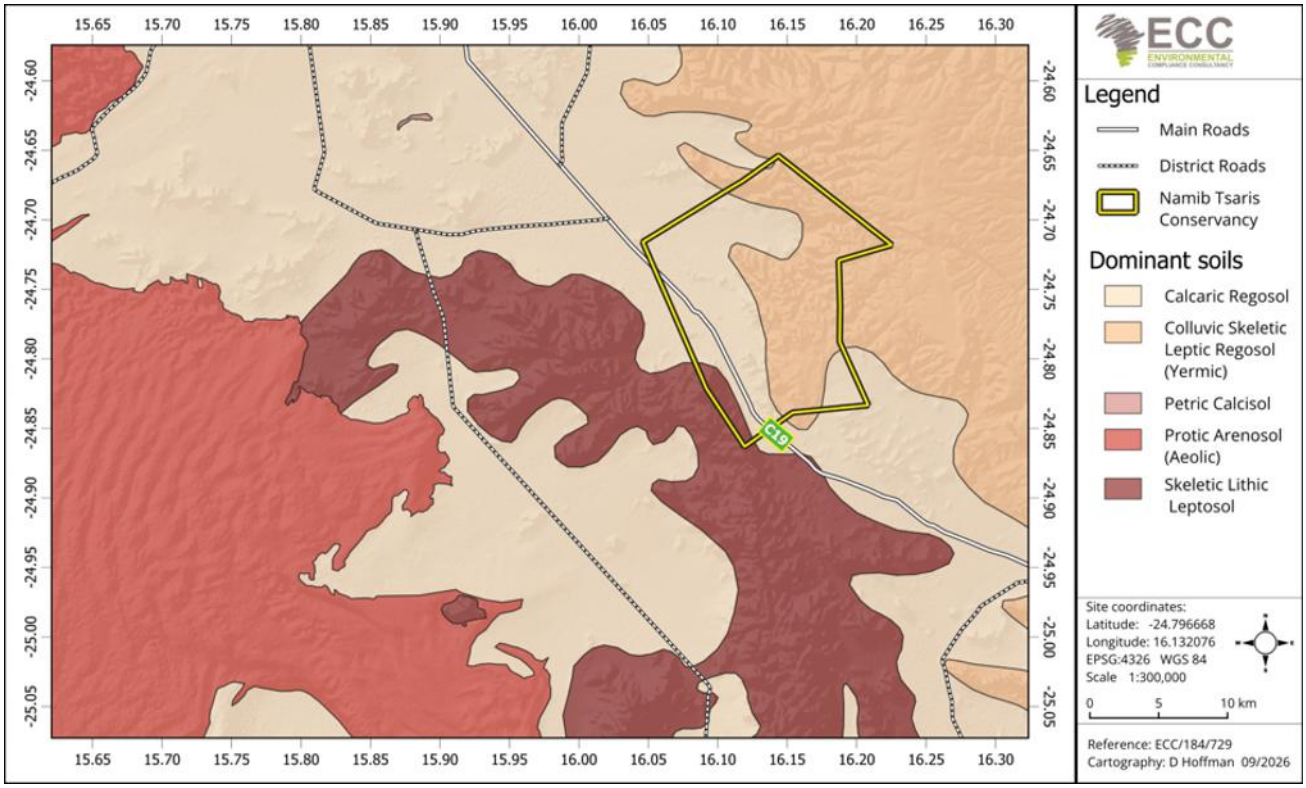


Figure 14 - Dominant soil types across the Project area and wider landscape, from Atlas of Namibia (2022) mapping (Cartography: D Hoffman, ECC, 09/2026)

5.13 WATER

No perennial surface water occurs in the Project area. Surface water is limited to ephemeral flow in drainage lines after rainfall events.

The Project area lies on the plain between the Tsaris Plateau on its eastern boundary and the ridge of the Nubib mountains on its western boundary. The land surface slopes generally northward at approximately 2 percent. Several ephemeral rivers drain the area from the east and south into the Aub River at the northern boundary of the farm. The Aub River feeds the Tsauchab River to the north, which terminates at Sossusvlei.

The Project area therefore drains into the Namib Sand Sea World Heritage property by way of the Tsauchab River. The stream network and catchment context are shown in Figure 15; the Project area falls within the Tsauchab River catchment, which the ephemeral drainage lines on site feed via the Aub River.

The new access road crosses ephemeral drainage lines between the C19 and the mountain foot slopes.

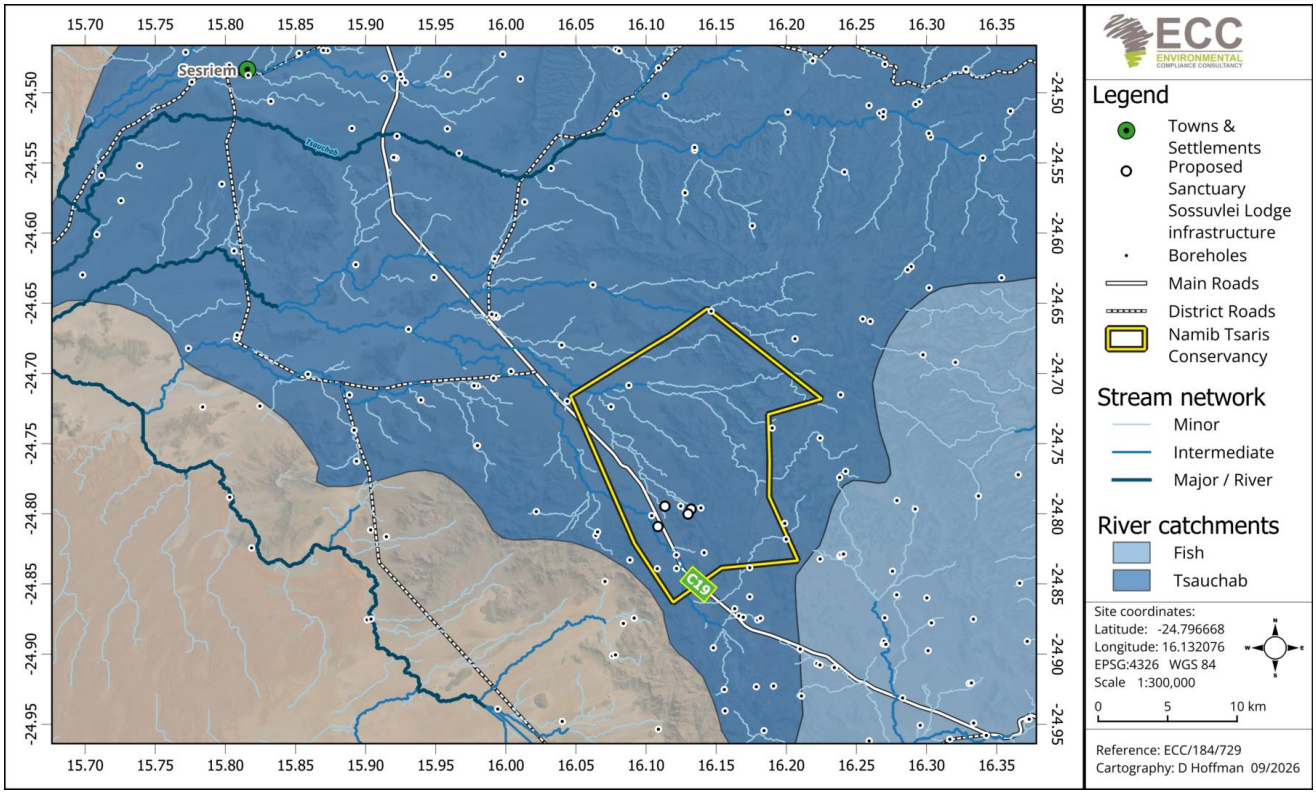


Figure 15 – Stream network and river catchments in the Project area and wider landscape (Cartography: D Hoffman, ECC, 09/2026)

5.13.1 GROUNDWATER

The Project area lies within the Tsondab and Tsauchab groundwater basin (Figure 16), where porous aquifers of moderate potential predominate in the vicinity of the mapped infrastructure positions, within a wider landscape otherwise dominated by rock bodies of generally low to very low potential; this is consistent with the borehole yields obtained in the hydrogeological investigation described below.

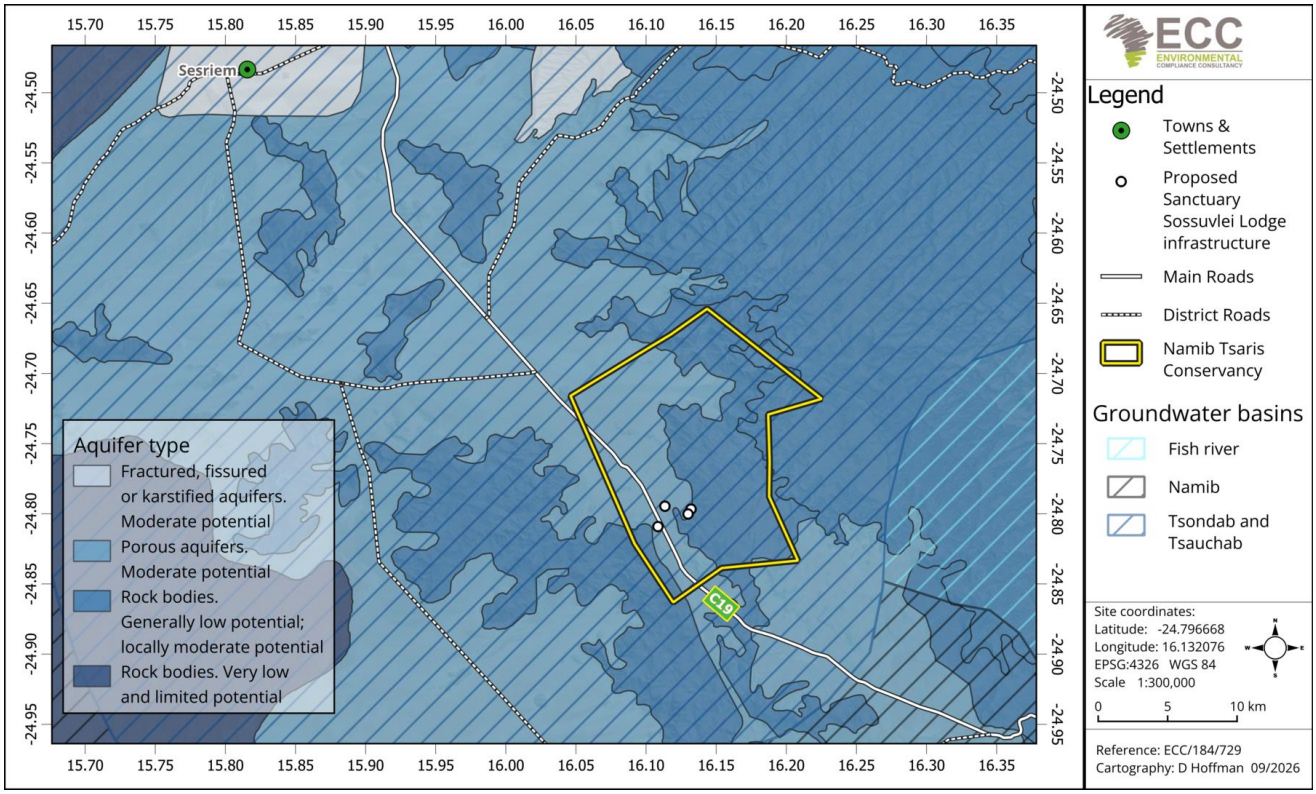


Figure 16 – Groundwater basins and aquifer type in the Project area and wider landscape (Cartography: D Hoffman, ECC, 09/2026)

Water demand for the lodge is calculated in the hydrogeological report based on 30 guest beds and 66 staff, applying an average per capita figure of 386 litres per person per day from Grobler and Mearns (2020). This gives 38 m³/day, or 42 m³/day including a 10 percent contingency. The minimum and maximum per capita figures in the same publication give a range of 18 m³/day to 60 m³/day.

Operational demand, including existing domestic and stock watering of approximately 10 m³/day based on 2024 monitoring, is estimated at 52 m³/day. Construction phase demand is estimated at 27 m³/day for 70 persons plus 20 m³/day for construction work, giving 57 m³/day including existing demand, over a period of approximately one year.

Peak demand of 57 m³/day is therefore approximately 21 percent of the recommended maximum abstraction capacity of 270 m³/day. The hydrogeologist nevertheless describes the demand as substantial for a hyper-arid setting and concludes that water demand management and water reclamation will be essential for sustainability, and that production pumping should be distributed across boreholes at low rates over a large area rather than concentrated.

5.14 BIODIVERSITY

Namibia's protected areas, freehold conservation land, communal conservancies and private reserves together conserve a substantial part of the country's biodiversity, and the Namib is notable less for species richness than for endemism and for specialised adaptation to aridity. The Project lies in the pro-Namib, the transitional zone between the sand sea to the west and the escarpment to the east, within a landscape managed almost entirely for conservation and non-consumptive tourism.

Habitat in the Project area follows the topography. The plain between the Nubib mountains and the Tsaris Plateau carries sparse dwarf shrub and grass cover on shallow sandy and gravelly soils. The mountain foot slopes and rock outcrops carry a distinct assemblage associated with rock crevices and shade. The ephemeral drainage lines are the most productive habitat in the landscape, supporting larger trees and denser cover, and function as movement corridors and as refuges during dry periods. All three occur within the development footprint.

Biome and vegetation type mapping (Atlas of Namibia, 2022; Figure 17) places the Project area within the Desert/dwarf shrub transition vegetation type, consistent with the three habitat units described above; the wider landscape grades into dwarf shrub savanna toward the escarpment and southern desert vegetation toward the sand sea.

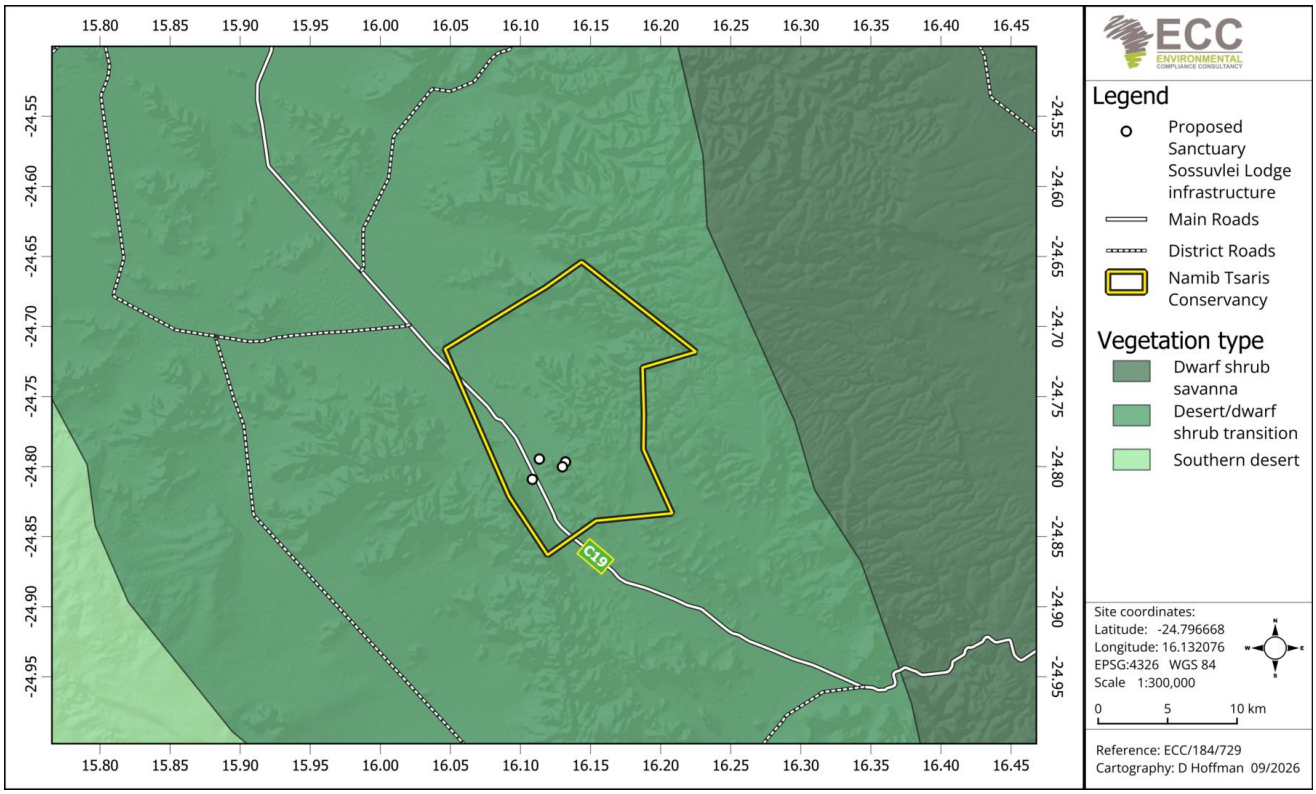


Figure 17 – Vegetation type across the Project area and wider landscape, from Atlas of Namibia (2022) mapping (Cartography: D Hoffman, ECC, 09/2026)

5.14.1 FLORA

Figure 17, (vegetation type), shows the site falls within the Desert/dwarf shrub transition unit, between Southern desert to the west (toward the Namib Sand Sea) and Dwarf shrub savanna to the east on the plains, featuring low, open shrubland with a sparse ephemeral grass layer and trees confined to drainage lines.

Succulent Karoo and Nama Karoo biomes occur on the inselbergs and mountains. The vegetation marks this area as part of an arid center of endemism and not just generic desert scrub, as it lies within the ecotone between the Succulent Karoo and Nama Karoo biomes.

Namibian endemism is associated with isolated mountains and localised substrates (Craven and Vorster, 2006), which describes the hills hosting the lodge and spa, so the grid-level figure likely understates local endemic potential. Inselbergs were found to include Jamesbrittenia hereroensis (endemic) (Figure 18), Petalidium setosum (near endemic), and flowering boesmanskers (Monsonia species). Moringa ovalifolia, Aloidendron dichotomum, Boscia foetida and Euphorbia virosa, together with a range of other trees, shrubs and grasses were surveyed across the plains, slopes, inselbergs and river zones. Moringa ovalifolia and Aloidendron dichotomum are both protected plant species under Schedule 9 of the Nature Conservation Ordinance 4 of 1975.

The endemism and species richness figures below are drawn from 25 km grid datasets. No systematic plant species list has been compiled for the footprint, and the walk-over observations above are not a complete inventory. No ecological specialist study was identified as required at the screening stage.

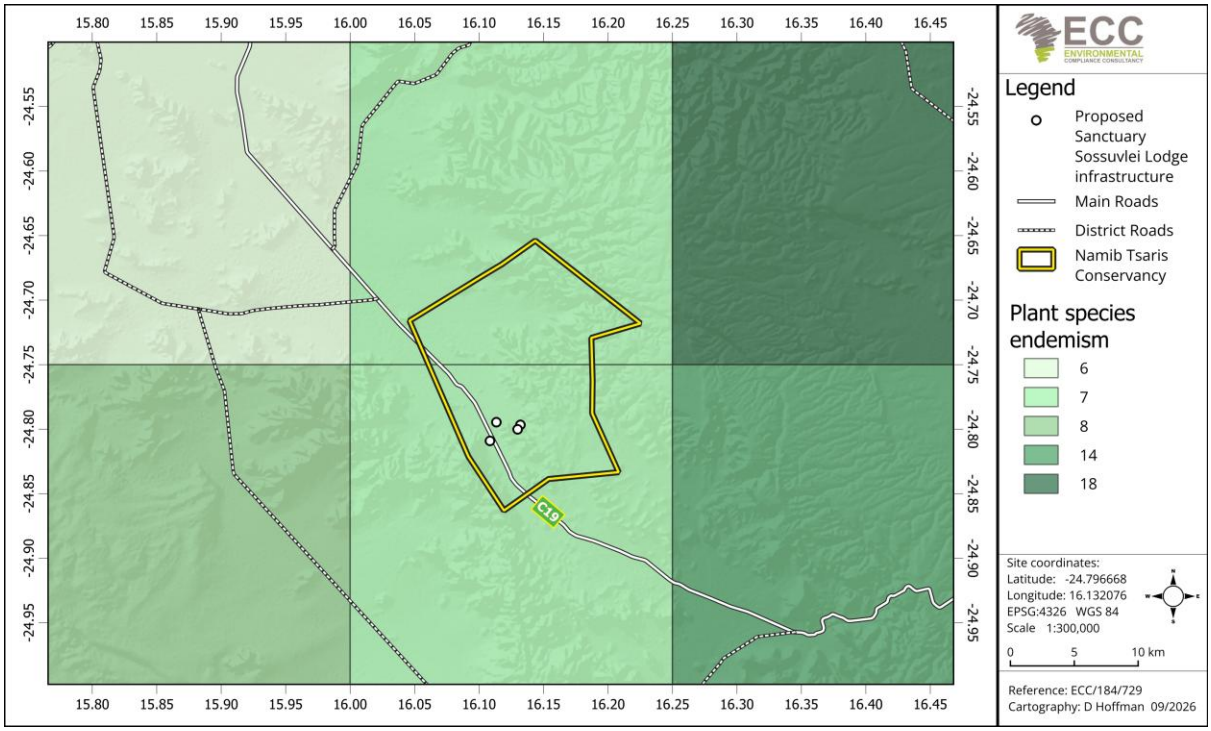


Figure 18 - Plant species endemism (Cartography: D Hoffman, ECC, 09/2026)



Figure 19 - Existing vegetation within the Project site



Figure 20 - Existing Vegetation

5.14.2 FAUNA SPECIES

Game populations across the landscape are substantial and are counted annually by the properties in it. The Nam Place baseline survey for the landscape recorded, for the NamibRand Nature Reserve, populations of approximately 7,296 gemsbok, 6,069 springbok, 765 ostrich, 550 mountain zebra, 320 plains zebra, 177 red hartebeest, 60 steenbok, 41 kudu and 6 giraffes.

Of these, Hartmann's mountain zebra (Equus zebra hartmannae) is listed as Vulnerable on the IUCN Red List, the population trend increasing but sensitive to drought (Gosling et al., 2019). Giraffe (Giraffa camelopardalis) is listed as Vulnerable at the global species level (Muller et al., 2016), although Namibia's population forms part of a regionally stable, better-monitored lineage, although giraffe taxonomy below species level remains unsettled. No confirmed predator records exist for the footprint, but leopard (Panthera pardus, Vulnerable, Stein et al., 2020) and brown hyena (Parahyaena brunnea, Near Threatened) are known from the wider landscape and are plausible given the inselberg terrain; leopard is specially

protected game under Schedule 3 of the Nature Conservation Ordinance 4 of 1975. Black-backed jackal (Lupulella mesomelas) and bat-eared fox (Otocyon megalotis) are found on the plain.

For reptiles, Figure 21 shows the conservancy falls within the higher of two mapped bands (13 to 16 endemic species per grid unit), and the map marks two highly localised endemics nearby: the Sossus gecko (Pachydactylus etultra), described from the NamibRand Nature Reserve landscape immediately west of the site and assessed as Least Concern (Branch et al., 2011; IUCN, 2020), and Campbell's girdled lizard (Namazonurus campbelli), recorded further south toward the escarpment, outside the footprint.

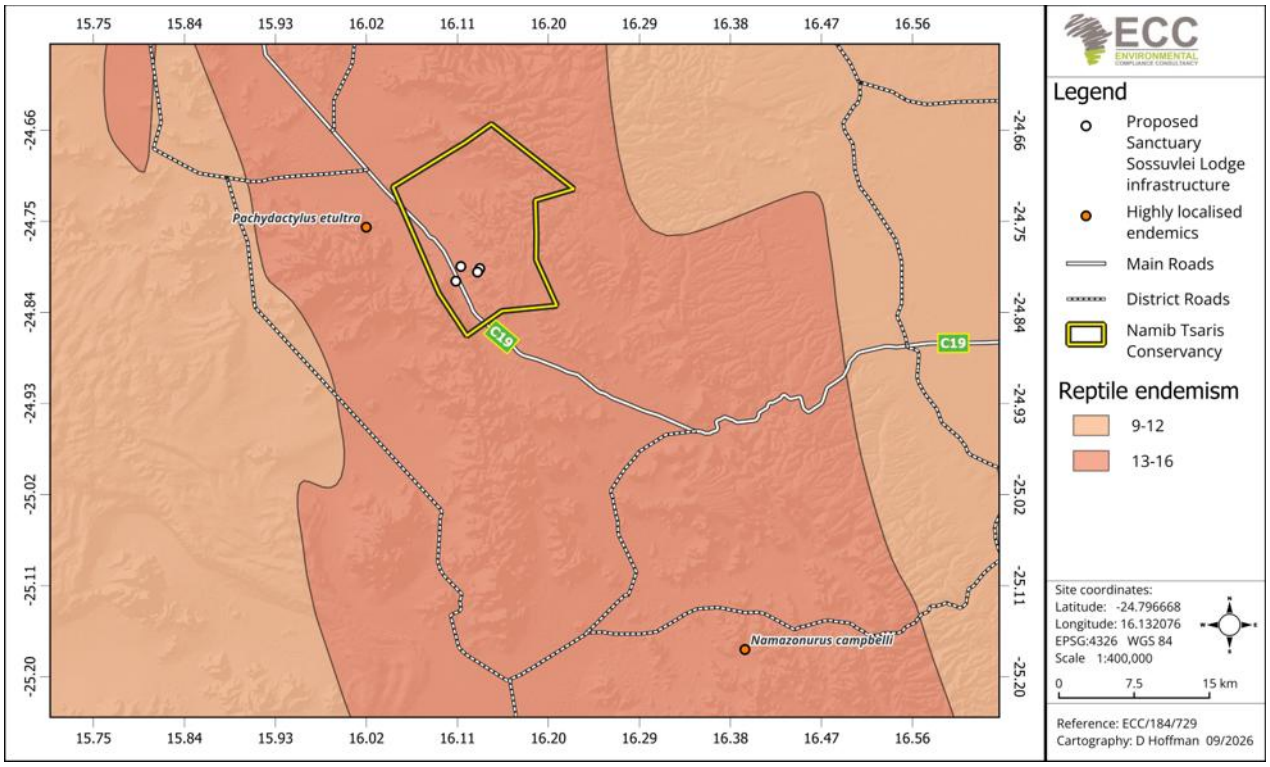


Figure 21 - Reptile endemism (Cartography: D Hoffman, ECC, 09/2026)



Figure 22 – Kudu game population on site

6 IMPACT IDENTIFICATION AND EVALUATION METHODOLOGY

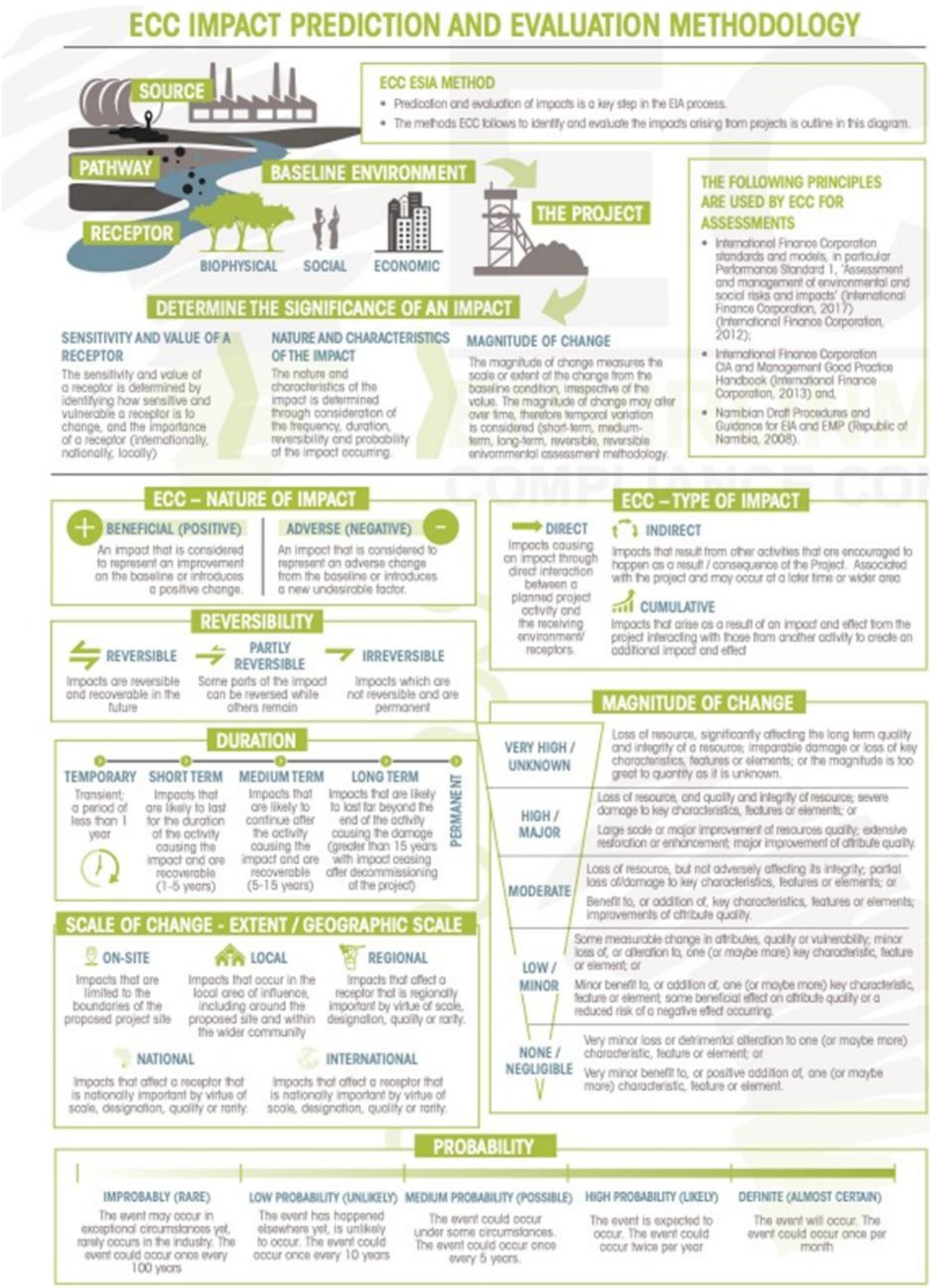
6.1 INTRODUCTION

The impact assessment method described in this chapter by ECC is designed to systematically identify and evaluate potential environmental and social impacts that may arise from the proposed construction and operation of the Sanctuary Sossusvlei Lodge. The method considers the baseline characteristics of the Project area and the sensitivity and value of environmental and social receptors, including the remote Namib Desert setting, the conservation and tourism value of the area, and the communities, workers and other stakeholders that may interact with the Project. The significance of potential impacts is assessed with consideration of the nature and characteristics of each impact and the magnitude of potential change.

The method shown in Figure 23 provides assessment guidance that is used to evaluate impacts, and it also acknowledges any limitations, uncertainties and assumptions associated with the assessment methodology. It outlines how impacts are identified and evaluated and how the level of significance is derived. The method also addresses the application of mitigation measures in the assessment and how additional mitigations are identified.

This chapter provides a structured approach for evaluating the potential impacts of the proposed Project on the environment and social aspects. It considers various factors to determine the significance of impacts and provides guidance on how to identify and evaluate potential impacts. It also recognises the limitations and uncertainties associated with impact assessment methodologies, which adds transparency and credibility to the assessment process.

Overall, this chapter provides a comprehensive and systematic approach for conducting impact assessments, which can help ensure that potential environmental and social impacts are thoroughly evaluated and addressed in the decision-making process for the proposed Project.


ECC IMPACT PREDICTION AND EVALUATION METHODOLOGY
SOURCE
PATHWAY
RECEPTOR
BASELINE ENVIRONMENT
BIOPHYSICAL
SOCIAL
ECONOMIC
THE PROJECT
ECC ESIA METHOD
• Predication and evaluation of impacts is a key step in the EIA process.
• The methods ECC follows to identify and evaluate the impacts arising from projects is outline in this diagram.
THE FOLLOWING PRINCIPLES ARE USED BY ECC FOR ASSESSMENTS
• International Finance Corporation standards and models, in particular Performance Standard 1, "Assessment and management of environmental and social risks and impacts" (International Finance Corporation, 2017) (International Finance Corporation, 2012);
• International Finance Corporation CIA and Management Good Practice Handbook (International Finance Corporation, 2013) and,
• Namibian Draft Procedures and Guidance for EIA and EMP (Republic of Namibia, 2008).
DETERMINE THE SIGNIFICANCE OF AN IMPACT
SENSITIVITY AND VALUE OF A RECEPTOR
The sensitivity and value of a receptor is determined by identifying how sensitive and vulnerable a receptor is to change, and the importance of a receptor (internationally, nationally, locally)
NATURE AND CHARACTERISTICS OF THE IMPACT
The nature and characteristics of the impact is determined through consideration of the frequency, duration, reversibility and probability of the impact occurring.
MAGNITUDE OF CHANGE
The magnitude of change measures the scale or extent of the change from the baseline condition, irrespective of the value. The magnitude of change may alter over time, therefore temporal variation is considered (short-term, medium-term, long-term, reversible, irreversible environmental assessment methodology.
ECC – NATURE OF IMPACT
BENEFICIAL (POSITIVE)
An impact that is considered to represent an improvement on the baseline or introduces a positive change.
ADVERSE (NEGATIVE)
An impact that is considered to represent an adverse change from the baseline or introduces a new undesirable factor.
ECC – TYPE OF IMPACT
DIRECT
Impacts causing an impact through direct interaction between a planned project activity and the receiving environment/ receptors.
INDIRECT
Impacts that result from other activities that are encouraged to happen as a result / consequence of the Project. Associated with the project and may occur at a later time or wider area
CUMULATIVE
Impacts that arise as a result of an impact and effect from the project interacting with those from another activity to create an additional impact and effect
REVERSIBILITY
REVERSIBLE
Impacts are reversible and recoverable in the future
PARTLY REVERSIBLE
Some parts of the impact can be reversed while others remain
IRREVERSIBLE
Impacts which are not reversible and are permanent
DURATION
TEMPORARY
Transient; a period of less than 1 year
SHORT TERM
Impacts that are likely to last for the duration of the activity causing the impact and are recoverable (1-5 years)
MEDIUM TERM
Impacts that are likely to continue after the activity causing the impact and are recoverable (5-15 years)
LONG TERM
Impacts that are likely to last far beyond the end of the activity causing the damage (greater than 15 years with impact ceasing after decommissioning of the project)
PERMANENT
MAGNITUDE OF CHANGE
VERY HIGH / UNKNOWN
Loss of resource, significantly affecting the long term quality and integrity of a resource; irreparable damage or loss of key characteristics, features or elements; or the magnitude is too great to quantify as it is unknown.
HIGH / MAJOR
Loss of resource, and quality and integrity of resource; severe damage to key characteristics, features or elements; or
Large scale or major improvement of resources quality; extensive restoration or enhancement; major improvement of attribute quality.
MODERATE
Loss of resource, but not adversely affecting its integrity; partial loss of/damage to key characteristics, features or elements; or
Benefit to, or addition of, key characteristics, features or elements; improvements of attribute quality.
LOW / MINOR
Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (or maybe more) key characteristic, feature or element; or
Minor benefit to, or addition of, one (or maybe more) key characteristic, feature or element; some beneficial effect on attribute quality or a reduced risk of a negative effect occurring.
NONE / NEGLIGIBLE
Very minor loss or detrimental alteration to one (or maybe more) characteristic, feature or element; or
Very minor benefit to, or positive addition of, one (or maybe more) characteristic, feature or element.
SCALE OF CHANGE - EXTENT / GEOGRAPHIC SCALE
ON-SITE
Impacts that are limited to the boundaries of the proposed project site
LOCAL
Impacts that occur in the local area of influence, including around the proposed site and within the wider community
REGIONAL
Impacts that affect a receptor that is regionally important by virtue of scale, designation, quality or rarity.
NATIONAL
Impacts that affect a receptor that is nationally important by virtue of scale, designation, quality or rarity.
INTERNATIONAL
Impacts that affect a receptor that is nationally important by virtue of scale, designation, quality or rarity.
PROBABILITY
IMPROBABLY (RARE)
The event may occur in exceptional circumstances yet, rarely occurs in the industry. The event could occur once every 100 years
LOW PROBABILITY (UNLIKELY)
The event has happened elsewhere yet, is unlikely to occur. The event could occur once every 10 years
MEDIUM PROBABILITY (POSSIBLE)
The event could occur under some circumstances. The event could occur once every 5 years.
HIGH PROBABILITY (LIKELY)
The event is expected to occur. The event could occur twice per year
DEFINITE (ALMOST CERTAIN)
The event will occur. The event could occur once per month

- The significance of impacts has been derived at by applying the identified thresholds for receptor sensitivity and magnitude of change, as well as the definition of significance. Moderate and major adverse impacts are considered as significant.
- The following thresholds were therefore used to double check the assessment of significance had been applied appropriately; a significant impact would meet at least one of the following criteria:
- It exceeds widely recognized levels of acceptable change;
- It threatens or enhances the viability or integrity of a receptor or receptor group of concern; and
- It is likely to be material to the ultimate decision about whether or not the environmental clearance certificate is granted.

				SIGNIFICANCE OF IMPACT			
			Significance of Impact	Impacts are considered to be loca factors that are unlikely to be critical to decision-making	Impacts are considered to be important factors but are unlikely to be key decision-making factors. The impact will be experienced, but the impact magnitude is sufficiently small (with and without mitigation) and well within accepted standards, and/or the receptor is of low sensitivity/value. Impacts are considered to be short-term, reversible and/or localized in extent.	Impacts are considered within acceptable limits and standards. Impacts are long-term, but reversible and/ or have regional significance. These are generally (but not exclusively) associated with sites and features of national importance and resources/ features that are unique and which, if lost, cannot be replaced or relocated.	Impacts are considered to be key factors in the decision-making process that may have an impact of major significance, or large magnitude impacts occur to highly valued/sensitive resource/receptors. Impacts are expected to be permanent and non-reversible on a national scale and/ or have international significance or result in a legislative non-compliance.
	Biophysical	Social		Low	Minor (2)	Moderate (3)	Major (4)
SENSITIVITY	A biophysical receptor that is protected under legislation or internation convention (CITIES) listed as rare, threatened or endangered IUCN specidies. Highly valued/ sensitive resource/ receptors.	Those affected people/ communities will not be able to adapt to changes or continue to maintain pre-impact livelihoods.	High (3)	Minor (3)	Moderate (6)	Major (9)	Major (12)
	Of value, importance/ rarity on a regional scale, and with limited potential for substitution; and/or not protected or listed (globally) but may be a rare or threatened species in the country; with little resilience to ecosystem changes, important to ecosystem functions, or one under threat or population decline.	Able to adapt with some difficulty and maintain pre-impact status but only with a degree of support	Medium (2)	Low (2)	Minor (4)	Moderate (6)	Major (8)
	Not protected or listed as common/abundant; or not critcal to other ecosystems functions.	Those affected are able to adapt with relative ease and maintain pre-impact status. There is no preceptible chnage to people's livelihood.	Low (1)	Low (1)	Low (2)	Minor (3)	Moderate (4)

SENSITIVITY AND VALUE

Low

Of value, importance or rarity on a local scale; and/or not particularly sensitive to change or has considerable capacity to accommodate a change.

Medium

Of value, importance or rarity on a regional scale, and with limited potential for substitution; and/or moderate sensitivity to change, or moderate capacity to accommodate a change.

High

Of value, importance or rarity on an international and national scale, and with very limited potential for substitution; and/or very sensitive to change or has little capacity to accommodate a change.

MITIGATION

Mitigation comprises a hierarchy of measures ranging from preventative environmental impacts by avoidance, to measures that provide opportunities for environmental enhancement. The mitigation hierarchy is avoidance; reduction at source; reduction at receptor level; repairing and correcting; compensation; remediation; and enhancement.

Mitigation measures can be split into three distinct categories, broadly defined as:

Standard practices and other best practice measures for avoiding and minimizing environmental impacts. These are considered as good practice measures.

Actions undertaken by the EIA process that influence the design process, through implementing design measures that would entirely avoid or eliminate an impact or modifying the design through the inclusion of environmental features to reduce the magnitude of change. These are considered as embedded mitigation.

Specified additional measures or follow-up action to be implemented to further reduce adverse impacts that remain after the incorporation of embedded mitigation. These are considered as additional mitigation.

The EIA is an iterative process whereby the outcomes of the environmental and social assessments inform the project.

The EMP provides the good practice mitigation measures and specified additional measures or follow-up action ECC has recommended for the project.

SIGNIFICANCE DESCRIPTION

Low - Major Beneficial (All Scores)

Impacts are considered to be beneficial to the environment and society.

Low (negative) 0 - 25

Impacts are considered to be local factors that are unlikely to be critical to decision-making.

Minor (negative) 25 - 50

Impacts are considered to be important factors but are unlikely to be key decision-making factors. The impact will be experienced, but the impact magnitude is sufficiently small (with and without mitigation) and well within accepted standards, and/or the receptor is of low sensitivity/value. Impacts are considered to be short-term, reversible and/or localized in extent.

Moderate (negative) 50 - 75

Impacts are considered within acceptable limits and standards. Impacts are long-term, but reversible and/ or have regional significance. These are generally (but not exclusively) associated with sites and features of national importance and resources/ features that are unique and which, if lost, cannot be replaced or relocated.

Major (negative) 75 - 100

Impacts are considered to be key factors in the decision-making process that may have an impact of major significance, or large magnitude impacts occur to highly valued/sensitive resource/receptors. Impacts are expected to be permanent and non- reversible on a national scale and/or have international significance or result in a legislative non- compliance.

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Figure 23 - ECC ESIA methodology based on IFC standards

6.2 ASSESSMENT GUIDANCE

The principal documents used to inform the assessment method are:

- International Finance Corporation (IFC) standards and models, in particular Performance Standard 1, 'Assessment and management of environmental and social risks and impacts' (International Finance Corporation, 2012 and 2017);
- International Finance Corporation Cumulative Impact Assessment (CIA) and Management Good Practice Handbook (International Finance Corporation, 2013); and
- Namibian Draft Procedures and Guidance for EIA and EMP (Republic of Namibia, 2008).

6.3 LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS

The limitations and uncertainties associated with the assessment methodology in Namibia were observed to include the absence of topic-specific assessment guidance, with a generic methodology being applied based on IFC (International Finance Corporation) guidance and professional judgement with over 40 years of ESIA experience. This implies that there may be limitations in terms of tailoring the assessment to specific topics or issues relevant to Namibia, and that the methodology may not fully capture the unique characteristics and nuances of the local context.

The impact assessment process also recognises uncertainties associated with the level of detail available at the time of assessment. Where detailed construction methods, contractor appointments, construction schedules or final operational arrangements have not yet been confirmed, realistic assumptions are applied to ensure that reasonably foreseeable impacts are identified and assessed. These assumptions and uncertainties are documented in Table 7 and will be reviewed as the Project design and implementation details are refined.

It is important to note that the limitations and uncertainties identified in the assessment methodology may introduce potential biases or inaccuracies in the assessment results. Therefore, it is recommended to regularly review and update the methodology to address these limitations and uncertainties, and to ensure that it remains robust and relevant for the specific context of Namibia. Additionally, incorporating stakeholder feedback and local knowledge can also contribute to improving the accuracy and comprehensiveness of the assessment process.

Table 7 - Limitations, uncertainties and assumptions

Topic	Assumption/uncertainty
Topic-specific assessment guidance has not been developed in Namibia.	A generic assessment methodology will be applied using IFC guidance, applicable Namibian requirements and professional judgement, with the methodology adapted to the specific characteristics of the Project.

Topic	Assumption/uncertainty
Project design and construction methodology	Detailed construction methods, contractor appointments and construction schedules may not yet be finalised. The assessment is based on the proposed Greenfields lodge development, including site preparation, earthworks, construction of accommodation and supporting facilities, installation of services and associated infrastructure.
Traffic and employment	Traffic volumes, workforce requirements and employment numbers may vary during the construction and operational phases and will depend on the final construction programme and operational arrangements.
Water supply and wastewater management	Water requirements, borehole abstraction arrangements and final wastewater treatment, reuse and/or discharge arrangements may be refined as the Project design develops. Applicable water-use and wastewater requirements will be incorporated into the assessment and ESMP.
Energy and fuel requirements	The final configuration and operating requirements of the solar power systems and diesel backup generation, as well as fuel delivery and storage arrangements, may be refined during detailed design. The assessment considers the proposed use of solar and diesel systems and approximately 5,000 L of diesel storage for the backup generator.
Environmental and social baseline data	The assessment relies on available baseline information, site observations, stakeholder consultation and other information available at the time of assessment. Data gaps or changes in environmental and social conditions may affect impact predictions and will be considered when reviewing the assessment.

6.4 CUMULATIVE IMPACTS

Cumulative impacts may arise from the interaction of the proposed Sanctuary Sossusvlei Lodge with other existing, planned or reasonably foreseeable activities and developments in the Project area and surrounding Sossusvlei and Namib Tsaris Conservancy context. A cumulative impact assessment (CIA) will be undertaken by applying the IFC Cumulative Impact Assessment and Management Good Practice Handbook (International Finance Corporation, 2013), which recommends a rapid CIA where data and planning information are limited. The

CIA will consider the combined effects on valued environmental and social receptors that may be affected by the proposed development together with other relevant activities or developments.

The following five-step rapid CIA process will be followed:

1. Scoping – determine spatial and temporal boundaries.
2. Scoping – identify valued environmental and social receptors and identify reasonably foreseeable developments.
3. Determine the present conditions of valued environmental and social receptors (the baseline).
4. Evaluate the significance of the cumulative impacts.
5. Identify mitigation measures to avoid or reduce cumulative impacts.

The following information will be applied to the assessment in line with the above steps and IFC guidance:

- The spatial and temporal boundaries of the CIA are the extent of the Project boundaries and the duration of the construction and operation phases of the proposed Project.
- Valued environmental and social receptors that may be affected.
- A review of existing and reasonable, anticipated and/or planned developments has been undertaken, which is based on the information presented in chapter 4.
- The predicted future conditions of sensitive and common environmental and social receptors have been taken into consideration in the assessment.
- The assessment findings will be presented in the assessment report and will have the CIA applied in combination with professional judgment and published environmental assessment reports.
- A review of mitigation and monitoring measures will be undertaken, with any additional ones identified.

6.5 MITIGATION

Impacts identified throughout the ESIA process will be subjected to a process of impact mitigation, which is inherent in all aspects of the ESIA system. Embedded mitigation and good practice mitigation will be considered in the assessment. Additional mitigation measures will be identified where the significance of an impact requires further reduction. Mitigation measures will be relevant to both construction and operation and will take account of the proposed lodge, staff facilities and associated infrastructure and services.

The principle of impact mitigation comprises a hierarchy of measures ranging from avoidance of environmental and social impacts to measures that provide opportunities for environmental enhancement. The mitigation hierarchy will be applied to all impacts associated with the proposed Project and comprises avoidance; reduction at source;

reduction at receptor level; repairing and correcting; compensation; remediation; and enhancement. The Project ESMP provides good practice measures for impact mitigation and specifies additional measures or follow-up actions where required. On completion of the impact assessment, the mitigation measures and recommendations identified through the assessment will be incorporated into the ESMP. The ESMP is appended to this report (Appendix A).

Mitigation measures can be split into three distinct categories, broadly defined as:

- Actions undertaken by the ESIA process that influence the design process, through implementing design measures that would entirely avoid or eliminate an impact or modifying the design through the inclusion of environmental features to reduce the magnitude of change. These are considered embedded mitigation;
- Standard practices or other best practice measures for avoiding and minimising environmental impacts. These are considered good practice measures; and
- Specified additional measures or follow up actions to be implemented, to further reduce adverse impacts that remain after the incorporation of embedded mitigation. These are considered additional mitigation measures.

Where additional mitigation is identified, a final assessment of the significance of impacts (residual impacts) will be carried out, taking into consideration the additional mitigation.

The ESMP provides an outline of the good practice measures and specified additional measures or follow-up actions to be undertaken for the proposed Sanctuary Sossusvlei Lodge. The ESMP provides the management framework for planning and implementation of the Project and sets out development standards and commitments intended to ensure that identified environmental and social impacts are minimised, mitigated, prevented and/or enhanced as far as reasonably practicable, and that statutory requirements and other legal obligations are fulfilled.

7 IMPACT ASSESSMENT FINDINGS AND PROPOSED MITIGATION MEASURES

7.1 INTRODUCTION

This chapter presents the findings of the impact assessment for the proposed Sanctuary Sossusvlei Lodge, undertaken in accordance with the methodology set out in Chapter 6. Each impact identified during the scoping phase has been assessed for the construction, operation and decommissioning phases of the Project, drawing on the project description (Chapter 4), the biophysical and social baseline (Chapter 5) and the impact identification and evaluation methodology (Chapter 6).

For each impact, this chapter records: the activity giving rise to the impact; the affected receptor; a description of the potential impact; the nature, type, reversibility, magnitude, duration, extent and probability that together determine the pre-mitigation significance; the sensitivity of the receptor; the resulting significance of the impact before mitigation; the mitigation measures recommended to manage the impact; and the residual significance of the impact once those measures are applied.

Consistent with the significance rating approach in Chapter 6, impacts rated Moderate or Major (negative) before mitigation are considered significant and are carried forward to section 7.4 for detailed assessment, organised by environmental and social topic. Impacts rated Low or Minor (negative) before mitigation are considered not significant and are summarised in section 7.2; standard design and best practice mitigation, as set out in the Environmental and Social Management Plan (ESMP) in Appendix A, is considered sufficient to manage these. Beneficial impacts are summarised separately in section 7.3. Cumulative impacts are addressed in section 7.5.

In total, 104 potential impacts were identified and assessed across the biophysical, social and economic environments: 61 are considered significant before mitigation, 35 are considered not significant, and 8 are beneficial impacts associated primarily with employment, skills development and the local and regional economy.

7.2 IMPACTS NOT CONSIDERED SIGNIFICANT

The impacts summarised in Table 8 were assessed as Low or Minor (negative) significance before mitigation. Their magnitude, duration, extent and/or probability, and/or the sensitivity of the affected receptor, are such that they are not considered likely to be material to the decision on whether the Project's environmental clearance certificate should be granted, provided the standard design and best practice mitigation measures set out in the ESMP are implemented.

Table 8 - Impacts not considered significant

Environment / social topic	Potential impact(s)	Summary of assessment findings
Desert vegetation and habitat	Introduction and spread of alien plant species through landscaping, imported material and vehicles.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Desert vegetation and soils	Damage to vegetation and surface crusts from off track driving on guest activities.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Desert vegetation and habitat	Continued establishment and spread of alien species from landscaped areas.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Terrestrial fauna	Displacement of fauna from the footprint and surrounds by construction noise, movement and human presence.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.

Environment / social topic	Potential impact(s)	Summary of assessment findings
Terrestrial fauna	Faunal mortality from collisions with construction vehicles on the access road, internal tracks and the C19.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Terrestrial fauna	Obstruction of wildlife movement by any fencing erected around the lodge or staff village.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Soils	Wind and water erosion of exposed working areas and soil stockpiles.	Assessed as Minor (2) significance prior to mitigation (Low sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Soils and land capability	Compaction of soils on tracks, laydown areas and around the contractor's camp.	Assessed as Minor (2) significance prior to mitigation (Low sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.

Environment / social topic	Potential impact(s)	Summary of assessment findings
Soils and rehabilitation potential	Loss of topsoil available for rehabilitation through poor stripping, storage or mixing.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Soils, vegetation and landscape	Additional disturbance and landscape scarring from borrow areas if construction material is won on site.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Downstream drainage and users	Increased sediment load and scour downstream of crossings and cleared areas.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Guests, staff and infrastructure	Flood risk to occupied and operating infrastructure.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.

Environment / social topic	Potential impact(s)	Summary of assessment findings
Soils and drainage lines	Concentration of runoff from roofs, hard standing and roads.	Assessed as Minor (2) significance prior to mitigation (Low sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Neighbouring landowners and operators	Reduction in water available to neighbouring users from construction abstraction	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Vegetation, lichen and neighbours	Deposition of dust on vegetation, lichen and neighbouring properties.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Air quality	Emissions from the backup diesel generator.	Assessed as Minor (2) significance prior to mitigation (Low sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.

Environment / social topic	Potential impact(s)	Summary of assessment findings
Air quality	Emissions from any on site incineration of waste.	Assessed as Minor (2) significance prior to mitigation (Low sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Fauna, guests and neighbours	Noise from vehicle and aircraft movements.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Fauna and neighbouring operators	Noise from demolition, load out and haulage.	Assessed as Minor (2) significance prior to mitigation (Low sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Soils and groundwater	Sewage sludge handling, storage and disposal.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.

Environment / social topic	Potential impact(s)	Summary of assessment findings
Staff, guests, soils and groundwater	Storage and handling of gas cylinders, cleaning chemicals, paints and pool chemicals.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Vegetation, fauna, neighbours, guests and staff	Fire or explosion from kitchen, gas, fuel or generator installations spreading into surrounding vegetation.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Moderate magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Landscape character and visual receptors	Persistence of unrehabilitated disturbance and closure scars in the landscape.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Businesses / regional economy	Competition for scarce local goods, services, transport capacity and skilled labour during construction	Assessed as Minor (2) significance prior to mitigation (Low sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.

Environment / social topic	Potential impact(s)	Summary of assessment findings
Businesses/households	Sustained competition for local goods, services and skilled labour raising local costs.	Assessed as Minor (2) significance prior to mitigation (Low sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Workers	Exposure of worker to demolition, load out and haulage hazards.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Moderate magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Workers	Exposure of workers to unfair labour practices, discrimination or an inability to raise workplace concerns.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Workers and dependants	Inadequate living conditions, sanitation and services at the contractors' camp.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Moderate magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.

Environment / social topic	Potential impact(s)	Summary of assessment findings
Workers and dependants	Living conditions, services and safety at the permanent staff village.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Conservancy, neighbours and workers	Unplanned settlement growth around the staff village.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Conservancy, fauna, and neighbours	Workforce conduct inside a conservancy managed for conservation and tourism, including wildlife interference, alcohol and unauthorised movement.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Moderate magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Neighbours and visitors	Public exposure to open excavations, active work areas and plant.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.

Environment / social topic	Potential impact(s)	Summary of assessment findings
Road users	Deterioration of the access route and increased traffic volumes during construction.	Assessed as Minor (2) significance prior to mitigation (Low sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Conservancy, neighbours and workers	Ongoing grievances from the conservancy, neighbours and other operators during operation.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.
Workers, conservancy, neighbours and suppliers.	Inadequate notice and communication of closure to staff, the conservancy, neighbours and suppliers.	Assessed as Minor (4) significance prior to mitigation (Medium sensitivity receptor, Low / Minor magnitude of change). Standard design and best practice mitigation set out in the ESMP is considered sufficient to manage this impact; it is not carried forward as a significant impact for detailed assessment.

7.3 BENEFICIAL IMPACTS

The Project also gives rise to several beneficial impacts, summarised in Table 9, principally through the creation of temporary construction employment and permanent operational employment, skills development, local and regional procurement, and the contribution of additional tourism capacity to the Sossusvlei area and the Namib Tsaris Conservancy. The enhancement measures set out for each beneficial impact are intended to maximise the extent to which these benefits accrue to local and regional communities.

Table 9 - Beneficial impacts

Receptor	Potential benefit	Significance (pre-enhancement)	Significance (post-enhancement)
Workers/ Households	Construction of project can provide 30 to 50 temporary construction jobs.	Beneficial Moderate	Beneficial Moderate
Workers	Construction may provide local/regional workers with skills and experience that improve future employment opportunities.	Beneficial Moderate	Beneficial Moderate
Businesses	Project construction may create opportunities for local and regional businesses to supply goods and services, thus strengthening local business participation.	Beneficial Minor	Beneficial Moderate
Workers/ households	People employed during this phase may increase household income and local spending from construction wages.	Beneficial Minor	Beneficial Minor
Workers/households	Creation of 70 permanent operational positions	Beneficial Major	Beneficial Major
Workers	Training and career progression allowing senior positions to be filled locally over time.	Beneficial Moderate	Beneficial Moderate
Regional economy	Addition of high value tourism capacity to the Sossusvlei area	Beneficial Major	Beneficial Major
Businesses/ regional economy	Ongoing regional procurement of goods, services and locally produced items.	Beneficial Moderate	Beneficial Moderate

7.4 IMPACTS CONSIDERED SIGNIFICANT

This section presents the impacts assessed as Moderate or Major (negative) significance before mitigation, grouped by environmental and social topic. For each topic, the affected receptors and the activities giving rise to the impacts are described, followed by a table setting out the detailed assessment and the mitigation measures recommended to reduce each impact to the residual significance shown.

7.4.1 FLORA, VEGETATION AND ALIEN SPECIES

Vegetation clearing for the Lodge footprint, internal roads and the staff village, and the ongoing risk of alien plant establishment during operation, are the principal impacts to desert flora and vegetation. Protected or endemic plant species within the footprint are a particular focus, given the legal protection afforded to these species under Namibian legislation.

Table 10 - Summary of flora, vegetation and alien species impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Construction	Desert vegetation and habitat	Permanent loss of desert vegetation and habitat within the cleared footprint.	Adverse (Negative) Direct Partly Reversible Moderate / Long term On-site Definite (Almost certain)	Medium	Major (8)	• Minimise the cleared footprint to what is strictly required for the approved layout and demarcate no-go areas before earthworks begin. • Undertake a pre-clearance walk-down to flag individually valuable plants for transplanting or protection rather than clearing. • Strip and stockpile topsoil and brush from cleared areas separately for use in progressive and final rehabilitation.	Minor (4)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Restrict clearing to the construction footprint only; no clearing for convenience outside pegged boundaries.	
Construction	Protected flora	Removal of or damage to protected plant species during clearing without the required permit.	Adverse (Negative) Direct Irreversible Moderate Permanent On-site Medium Probability (Possible)	High	Major (9)	• Complete a pre-construction protected/endemic flora survey of the footprint and obtain the required MEFT permit before any clearing of protected species. • Relocate or propagate flagged protected individuals where a specialist confirms translocation is feasible.	Minor (3)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Brief clearing contractors and supervise clearing so flagged individuals are avoided or handled under permit conditions. • Keep a register of protected plants removed under permit for MEFT reporting.	
Operation	Groundwater dependent vegetation	Loss or decline of vegetation dependent on shallow groundwater as water levels fall.	Adverse (Negative) Indirect Partly Reversible Moderate Long term Local Medium Probability (Possible)	High	Major (9)	• Manage operational abstraction within the DWA water use licence and the yield confirmed by the borehole assessment. • Monitor groundwater levels and any groundwater-dependent vegetation	Minor (3)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						on a regular schedule and adjust abstraction if a declining trend is detected. • Fix leaks in the reticulation system promptly and use water-efficient fittings to limit abstraction to actual demand.	

7.4.2 FAUNA AND WILDLIFE

Construction and operational activities have the potential to displace fauna, increase the risk of vehicle collisions, obstruct movement, and habituate wildlife to human presence and food waste. The Project's location within a private reserve managed for conservation means these impacts are assessed against a relatively high sensitivity baseline.

Table 11 - Summary of fauna and wildlife impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Operation	Terrestrial fauna	Habituation of wildlife to food waste and to the presence of guests.	Adverse (Negative) Indirect Partly Reversible Moderate Long term Local High Probability (Likely)	Medium	Moderate (6)	• Store all food waste in sealed, wildlife-proof containers and remove it from site regularly. • Prohibit guest or staff feeding of wildlife in the lodge's code of conduct and guest briefings. • Screen kitchen and back-of-house waste areas from wildlife access. • Monitor for habituated animals around the lodge and staff village and report patterns of concern to MEFT/the conservancy.	Minor (4)
Operation	Terrestrial fauna	Disturbance of fauna by game drives, guided	Adverse (Negative) Indirect	Medium	Moderate (6)	• Maintain minimum approach distances to wildlife on game drives and	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
		walks and night drives.	Reversible Low Minor Long term Local High Probability (Likely)			guided walks in line with the conservancy's game viewing guidelines. • Limit the number and duration of night drives and avoid repeated disturbance of the same individuals or groups. • Train guides on low-impact game viewing practice.	
Operation	Terrestrial fauna	Faunal mortality from collisions with guest transfer, staff and supply vehicles.	Adverse (Negative) Direct Irreversible Low Minor Long term Local	Medium	Moderate (6)	• Enforce reduced speed limits on the access road and internal tracks for all guest transfer, staff and supply vehicles, particularly at dawn, dusk and night. • Induct all drivers, including transfer and supply drivers, on wildlife awareness.	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
			Medium Probability (Possible)			• Record and report any wildlife collision to MEFT/the conservancy and review the circumstances.	

7.4.3 SOILS AND LAND CAPABILITY

Earthworks, vehicle movement and the establishment of laydown and camp areas disturb desert soils and surface crusts, which are slow to recover once disturbed. Impacts are concentrated during construction, with a lower level of ongoing disturbance during operation.

Table 12 - Summary of soils and land capability impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Construction	Soils and surface crusts	Loss of desert surface crust and gravel pavement from earthworks and vehicle movement.	Adverse (Negative) Direct Partly Reversible Moderate Short term On-site Definite (Almost certain)	Medium	Moderate (6)	• Limit vehicle and foot traffic to demarcated tracks and working areas; no off-track driving during construction. • Phase earthworks so only the area under active construction is disturbed at any time. • Reinstate the surface crust and gravel pavement on temporarily disturbed areas (laydown, camp) once no longer required.	Minor (4)
Operation	Soils and surface crusts	Ongoing compaction and surface	Adverse (Negative) Direct	Low	Moderate (3)	• Confine vehicle and pedestrian movement to	Low (1)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
		disturbance around the staff village, tracks and service areas.	Partly Reversible Low Minor Long term On-site High Probability (Likely)			designated roads, tracks and paths. • Rehabilitate any areas of unplanned compaction or disturbance identified during routine grounds inspections.	

7.4.4 SURFACE WATER AND DRAINAGE

The Project's infrastructure and internal roads cross or lie near ephemeral drainage lines. Impacts relate to alteration of flow paths and sediment regime during construction, and to flood risk to infrastructure and concentrated runoff during operation.

Table 13 - Summary of surface water and drainage impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Construction	Ephemeral drainage lines	Alteration of ephemeral flow paths and sediment movement by road crossings, bridge excavation and stormwater works.	Adverse (Negative) Direct Partly Reversible Moderate Long term Local Medium Probability (Possible)	Medium	Moderate (6)	• Design road crossings and stormwater work to maintain the pre-development flow paths, volumes and sediment regime of ephemeral drainage lines as far as practicable. • Time in-channel works, where unavoidable, for the dry season. • Install temporary erosion and	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						sediment control at crossings and excavation areas for the duration of construction.	
Construction	Project infrastructure and users	Flood risk to guest units, the main area, the staff village, services and the access road.	Adverse (Negative) Direct Partly Reversible Moderate Long term On-site Medium Probability (Possible)	Medium	Moderate (6)	• Site guest units, the main area, the staff village and services outside the modelled flood line, based on the site layout and drainage assessment. • Design stormwater channelling and any flood protection berms with reference to	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						the site's drainage catchment before construction of infrastructure in low-lying areas.	

7.4.5 GROUNDWATER AND WATER SECURITY

Groundwater is the Project's sole water source and is also relied upon by neighbouring landowners and operators, so impacts to groundwater quantity (abstraction and drawdown) and quality (contamination from fuel, chemicals or wastewater) are assessed as high sensitivity throughout the Project life cycle, from construction abstraction through to decommissioning.

Table 14 - Summary of groundwater and water security impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Construction	Aquifer and other groundwater users	Drawdown of water levels from abstraction of construction water.	Adverse (Negative) Direct Partly Reversible Low Minor Short term Regional Definite (Almost certain)	High	Major (9)	• Abstract construction water strictly within the volumes and conditions of the DWA borehole abstraction and water use licence. • Monitor borehole water levels during construction and report any unexpected decline to DWA. • Use water-efficient construction methods and dust suppression rates to limit abstraction to what is necessary.	Minor (3)
Construction	Soils and groundwater	Contaminati on of soil	Adverse (Negative)	High	Major (9)	• Store all fuels, oils, cement and chemicals in	Minor (3)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
		and groundwater from spills or leaks of diesel, oils, cement and chemicals.	Direct Irreversible Moderate Long term Regional Medium Probability (Possible)			bunded, impermeable containment areas away from drainage lines and away from the borehole(s). • Refuel and service plant and vehicles only in a designated, bunded area with spill kits on hand. • Implement a spill response procedure and train relevant staff; report and remediate any spill immediately. • Use drip trays under static plant and generators.	

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Operation	Aquifer, other users and vegetation	Sustained drawdown of the aquifer from operational abstraction.	Adverse (Negative) Direct Partly Reversible Moderate Long term Regional High Probability (Likely)	High	Major (12)	• Abstract strictly within the DWA water use licence and the sustainable yield confirmed for the borehole(s). • Monitor groundwater levels on a routine schedule, with trigger levels that prompt a review of abstraction if declines exceed the expected seasonal range. • Fix leaks promptly and use water-efficient fixtures and irrigation to minimise demand.	Moderate (6)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Share monitoring data with DWA and neighbouring groundwater users on request.	
Operation	Soils and groundwater	Contamination of soil and groundwater from the wastewater treatment plant and French drain disposal field.	Adverse (Negative) Direct Irreversible Moderate Long term Regional Medium Probability (Possible)	High	Major (9)	• Design, commission and maintain the packaged treatment plant to the specified effluent quality before disposal to the French drains. • Size French drains on percolation testing and locate them with adequate separation from the borehole(s) and any drainage lines.	Minor (3)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Follow the supplier's operations and maintenance plan, including regular effluent quality testing and sludge management. • Monitor groundwater quality down-gradient of the disposal field on a routine schedule.	
Operation	Soils and groundwater	Leakage from the sewage rising main linking the Main Area and the Staff Village/BOH over its full	Adverse (Negative) Direct Partly Reversible Moderate Long term Local	High	Major (9)	• Route the sewage rising main away from the borehole(s) and any drainage lines where the layout allows, and bury it to the specified depth with pressure-tested joints along its full length.	Minor (3)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
		reticulation length.	Medium Probability (Possible)			• Fit the line with a leak/pressure monitoring system so a loss of pressure is detected and located quickly rather than relying on surface signs alone over its roughly 4.2 km run between the Main Area and the Staff Village/BOH. • Inspect the pipeline route on a routine schedule and repair any identified leak immediately under the site emergency procedure.	

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Monitor groundwater quality at representative points along the route, in the same way as for the treatment plant disposal field.	
Operation	Soils and groundwater	Contamination from fuel, oil, pool and cleaning chemical spills during operation.	Adverse (Negative) Direct Partly Reversible Low Minor Long term On-site Medium Probability (Possible)	High	Moderate (6)	• Store fuel, pool and cleaning chemicals in bunded, secure, appropriately ventilated areas away from the borehole(s). • Keep spill kits at fuel storage, plant rooms and chemical storage areas; train relevant staff in their use. • Report, contain and remediate any spill	Minor (3)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						immediately under the site emergency procedure.	
Decommissioning	Soils and groundwater	Residual soil and groundwater contamination revealed on removal of the fuel installation and treatment plant.	Adverse (Negative) Direct Irreversible Moderate Permanent On-site Medium Probability (Possible)	High	Major (9)	• Undertake a site contamination assessment on removal of the fuel installation and treatment plant, focused on soils and groundwater beneath and around these facilities. • Remediate any contamination identified to a standard agreed with DWA/MEFT before closure sign-off. • Decommission and remove tanks, pipework	Minor (3)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						and the French drain field in line with good practice to avoid further release during removal.	
Operations	Neighbouring landowners and operators	Reduction in water available to neighbouring users from sustained operational abstraction.	Adverse (Negative) Direct Partly Reversible Moderate Long term Regional High Probability (Likely)	High	Major (12)	• Abstract strictly within the DWA water use licence and the sustainable yield confirmed for the borehole(s), as described in the Biophysical sheet. • Monitor groundwater levels on a routine schedule and share monitoring data with neighbouring users and DWA on request. • Engage neighbouring landowners and	Moderate (6)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						operators proactively if a monitored decline raises a shared supply concern.	

7.4.6 AIR QUALITY AND NOISE

Dust and noise from earthworks, vehicle movement, generators and plant are elevated against the very low ambient baseline typical of the desert setting, with implications for fauna, guests, staff and neighbouring tourism operators.

Table 15 - Summary of air quality and noise impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Construction	Air quality	Dust generated by earthworks, materials handling and traffic on unsealed roads.	Adverse (Negative) Direct Reversible Low Minor Short term Local High Probability (Likely)	Low	Moderate (3)	• Apply water-based dust suppression to active earthworks areas, unsealed roads and materials handling points during dry, windy conditions. • Set and enforce a reduced speed limit on unsealed site roads. • Cover or dampen stockpiled fine material.	Low (1)
Construction	Fauna, staff and neighbouring operators	Noise from construction plant, earthworks, drilling and vehicle movement against a	Adverse (Negative) Direct Reversible Moderate Short term	Medium	Moderate (6)	• Restrict noisy construction activities (earthworks, drilling) to daytime working hours only.	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
		very low desert baseline.	Local High Probability (Likely)			• Maintain plant and vehicles to reduce mechanical noise and avoid unnecessary idling. • Site the contractors' camp and any generators as far as practicable from the neighbouring tourism operator and lodge guest areas.	
Operation	Vegetation and neighbours	Dust from traffic on unsealed internal roads and the access road.	Adverse (Negative) Direct Reversible Low Minor Long term Local High Probability (Likely)	Low	Moderate (3)	• Apply water-based dust suppression on unsealed internal roads and the access road during dry, windy conditions. • Enforce a reduced vehicle speed limit on unsealed roads.	Low (1)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Consider a stabilising treatment on the most heavily trafficked sections if dust generation proves persistent.	
Operation	Fauna, guests, staff and neighbours	Noise from generators, pumps, plant rooms and the water and wastewater treatment plant.	Adverse (Negative) Direct Reversible Low Minor Long term Local High Probability (Likely)	Medium	Moderate (6)	• Site generators, pumps and the water/wastewater treatment plant as far as practicable from guest units and neighbouring properties, with acoustic screening or enclosures where needed. • Maintain plant to manufacturer specification to control mechanical noise.	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Schedule noisy maintenance activities for periods of lower guest occupancy where possible.	

7.4.7 WASTE AND HAZARDOUS SUBSTANCES MANAGEMENT

The absence of a municipal waste or hazardous substance disposal service within reach of the site means waste generation, storage and disposal, and the storage and handling of fuel and other hazardous substances, are managed impacts throughout construction, operation and decommissioning.

Table 16 - Summary of waste and hazardous substances management impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Construction	Soils, groundwater and fauna	Generation of general, recyclable and hazardous waste with no municipal collection or disposal service within reach.	Adverse (Negative) Direct Partly Reversible Low Minor Short term On-site Definite (Almost certain)	Medium	Moderate (6)	• Provide separated, clearly labelled, wildlife-proof bins for general, recyclable and hazardous waste at the contractors' camp and work areas. • Contract a registered waste contractor to collect and dispose of all waste off site at a licensed facility; keep waste transfer records.	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Prohibit food waste storage that could attract wildlife to the camp.	
Construction	Soils, groundwater and air quality	On site burial or burning of waste as the default response to accumulation in a remote location.	Adverse (Negative) / Direct / Irreversible / Low / Minor / Short term / Local / Low probability (Unlikely)	High	Moderate (6)	• Prohibit on site burial or burning of any waste in the site EMP and contractor's health, safety and environment induction. • Ensure the appointed waste contractor's collection schedule matches the rate of waste	Minor (3)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						generation so accumulation does not create pressure for on site disposal. • Include compliance checks for illegal waste disposal in routine site environmental inspections.	
Construction	Soils and groundwater	Spills and leaks from bulk diesel storage, refuelling and plant servicing.	Adverse (Negative) / Direct / Irreversible / Moderate / Long term / Regional / Medium	High	Major (9)	• Store bulk diesel in double-walled, self-bunded tanks with a valid consumer installation certificate.	Minor (3)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
			Probability (Possible)			• Bund all fuel storage, refuelling and plant servicing areas; keep spill kits at each area and train staff in their use. • Inspect storage and bunding regularly and repair any deterioration immediately. • Report, contain and remediate any spill without delay under the site emergency procedure.	

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Construction	Soils and groundwater	Generation and disposal of used oil, filters and hydrocarbon contaminated material.	Adverse (Negative) / Direct / Partly Reversible / Low / Minor / Short term / On-site / High Probability (Likely)	Medium	Moderate (6)	• Store used oil, filters and hydrocarbon-contaminated material in sealed, labelled containers on an impermeable, bunded surface. • Contract a registered hazardous waste handler to remove and dispose of used oil and contaminated material off site; keep	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						manifests/certificates of safe disposal.	
Operation	Fauna, soils and groundwater	Food waste generation and containment failure.	Adverse (Negative) / Direct / Partly Reversible / Low / Minor / Long term / On-site / High Probability (Likely)	Medium	Moderate (6)	• Store food waste in sealed, wildlife-proof containers in a dedicated, screened area. • Collect food waste frequently and dispose of it off site through the appointed waste contractor. • Consider composting of appropriate food waste in a contained, managed facility	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						away from guest and wildlife access.	
Operation	Soils, groundwater and fauna	Generation of general, recyclable and hazardous waste with no municipal service.	Adverse (Negative) / Direct / Partly Reversible / Low / Minor / Long term / On-site / Definite (Almost certain)	Medium	Moderate (6)	• Provide separated, wildlife-proof bins for general, recyclable and hazardous waste throughout the lodge and staff village. • Contract a registered waste contractor for scheduled off site collection and disposal; keep transfer records. • Prohibit on site burial or burning of	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						waste in the lodge's environmental management procedures.	
Decommissioning	Soils and groundwater	Demolition waste, redundant plant and contaminated material requiring removal and disposal.	Adverse (Negative) Direct Partly Reversible Low Minor Short term On-site Definite (Almost certain)	Medium	Moderate (6)	• Sort demolition waste at source into general, recyclable, hazardous and contaminated material streams. • Remove and dispose of all waste and redundant plant off site through a registered waste	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						contractor; keep disposal records. • Prohibit on site burial or burning of demolition waste.	

7.4.8 HERITAGE, ARCHAEOLOGY AND CULTURAL SITES

The desert environment has the potential to contain archaeological, palaeontological or culturally and spiritually significant material that a pre-construction survey may not fully identify. These impacts are assessed as high sensitivity given the irreplaceable nature of heritage resources.

Table 17 - Summary of heritage, archaeology and cultural sites impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Construction	Heritage resources	Disturbance or destruction of archaeological or palaeontological material during clearing and earthworks.	Adverse (Negative) Direct Irreversible High Major Permanent On-site Medium Probability (Possible)	High	Major (9)	• Implement a chance-find procedure: stop work immediately if archaeological or palaeontological material is exposed, secure the area and notify the National Heritage Council and the ECO before continuing. • Brief all earthworks and clearing personnel on the chance-find procedure before work commences.	Minor (3)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Where a heritage assessment has flagged features of concern within the footprint, have these cleared or avoided under the relevant permit before earthworks begin in that area.	
Construction	Heritage resources	Damage to surface heritage material from vehicle movement outside the surveyed footprint.	Adverse (Negative) Indirect Irreversible Low Minor Long term On-site Medium Probability (Possible)	High	Moderate (6)	• Clearly demarcate the approved construction footprint and prohibit vehicle movement outside it. • Brief drivers and site personnel on the location of any known heritage material to be avoided.	Minor (3)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Include heritage protection in routine site environmental inspections.	
Operation	Heritage resources	Damage to heritage material from vehicle movement on guest activities outside designated routes.	Adverse (Negative) Indirect Irreversible Low Minor Long term On-site Medium Probability (Possible)	High	Moderate (6)	• Restrict guest game drives to designated, marked routes that avoid known heritage material. • Brief guides on the location and sensitivity of heritage features so these are respected during off-route activities where these are permitted under guidance. • Include heritage protection in routine environmental	Minor (3)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						monitoring during operation.	
Construction	Local Communities	Disturbance of site of cultural or spiritual significance that an archaeological survey would not identity.	Adverse (Negative) Direct Irreversible Moderate Permanent On-site Low probability (Unlikely)	High	Moderate (6)	• Implement the chance-find procedure described for heritage and palaeontology (Biophysical sheet) so any site of cultural or spiritual significance uncovered during earthworks is treated the same way: stop work, secure the area and consult the National Heritage Council and relevant traditional authorities before continuing. • Engage the conservancy and	Minor (3)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						neighbouring communities during pre-construction consultation to identify any known sites of cultural or spiritual significance not captured by the archaeological survey.	

7.4.9 VISUAL, LANDSCAPE AND NIGHT SKY

The Lodge, staff village, solar plant and associated infrastructure introduce built form and artificial lighting into an open desert landscape valued for its sense of place and night sky darkness, a value shared with, and marketed by, neighbouring tourism operators.

Table 18 - Summary of visual, landscape and night sky impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Construction	Landscape character and visual receptors	Visual scarring from new access tracks, cut and fill, laydown areas and the contractor's camp.	Adverse (Negative) Direct Partly Reversible Low Minor Short term Local High Probability (Likely)	Medium	Moderate (6)	• Keep the construction footprint, laydown areas and contractors' camp as compact and screened as practicable. • Reinstate cut and fill areas and remove all construction debris and temporary structures promptly on completion. • Site the contractors' camp out of direct line of sight of guest viewing areas and	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						neighbouring properties where the layout allows.	
Construction	Night sky and nocturnal fauna	Light spill from temporary construction and camp lighting.	Adverse (Negative) Direct Reversible Low Minor Short term Local High Probability (Likely)	Medium	Moderate (6)	• Use only the minimum lighting necessary for safety at the contractors' camp and night work areas. • Use shielded, downward-directed fittings and warm colour temperature lighting where night lighting is required. • Switch off non-essential lighting outside active working hours.	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Operation	Nocturnal fauna and insects	Disturbance of nocturnal fauna and insects by artificial lighting.	Adverse (Negative) Direct Partly Reversible Low Minor Long term Local High Probability (Likely)	Medium	Moderate (6)	• Use shielded, downward-directed, warm colour temperature lighting across the lodge, spa and staff village. • Limit lighting levels and extent to what is needed for guest and staff safety; avoid uplighting and unnecessary decorative lighting. • Fit external lighting with timers or motion sensors where consistent with safety requirements.	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Operation	Landscape character and visual receptors	Visual intrusion of the lodge, spa and staff village into an open desert viewshed.	Adverse (Negative) Direct Partly Reversible Moderate Long term Local Definite (Almost certain)	Medium	Major (8)	• Use building forms, materials, colours and roof profiles that reference the desert landscape and existing reserve architecture, as described in the project design. • Retain natural screening vegetation and topography around the development where the layout allows. • Keep built form to the height and footprint approved in the layout.	Minor (4)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Operation	Landscape character and visual receptors	Visual intrusion of the service hub, solar plant, water tanks and waste area.	Adverse (Negative) Direct Partly Reversible Moderate Long term Local Definite (Almost certain)	Medium	Major (8)	• Site the service hub, solar plant, water tanks and waste area in the staff village location, away from guest viewing areas and screened by topography or vegetation where practicable. • Use non-reflective cladding and recessive colours for tanks and structures. • Maintain the waste area tidy and screened from view.	Minor (4)
Operation	Visual receptors	Reflectivity and colour contrast of built form, glazing	Adverse (Negative) Direct Reversible	Low	Moderate (3)	• Specify low-reflectivity glazing and roofing finishes and	Low (1)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
		and the solar array.	Low Minor Long term Local High Probability (Likely)			recessive, landscape-matched colours for built form. • Orient and angle the solar array to limit glare towards guest areas and neighbouring viewpoints where practicable.	
Operation	Night sky and neighbouring operators	Sky glow and upward light spill reducing night sky darkness.	Adverse (Negative) Direct Reversible Low Minor Long term Regional High Probability (Likely)	Medium	Moderate (6)	• Use fully shielded, downward-directed fittings throughout the lodge, spa and staff village to eliminate upward light spill. • Use the minimum lighting levels required for safety	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						and warm colour temperatures (below 3000K). • Switch off non-essential external lighting after set hours.	
Operation	Neighbouring operators and visitors	Horizontal light spills visible from neighbouring properties and tourist routes.	Adverse (Negative) Direct Reversible Low Minor Long term Local High Probability (Likely)	Medium	Moderate (6)	• Use shielded fittings that direct light downward and inward rather than outward towards neighbouring properties and tourist routes. • Screen perimeter and pathway lighting with landscaping or low bollards where practicable.	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Operation	Night sky and nocturnal fauna	Light spill from glazing, pool and pathway lighting.	Adverse (Negative) Direct Reversible Low Minor Long term Local High Probability (Likely)	Medium	Moderate (6)	• Use low-level, shielded pathway lighting and timers/motion sensors rather than continuous illumination. • Specify glazing and internal lighting design that limits light escape from guest units at night. • Cover or dim pool lighting outside operating hours.	Low (2)

7.4.10 REHABILITATION AND CLOSURE

Areas disturbed during construction and not required for the operational footprint, and the site at decommissioning, depend on successful rehabilitation. Desert vegetation and soils recover slowly, so the adequacy of the rehabilitation specification and a funded closure obligation are material to this outcome.

Table 19 - Summary of rehabilitation and closure impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Construction	Landscape, soils and vegetation	Failure of rehabilitation to establish on areas disturbed during construction.	Adverse (Negative) Direct Partly Reversible Moderate Long term On-site Medium Probability (Possible)	Medium	Moderate (6)	• Prepare and follow a rehabilitation specification (topsoil placement, seeding/brush packing with indigenous species, success criteria) for all areas disturbed during construction but not required for the operational footprint.	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Monitor rehabilitated areas and re-treat where establishment is failing. • Reuse stockpiled topsoil and brush from the same disturbed areas wherever possible.	
Operation	Landscape, soils and vegetation	Absence of a funded and current closure and rehabilitation obligation during operation.	Adverse (Negative) Indirect Partly Reversible Moderate Long term Regional	Medium	Moderate (6)	• Establish and maintain a funded closure and rehabilitation provision for the life of the operation, reviewed periodically against	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
			Medium Probability (Possible)			the estimated cost of the closure and rehabilitation plan. • Keep the closure and rehabilitation plan itself current, reflecting any changes to the approved infrastructure.	
Decommissioning	Landscape, soils and vegetation	Incomplete reinstatement leaving hard standing, foundations, buried services and tracks in place.	Adverse (Negative) Direct Partly Reversible Moderate Long term On-site Medium	Medium	Moderate (6)	• Remove hard standing, foundations, buried services and tracks not required for the site's next approved use, in line with the closure and	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
			Probability (Possible)			rehabilitation plan agreed with the Namib Tsaris Conservancy and the landowner. • Backfill and reshape disturbed areas to blend with surrounding topography before final rehabilitation.	
Decommissioning	Landscape, soils and vegetation	Failure of rehabilitation to establish against agreed success criteria.	Adverse (Negative) Direct Partly Reversible Moderate Long term On-site	Medium	Moderate (6)	• Implement the rehabilitation specification (topsoil placement, seeding/brush packing with indigenous species) against	Minor (4)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
			Medium Probability (Possible)			agreed, measurable success criteria. • Monitor rehabilitated areas post-closure and re-treat any areas that fail to meet the success criteria within the monitoring period.	

7.4.11 EMPLOYMENT, SKILLS, PROCUREMENT AND ECONOMIC BENEFIT

The Project will generate employment, skills development, local and regional procurement opportunities, and associated economic benefits during its construction and operational phases. However, decommissioning will result in the eventual loss of employment, procurement expenditure and tourism-related economic benefits associated with the Lodge. The potential impacts on workers, local and regional businesses, and the wider regional economy are summarised in Table 20.

Table 20 - Summary of employment, skills, procurement and economic benefit impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Decommissioning	Workers/house holds	Loss of wages and household income on closure.	Adverse (Negative) Direct Irreversible Moderate Permanent Local Definite (Almost certain)	Medium	Major (8)	• Give staff reasonable advance notice of closure and, where practicable, assist with placement in other ECC/proponent-linked or conservancy operations. • Comply with Namibian labour law requirements for retrenchment, including notice periods and severance where applicable.	Moderate (6)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Consider a phased wind-down where feasible to soften the impact on staff and their households.	
Decommissioning	Businesses	Loss of local and regional procurement spend on closure.	Adverse (Negative) Indirect Irreversible Low Minor Permanent Regional Definite (Almost certain)	Medium	Major (8)	• Give local and regional suppliers reasonable advance notice of the wind-down of procurement to allow them to adjust. • Settle outstanding accounts with local and regional suppliers promptly on closure.	Moderate (6)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Decommissioning	Regional economy	Loss of conservancy revenue and of tourism capacity in the area.	Adverse (Negative) Direct Irreversible Moderate Permanent Regional Definite (Almost certain)	Medium	Major (8)	• Consult with the Namib Tsaris Conservancy and the landowner well ahead of closure on options for the site's next use, to limit the loss of conservancy tourism revenue and associated benefit-sharing. • Support a managed transition of any conservation or community programmes the Lodge has been contributing to,	Moderate (6)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						rather than an abrupt withdrawal.	

7.4.12 OCCUPATIONAL HEALTH, SAFETY AND EMERGENCY RESPONSE

Construction and operational activities expose workers and, during operation, guests to a range of occupational hazards, compounded by the site's remoteness and the associated delay in medical response.

Table 21 - Summary of occupational health, safety and emergency response impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Construction	Workers	Exposure of construction workers to hazards from earthworks, excavation, working at height, lifting, plant and vehicles.	Adverse (Negative) Direct Irreversible High Major Short term On-site Medium Probability (Possible)	Medium	Moderate (6)	• Implement a site-specific health and safety plan covering earthworks, excavation, working at height, lifting and plant/vehicle operation, aligned with Namibian OHS legislation. • Induct all workers before starting on site and hold regular toolbox talks on	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						the specific hazards of each activity. • Provide and enforce use of appropriate PPE, barricading of excavations and exclusion zones around active plant. • Appoint a competent health and safety officer to supervise compliance for the duration of construction.	
Construction	Workers	Heat stress and delayed medical response arising	Adverse (Negative) Indirect Partly Reversible	Medium	Moderate (6)	• Schedule the most physically demanding work	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
		from the remoteness of the site.	Moderate Short term On-site High Probability (Likely)			outside the hottest part of the day where the construction programme allows, and provide shaded rest areas and adequate drinking water. • Maintain a site first aid capability and a clear medical evacuation procedure with agreed response times, given the site's remoteness. • Train designated first	

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						aiders and keep emergency contact arrangements (nearest clinic, evacuation transport) current and visible on site.	
Operations	Worker	Exposure of lodge staff to kitchen, laundry, maintenance, plant, gas, electrical and vehicle hazards.	Adverse (Negative) Direct Irreversible Moderate Long term On-site Medium Probability (Possible)	Medium	Moderate (6)	• Implement a site-specific occupational health and safety programme covering kitchen, laundry, maintenance, plant, gas, electrical and vehicle hazards, aligned with	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						Namibian OHS legislation. • Induct all staff and provide role-specific training (gas handling, electrical isolation, kitchen safety, etc.) before they undertake that work. • Maintain PPE, guarding and safety equipment relevant to each work area and inspect these regularly.	
Operations	Workers/guests	Delayed medical response for staff and guests	Adverse (Negative) Indirect	Medium	Moderate (6)	• Maintain a trained first aid	Minor (4)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
		arising from the remoteness of the site.	Partly Reversible Moderate Long term On-site High Probability (Likely)			capability on site at all times and a clear medical evacuation procedure with agreed response times for staff and guests. • Keep emergency contact arrangements and evacuation transport (road and, where available, air) current and understood by all staff. • Brief guests on the site's remoteness and	

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						emergency procedures as part of standard arrival orientation.	
Operations	Workers/ guests	Consumption of untreated borehole water containing naturally elevated Fluoride and Nitrate levels by staff and guests.	Adverse (Negative) Direct Partly Reversible Moderate Long term On-site High Probability (Likely)	Medium	Moderate (6)	• Install treatment (such as defluoridation/nitrate removal or filtration) on the potable water supply before it reaches staff and guest taps, sized against the levels recorded in the project hydrogeological study (Namib Hydrosearch, NHN268).	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Test treated water quality against the WRMA Acceptable Standard on a routine schedule and keep records. • Provide an alternative treated or bottled drinking water supply for staff and guests if treated water quality is ever out of specification. • Brief staff and guests that untreated borehole water is	

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						not for drinking, pending confirmation that treatment is functioning to standard.	

7.4.13 LABOUR CONDITIONS, WORKFORCE WELFARE AND LIVELIHOODS

The living and working conditions of construction and operational staff, and the effect of closure on permanent employees and their households, are assessed against Namibian labour law and ECC's standard labour and working conditions criteria.

Table 22 - Summary of labour conditions, workforce welfare and livelihoods impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Decommissioning	Workers and dependants	Loss of permanent position and the Hould come income that depends on them.	Adverse (Negative) Direct Irreversible Moderate Permanent Local Definite (Almost certain)	Medium	Major (8)	• Give staff reasonable advance notice of closure and, where practicable, assist with placement in other ECC/proponent-linked or conservancy operations, as described in the Economic sheet. • Comply with Namibian labour law requirements for retrenchment, including notice periods and	Moderate (6)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						severance where applicable.	

7.4.14 COMMUNITY HEALTH, TRAFFIC, NEIGHBOURING OPERATORS AND STAKEHOLDER RELATIONS

Traffic on the C19 and internal roads, workforce conduct within a conservancy managed for conservation and tourism, and the Project's effect on the wilderness experience sold by neighbouring tourism operators, are assessed together with the ongoing management of stakeholder relations and grievances.

Table 23 - Summary of community health, traffic, neighbouring operators and stakeholder relations impacts

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
Construction	Road users and neighbours	Road safety risk to other users from construction traffic on the C19 and the crossing.	Adverse (Negative) Direct Reversible Moderate Short term Local High Probability (Likely)	Medium	Moderate (6)	• Enforce a reduced speed limit for construction traffic on the C19 and at the site crossing. • Install temporary warning signage at the crossing and site access point for the duration of construction. • Schedule abnormal or high-volume deliveries to avoid peak travel times where practicable. • Brief all drivers on road safety	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						expectations before they are permitted to drive for the project.	
Construction	Neighbouring operators and their guests	Disruption of guest experience at neighbouring lodges and camps by construction noise, dust, lighting and traffic.	Adverse (Negative) Indirect Reversible Moderate Short term Local High Probability (Likely)	Medium	Moderate (6)	• Restrict noisy and dust-generating construction activities to standard daytime working hours. • Use directional, shielded lighting at the contractors' camp and any night work areas. • Notify neighbouring operators of the construction programme and expected	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						disruptive periods in advance so they can inform their guests. • Route construction traffic to minimise passage close to neighbouring guest areas where alternative routes exist.	
Operations	Road users, staff and neighbours	Road safety risk from guest transfers, staff transport and supply vehicles, including staff crossing the C19.	Adverse (Negative) Direct Reversible Moderate Long term Local High Probability (Likely)	Medium	Moderate (6)	• Enforce a reduced speed limit for guest transfer, staff and supply vehicles on the access road and at the C19 crossing.	Minor (4)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Provide a safe, visible crossing point and schedule staff crossings to avoid peak traffic where practicable. • Include road safety in driver induction and refresh it periodically for all vehicle operators.	
Operations	Road users	Ongoing traffic volumes and access road condition over the operational life.	Adverse (Negative) Indirect Reversible Low Minor Long term Local High Probability (Likely)	Low	Moderate (3)	• Maintain the access road condition through the operational life, coordinating with the road authority and neighbouring users where the route is shared.	Low (1)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						• Limit vehicle trips to what is operationally necessary and consolidate supply deliveries where practicable.	
Operations	Neighbouring operators and their guests	Degradation of the wilderness product sold by neighbouring operators through lighting, noise, traffic and visual presence.	Adverse (Negative) Indirect Partly Reversible Moderate Long term Local High Probability (Likely)	Medium	Moderate (6)	• Apply the lighting, noise and visual mitigation measures set out in the Biophysical sheet (shielded downward lighting, plant siting/screening, low-reflectivity finishes) which also protect the wilderness experience sold by	Minor (4)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						neighbouring operators. • Maintain open communication with neighbouring operators so any concerns about noise, lighting or traffic impacts on their guest experience are raised and addressed promptly.	
Operations	Neighbouring lodge operators	Confusion between the proposed lodge's use of "Sanctuary" in its name and the neighbouring,	Adverse (Negative) Indirect Partly Reversible Moderate Long term Local	Medium	Moderate (6)	• Differentiate the lodge's branding, signage and marketing materials clearly from the neighbouring	Low (2)

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
		separately owned Sossusvlei Lodge, with potential reputational and commercial effects on that business.	Medium Probability (Possible)			Sossusvlei Lodge to minimise scope for visitor or booking-channel confusion between the two properties. • Engage directly with the neighbouring lodge operator to acknowledge the concern raised at the public meeting and agree how each property will be referred to in guest-facing and marketing material. • Handle any confusion or	

Activity	Receptor	Potential impact	Effect (nature / type / reversibility / magnitude / duration / extent / probability)	Sensitivity	Pre-mitigation significance	Mitigation measures	Residual significance
						complaint raised by guests or agents promptly through the stakeholder engagement and grievance mechanism.	

7.5 CUMULATIVE IMPACTS

Cumulative impacts arise where the Project's impacts interact with those of other past, present or reasonably foreseeable activities to create an additional effect, as set out in the cumulative impact assessment method described in Chapter 6.

Within the Namib Tsaris Conservancy and the wider Sossusvlei area, the Project's incremental contribution is most relevant to:

- Groundwater abstraction, alongside existing lodges and other water users sharing the same aquifer system;
- night sky darkness and visual sense of place, alongside other tourism developments in the area;
- habitat and wildlife disturbance, alongside the cumulative footprint of existing lodge infrastructure and access roads within the reserve; and
- road traffic and access conditions on the C19, alongside other reasonably foreseeable development along the same route.

The landowner has indicated that a fuel station and supermarket are being planned by others along the route between the conservancy and Sesriem. Should this development proceed, it would represent an additional reasonably foreseeable activity in the area, principally through its contribution to traffic volumes on the shared access route and, to a lesser extent, to the visual and tourism character of the area. Details of this development are not yet available, and it is accordingly noted here rather than scored as part of the assessment; ECC will review its implications for the Project's cumulative impact assessment as further information becomes available.

These cumulative pathways reinforce the significance placed on groundwater management, night sky protection, wildlife disturbance mitigation and road safety in the topic assessments above and are addressed through the same monitoring and management commitments, applied consistently with neighbouring operators and the conservancy.

7.6 SUMMARY OF MITIGATION AND RESIDUAL SIGNIFICANCE

The summary tables in each topic section above (Table 10 to Table 23) set out the mitigation measures recommended for every impact assessed as significant before mitigation, together with the resulting residual significance. No impact is assessed as retaining Major significance once the recommended mitigation measures are properly implemented. Most significant impacts are reduced to Minor or Low residual significance. A smaller number remain at Moderate residual significance because the scope for further mitigation is limited: principally groundwater abstraction, and the permanent loss of employment, procurement spend and conservancy revenue on decommissioning.

The mitigation measures set out in this chapter are consolidated into the Project's Environmental and Social Management Plan (ESMP) in Appendix A, which provides the management framework for their implementation, monitoring and reporting throughout the Project life cycle.

8 CONCLUSION

8.1 SUMMARY OF THE ASSESSMENT UNDERTAKEN

Environmental Compliance Consultancy (Pty) Ltd (ECC) was appointed by Pula Cost Consulting (Pty) Ltd, on behalf of Neuhof Reserve (Pty) Ltd, to prepare this scoping plus impact assessment report for the proposed construction and operation of the Sanctuary Sossusvlei Lodge within the Namib Tsaris Conservancy, Hardap Region. The report has been prepared in terms of Section 32(1) of the Environmental Management Act No. 7 of 2007 (EMA) and its 2012 Regulations, for which the Ministry of Environment, Forestry and Tourism (MEFT) is the competent authority.

As set out in Chapter 1, this report combines the scoping and impact assessment phases of the ESIA process into a single report. No separate specialist field investigations were identified as necessary at this stage; the baseline described in Chapter 5 and the impacts assessed in Chapter 7 are accordingly based on desktop data sources and an ECC site visit, which included stakeholder engagement, undertaken during July 2026.

Each preceding chapter has addressed one part of the assessment:

- Chapter 2 sets out the approach to the assessment, the screening of the Project and the public consultation process undertaken to date;
- Chapter 3 reviews the legal and regulatory framework applicable to the Project;
- Chapter 4 describes the Project and the activities it comprises;
- Chapter 5 establishes the biophysical and social baseline against which impacts are measured;
- Chapter 6 sets out the impact identification and evaluation methodology; and
- Chapter 7 presents the impact assessment findings and the mitigation measures recommended to manage them.

Together these chapters fulfil the objectives set out in Section 1.3, describing the Project and baseline environment, identifying the applicable legal framework, recording the public consultation process, assessing potential impacts and their significance, and developing the management and mitigation measures set out in the Environmental and Social Management Plan (ESMP).

8.2 SUMMARY OF KEY FINDINGS

A total of 104 potential impacts were identified and assessed across the biophysical, social and economic environments, covering the construction, operational and decommissioning phases of the Project. Of these, 61 were assessed as Moderate or Major (negative) significance before mitigation and are considered significant; 35 were assessed as Low or Minor (negative) significance and are considered not significant and are expected to be adequately managed through standard design and best practice measures set out in the ESMP; and 8 are beneficial

impacts, principally associated with employment creation, skills development and the local and regional tourism economy.

With the mitigation measures set out in Chapter 7 implemented, most significant impacts are reduced to Minor or Low residual significance (23 and 32 impacts respectively, out of the 61 significant impacts), and no adverse impact identified for the Project is assessed as retaining Major significance after mitigation. A smaller number of impacts (6) remain at Moderate residual significance given the constraints on further mitigation available for them. These relate principally to groundwater abstraction, which is the site's sole water source and is shared with neighbouring users, and to the permanent loss of employment, procurement spend and conservancy revenue on decommissioning of the Lodge.

The Project's incremental contribution to cumulative impacts in the Namib Tsaris Conservancy and the wider Sossusvlei area is most relevant to groundwater abstraction alongside existing lodges and other water users sharing the same aquifer system, to night sky darkness and visual sense of place alongside other tourism development in the area, and to habitat and wildlife disturbance alongside the cumulative footprint of existing lodge infrastructure and access roads within the reserve, as discussed in Chapter 7. These cumulative pathways are addressed through the same mitigation and monitoring commitments set out in the ESMP, applied consistently with neighbouring operators and the conservancy.

Two beneficial impacts, the creation of permanent operational employment and the addition of high-value tourism capacity to the Sossusvlei area, are assessed as retaining Major significance after the enhancement measures recommended in Chapter 7, reflecting the Project's positive contribution to the local and regional economy.

8.3 Environmental and Social Management Plan

The mitigation, management and monitoring measures recommended for every impact assessed in Chapter 7 are consolidated into the Project's final Environmental and Social Management Plan (ESMP), provided in Appendix A. The ESMP provides development standards and commitments to ensure that the identified potential environmental and social impacts are avoided, minimised, mitigated and, where relevant, enhanced as far as reasonably practicable, and that applicable statutory and other legal obligations are fulfilled. It provides the management framework for the planning, implementation, monitoring and reporting of these measures throughout the Project life cycle, from construction through operation to eventual decommissioning.

8.4 Way forward

The draft scoping plus impact assessment report and the draft ESMP, with their supporting appendices, were made available to registered interested and affected parties (I&APs),

identified key stakeholders, neighbouring properties and MEFT for review and comment for 14 days, from 20 October 2026 to 02 November 2026, in accordance with the public consultation process described in Chapter 2. No comments were received during the review period, as recorded in the comments and responses report in Appendix B.

As no comments were received, no material changes to the assessment were required. This final scoping plus impact assessment report and the final ESMP are submitted to MEFT, Department of Environmental Affairs and Forestry (DEAF), for review and a record of decision (RoD) on the application for an environmental clearance certificate for the Project.

8.5 CONCLUSION

Based on the assessment undertaken and summarised in this report, ECC is of the opinion that the potential environmental and social impacts associated with the construction, operation and eventual decommissioning of the proposed Sanctuary Sossusvlei Lodge can be reduced to acceptable levels, provided the mitigation, management and monitoring measures set out in Chapter 7 and consolidated in the final ESMP are effectively implemented and maintained throughout the Project life cycle. No adverse impact identified for the Project is assessed as retaining Major significance once these measures are applied, and the Project is expected to make a positive contribution to local and regional employment and the tourism economy.

ECC accordingly recommends that the Project be considered by MEFT for an environmental clearance certificate, on condition that the mitigation, management and monitoring measures set out in the final ESMP are implemented.

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