

Proposed Holiday Resort Development, Finfoot Lake Reserve, Vaalkop Dam,
Rustenburg Local Municipality, North West Province



Draft Basic Assessment Report

Ref: N/A

Prepared by:

Nuleaf Planning and Environmental (Pty) Ltd

Prepared for:

Finfoot Lake Reserve

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FOREWARD

This report constitutes the **Draft Basic Assessment Report**, and has been circulated digitally for Stakeholder Comment on 21 July 2021.

Nuleaf Planning and Environmental would like to thank all Stakeholders for their participation and input into this process to date, and hereby invite Stakeholders to review this draft report and to provide feedback, input, concerns and comments.

All written comments received, including Nuleaf's response to each, will be captured in a Comments and Responses Register, which will be made available to all I&AP's and included in the Final Basic Assessment Report for submission to the North West Department of Economic Development, Environment, Conservation and Tourism (DEDECT).

All comments on the Draft BAR must be **in writing** and must reach Nuleaf by no later than close of business on **23 August 2021**.

Please mark all comments for the attention of:

Tosca Grünewald

Email: tosca@nuleafsa.co.za

Tel: +27724788856

ACRONYMS AND ABBREVIATIONS

AADD:	Average Annual Daily Demand
BA:	Basic Assessment
BAR:	Basic Assessment Report
CBA:	Critical Biodiversity Area
CMP:	Construction Management Plan
DARDLEA:	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs
DWS:	South African National Department of Water and Sanitation
EA:	Environmental Authorisation
ECO:	Environmental Control Officer
EIA:	Environmental Impact Assessment
EMPr:	Environmental Management Programme
EMS:	Environmental Management System
EO:	Environmental Officer
I&AP:	Interested and Affected Party
IDP:	Integrated Development Plan
IEM:	Integrated Environmental Management
KNP	Kruger National Park
LED:	Local Economic Development
MTPA:	Mpumalanga Tourism and Parks Agency
NEMA:	National Environmental Management Act, Act No. 107 of 1998
NEMPAA:	National Environmental Management: Protected Areas Act, Act No. 57 of 2003
NPAES:	National Protected Area Expansion strategy
OMP:	Operational Management Plan
RLM:	Rustenburg Local Municipality
SAHRA:	South African Heritage Resources Agency

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GLOSSARY OF TERMS

Alien Vegetation:	Alien vegetation defined as undesirable plant growth which shall include, but not be limited to all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA) regulations.
Alien Species:	A plant or animal species introduced from elsewhere: neither endemic nor indigenous.
Alternatives:	In relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to: (a) The property on which or location where it is proposed to undertake the activity; (b) The type of activity to be undertaken; (c) The design or layout of activity; (d) The technology to be used in the activity; and (e) The operational aspects of the activity.
Applicant:	Any person who applies for an authorization to undertake an activity or to cause such activity to be undertaken as contemplated in the National Environmental Management Act (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2010.
Buffer zone:	Is a collar of land that filters out inappropriate influences from surrounding activities, also known as edge effects, including the effects of invasive plant and animal species, physical damage and soil compaction caused by trampling and harvesting, abiotic habitat alterations and pollution. Buffer zones can also provide more landscape needed for ecological processes, such as fire.
Construction Activity:	Any action taken by the Contractor, his subcontractors, suppliers or personnel during the construction process.
Depression Wetland:	Endorheic wetland types that drain inward and are therefore not connected to the rest of the drainage network.
Ecology:	The study of the inter relationships between organisms and their environments.
Environment:	All physical, chemical and biological factors and conditions that influence an object and/or organism.
Environmental Impact:	An Impact or Environmental Impact is the degree of change to the environment, whether desirable or undesirable, that will result from the effect of a defined activity. An Impact may be the direct or indirect consequence of the activity and may be simple or cumulative in nature.
Environmental Impact Assessment:	Assessment of the effects of a development on the environment.
Environmental Management Programme:	A legally binding working document, which stipulates environmental and socio-economic mitigation measures that, must be implemented by several responsible parties throughout the duration of the proposed project.

Indigenous:	Means a species that occurs, or has historically occurred, naturally in a free state within the borders of South Africa. Species that have been introduced to South Africa as a result of human activity are excluded (South Africa (Republic) National Environmental Management: Biodiversity Act, 2004: Chapter 1).
Interested and Affected Party:	Any person, group of persons or organization interested in or affected by an activity contemplated in an application, or any organ of state that may have jurisdiction over any aspect of the activity.
Invasive vegetation:	Plant species that show the potential to occupy in unnatural numbers, any disturbed area, including pioneer species.
Mitigate:	The implementation of practical measures to reduce adverse impacts Public Participation Process: is a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters.
Public Participation:	The legislated process contemplated in terms GN R543, in which all potential interested and affected parties are informed of the proposed project and afforded the opportunity to input, comment and object. Specific requirements are listed in terms of advertising and making draft reports available for comment.
Road Reserve:	The road reserve is a corridor of land, defined by co-ordinates and proclamation, within which the road, including access intersections or interchanges, is situated. A road reserve may, or may not, be bounded by a fence.
Road Width:	The area within the Road Reserve including all areas beyond the Road Reserve that are affected by the continuous presence of the road i.e., the verge.
Red data plant species:	Are fauna and flora species that require environmental protection based on the World Conservation Union (IUCN) categories and criteria.
RoD:	Record of Decision pertaining to the Application for Environmental Authorisation issued by the Competent Authority. The RoD is legally binding on the Applicant and may contain a positive or negative decision on the Application as well as conditions and provisions for each.
Soil Compaction:	Mechanically increasing the density of the soil, vehicle passage or any other type of loading. Wet soils compact easier than moist or dry soils.
Species:	Means a kind of animal, plant or other organism that does not normally interbreed with individuals of another kind. The term "species" include any sub-species, cultivar, variety, geographic race, strain, hybrid or geographically separate population (South Africa [Republic] National Environmental Management: Biodiversity Act, 2004: Chapter 1).
The Contractor:	The contractor, as the developer's agent on site, is bound by the ROD and EMP conditions through his/her contract with the developer, and is responsible for ensuring that conditions of the EMP and ROD are strictly adhered to at all times. The contractor must comply with all orders (whether verbal or written) given by the ECO, project manager or site agent in terms of the EMP.

- The Developer: Remains ultimately responsible for ensuring that the development is implemented according to the requirements of the EMP and the conditions of the Environmental Decision throughout all phases of the project.
- The Environmental Control Officer (ECO): The ECO is appointed by the developer as an independent monitor of the implementation of the EMP i.e., independent of the developer and contractor.
- The Environmental Officer (EO): The Contractor shall submit to the Site Agent a nominated representative of the Contractor as an EO to assist with day-to-day monitoring of the construction activities for the contract.
- Vegetation: Is a collective word for plants occurring in an area.
- Vulnerable: A taxon is 'Vulnerable' when it is not 'Critically Endangered' or 'Endangered' but is facing a high risk of extinction in the wild in the medium-term future.
- Watercourse: A river or spring; a natural channel in which water flows regularly or intermittently; a wetland, lake or dam into which, or from which, water flows; and any collection of water which the Minister may by notice in the Government Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks" (South Africa [Republic] National Water Act, 1998).

EXECUTIVE SUMMARY

The proposed development will entail the construction of 6 Tented Chalets, as well as, 15 Holiday Cottages within the Rustenburg Local Municipality within the Finfoot Lake Nature Reserve. The proposed development is also adjacent to the Vaalkop Dam and the formal Protected Area, the Vaalkop Dam Nature Reserve. All associated civil infrastructure (water, electricity and waste treatment) will be included and services infrastructure to all the subdivisions will be shared between all the properties, to be operated and maintained by the Finfoot Lake Reserve Management.

The proposed development falls within the within Central Sandy Bushveld vegetation type, which is not listed as a Threatened Ecosystem. The study area is also not situated within any centres of plant endemism. The NWPBCA has classified most of the study area to be within Other Natural Areas (ONA). Two small areas in the central and western portions of the study area are classified as Ecological Support Areas (ESA) 1 – Protected Areas Buffer. Two vegetation communities were identified within the study area, namely Low Closed Woodland and Plains Woodland. Both communities have an SEI of Medium. Disturbance levels within the study area are low to moderate, with two tourist facilities and three dwellings having already been constructed. The alien plant infestation levels are low, with only one species (* *Opuntia stricta*) located. The indigenous tree *Senegalia mellifera* has invaded large areas, especially on the heavy clay soils. No threatened plants were located, and only one is likely, namely the NT-listed *Drimia sanguinea*. Three confirmed trees are protected under the NFA, namely *Boscia albitrunca*, *Senegalia erioloba* and *Combretum imberbe*. One threatened mammal is confirmed, namely Tsessebe, but only one individual is present on the reserve. One mammal (Serval) and one bird (European Roller) are listed as NT and are likely to regularly utilize the natural vegetation within the study area, at least on a regular basis. No raptor nests were located.

No cultural heritage sites were found within the study area.

The construction and operation of the proposed Finfoot Holiday Resort development will have a visual impact on the scenic resources of the study area. However, mitigation of the visual impact is possible and will go far in reducing the magnitude of visual impacts discussed by further softening the appearance of the development within its context. Considering all factors, it is concluded that the development is appropriate within its context from a visual perspective, and that the anticipated visual impacts are neither unacceptable in nature nor excessive in magnitude.

The construction impacts, if effectively managed according to the mitigation measures proposed in this report, specialist reports and the draft environmental management programme (EMPr), will mostly be of low significance, post mitigation. It should be noted that moderate post mitigation significance ratings are anticipated for the risk to ecological function of the Vaalkop Dam and drainage lines and disturbance of sensitive habitats. This is mainly due to the placement of infrastructure in areas of high sensitivity areas (i.e., watercourse buffers). Operational impacts can be similarly mitigated and residual impacts are expected to be of low significance overall. No post mitigation impacts of high significance are expected.

Positive impacts include job creation and employment opportunities for both the construction and operational phases, skills transfer and development. Diversifying the tourism offerings within the region will also have an overall positive impact.

It is, however, recommended that a geotechnical engineer is appointed prior to the commencement of construction on the Holiday Cottages sites 9-11 and 13-15 located on Portions 65-67 and 69 -71 to undertake a geotechnical report for all these identified sites located on the heavy clay soils. Any construction undertaken on these sites should be carefully planned and implemented and must be done within the bounds of this report, as well as, per the recommendations of the geotechnical report.

Assuming that the recommendations are implemented and adhered to, there is no reason why the proposed Finfoot Holiday Resort development should not take place. There are no fatal flaws to this project, and all potentially negative impacts may be mitigated through careful management during all phases of the project lifecycle. The Environmental Assessment Practitioner therefore recommends that the development be supported.

SECTION A: ACTIVITY INFORMATION

1. PROJECT DESCRIPTION

1.1. Development Components

The proposed development will entail the construction of 6 Tented Chalets, as well as, 15 Holiday Cottages within Finfoot Lake Nature Reserve in the Rustenburg Local Municipality, approximately 40 km north-east of the town of Rustenburg, in the North-West Province. The proposed development is also adjacent to the Vaalkop Dam and the formal Protected Area, the Vaalkop Dam Nature Reserve.

The proposed development is located on the following farm portions:

- Portion 5, 6, 51, 52, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70 & 71 of the Farm Vaalkop 76-JQ

Tented Chalets

These 6 proposed Tented Chalets will consist of a combination of 3-bedroom, 3-bathroom, 8 sleeper luxury tents and 2-bedroom, 2-bathroom, 6 sleeper luxury tents. The proposed 6 Tented Chalets will be able to sleep a maximum of 48 beds. A 500m² maximum development footprint is expected per Tented Chalet (this will be less for the 2-bedroom Tented Chalets).

Built on a raised timber deck, each luxury Tented Chalets will include 2 to 3 bedrooms and bathrooms with outdoor shower facilities, a kitchen and lounge area. While each luxury Tented Chalet features a raised timber viewing deck, plunge pool, car port and a private, shaded boma braai area.

Holiday Cottages

The 15 proposed Holiday Cottages will be 4-bedroom, 4-bathroom units that can sleep 8 – 10 people. These self-catering Holiday Cottages will each consist of a large open-plan kitchen, lounge and dining room area, opening out onto a wooden wrap around deck. Located above the lounge area will be an upstairs loft with outdoor timber deck area. Additionally, each Holiday Cottage will feature a medium sized plunge pool, undercover patio and braai area overlooking the Vaalkop Dam. The two main bedrooms will have en-suite bathrooms. There will also be 2 additional detached bathrooms, as well as, an additional guest toilet. A maximum 1500m² development footprint is expected for each Holiday Cottage.

Services

All associated civil infrastructure (water, electricity and waste treatment) will be included and services infrastructure to all the subdivisions will be shared between all the properties, to be operated and maintained by the Finfoot Lake Reserve Management.

The bulk services provision as well as the internal services will be provided by the developer. These services will include the following:

- Gravel roads
- Potable water
- Septic tanks & French Drains (sewer) or Waste Water Treatment Plants
- Storm water control
- Electricity
- Internal collection of solid waste

These services will remain the property of the developer / management and will be maintained by Finfoot Lake Reserve Management with funds obtained via levies and accommodation fees paid.

Advantages of these sites for the proposed development include the following:

- Contributing to local economic growth through the establishment of a viable economic activity.

- Contributing to the ongoing conservation of the area. The increase of local revenue will allow for the continued conservation and protection of the area.
- The proposed development will benefit the local communities in terms of employment opportunities and job creation.
- Skills development and training will also be a benefit.
- The decision to make use of Eskom is a conventional on-grid energy solution of which the capital costs are known and existing service infrastructure is already in place.
- Majority of the site will remain natural and will remain natural
- The 100 m buffer and the full supply level of the adjacent Vaalkop Dam has been respected.

Disadvantages of this site for the proposed activity include the following:

- Portion of the site is located within an Ecological Support Areas (ESA) where development should proceed with discernment.
- Location of proposed infrastructure within 32m of a watercourse
- Existing energy supply, which will be extended, is not renewable and sustainable green technology.
- The use of Eskom power entails the requirement for ecologically and sometimes visually invasive electrical infrastructure (cabling / overhead lines) to each of the sites.
- The use of Eskom power entails an increase in the extent of the development footprint (owing to the fact that construction is taking place outside of the proposed development footprints).
- The long-term cost of energy from Eskom is set to increase significantly in the future, meaning a long-term escalation in operational energy costs.

1.2. Detailed description of the listed activities associated with the project as applied for

Indicate the number and date of the relevant notice:	Activity No (s) and Activity Description (in terms of the relevant notice)	Describe each listed activity as per project description
GN.R. 327, 4 December 2014	12 (ii) (c): The development of (ii) infrastructure or structures with a physical footprint of 100 square metres or more where such a development occurs (c) within 32 metres of a watercourse.	Construction of two Holiday Cottages (each with a development footprint of 1500m ²) will be undertaken within 32m of a watercourse. The two Holiday Cottages are located on Portion 66 and 68.
	27: The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation.	A total area of 2.55 ha will be cleared for the proposed development. It is expected that in total 3000m ² will be cleared for the Tented Chalets (max 500m ² / Tented Chalet) and 22 500m ² for the Holiday Cottages (max 1500m ² /Holiday Cottage).
GN.R. 324, 4 December 2014	6 (h) (vi): The development of resorts, lodges, hotels, and tourism or hospitality facilities that sleeps 15 people or more in (h) North West (ii) and (vi) areas within a watercourse or wetland, or within 100 meters from the edge of a watercourse or wetland.	Four Holiday Cottages sleeping a total of 40 people (each cottage sleeping 10 people) will be constructed within 100m from the edge of a watercourse. The four Holiday Cottages are located on Portion 65, 66, 67 and 68.
	12 (h) (vi): The clearance of an area of 300 square meters or more of indigenous vegetation in (h) North West (vi) areas within a watercourse or wetland, or within 100 meters from the edge of a watercourse or wetland.	Four Holiday Cottages totally a clearance area of 6000m ² (max 1500m ² /Holiday Cottage) will be constructed within 100m from the edge of a watercourse. The four Holiday Cottages are located on Portion 65, 66, 67 and 68.

	14 (ii) (c); (h) (vi): The development of (ii) infrastructure or structures with a physical footprint of 10 square meters or more where such development occurs (c) within 32 m of a watercourse in (h) North West in (iv) areas within 5 km from protected areas identified in term of NEMPAA	Construction of two Holiday Cottages (each with a development footprint of 1500m ²) will be undertaken within 32m of a watercourse. The two Holiday Cottages are located on Portion 66 and 68. Both of these portions are also located within 5km from the Vaalkop Dan Nature Reserve.
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Table 1: Listed activities associated with the project

2. FEASIBLE AND REASONABLE ALTERNATIVES

No alternatives are under consideration for the proposed development. Extensive planning and layout options were investigated prior to the submission of the application to ensure that the positioning of the Tented Chalets and Holiday Cottages would not intrude on sensitive visual receptors and environmental sensitivities. The preferred layout respects the 100 m buffer and the full supply level of the Vaalkop Dam and other watercourse buffers. Only 2 Holiday Cottages are located within the 32m buffer of watercourses on site and 4 Holiday Cottages are located within the 100m buffer of watercourses on site. The layout of the Tented Chalets and Holiday Cottages is designed to capitalize on the views offered over the Vaalkop Dam.

2.1. Coordinates of proposed site

Please refer to the table below for the coordinates of the site centre points of the development site.

SITE NO	SITE NAME	FARM PORTION	SITE CENTRE COORDINATES
1.	TENT 1	6	25°19'38.09"S 27°26'4.30"E
2.	TENT 2	6	25°19'37.48"S 27°26'2.61"E
3.	TENT 3	5	25°19'37.77"S 27°26'0.98"E
4.	TENT 4	5	25°19'39.44"S 27°26'1.53"E
5.	TENT 5	6	25°19'40.99" S 27°26'3.40"E
6.	TENT 6	6	25°19'42.54"S 27°26'5.68"E
7.	HOLIDAY COTTAGE 1	57	25°19'35.98"S 27°26'32.66"E
8.	HOLIDAY COTTAGE 2	58	25°19'36.00"S 27°26'35.77"E
9.	HOLIDAY COTTAGE 3	59	25°19'36.22"S 27°26'38.90"E
10.	HOLIDAY COTTAGE 4	60	25°19'36.38"S 27°26'41.89"E
11.	HOLIDAY COTTAGE 5	61	25°19'36.41"S 27°26'44.73"E
12.	HOLIDAY COTTAGE 6	62	25°19'36.56"S 27°26'47.54"E
13.	HOLIDAY COTTAGE 7	63	25°19'36.88"S 27°26'50.57"E
14.	HOLIDAY COTTAGE 8	64	25°19'35.68"S 27°26'57.21"E
15.	HOLIDAY COTTAGE 9	65	25°19'35.17"S 27°27'0.80"E
16.	HOLIDAY COTTAGE 10	66	25°19'34.56"S 27°27'4.21"E
17.	HOLIDAY COTTAGE 11	67	25°19'33.11"S 27°27'7.58"E
18.	HOLIDAY COTTAGE 12	68	25°19'31.50"S 27°27'10.57"E
19.	HOLIDAY COTTAGE 13	69	25°19'28.29"S 27°27'18.10"E
20.	HOLIDAY COTTAGE 14	70	25°19'27.58"S 27°27'20.22"E
21.	HOLIDAY COTTAGE 15	71	25°19'26.92"S 27°27'22.64"E

Table 2: Coordinates of the sites centre point

2.2. Physical size of the activity

Tent 1
Tent 2

Size of the activity (Areas):

	0.05 ha (500 m ²)
	0.05 ha (500 m ²)

Tent 3	0.05 ha (500 m ²)
Tent 4	0.05 ha (500 m ²)
Tent 5	0.05 ha (500 m ²)
Tent 6	0.05 ha (500 m ²)
Holiday Cottage 1	0.15 ha (1 500 m ²)
Holiday Cottage 2	0.15 ha (1 500 m ²)
Holiday Cottage 3	0.15 ha (1 500 m ²)
Holiday Cottage 4	0.15 ha (1 500 m ²)
Holiday Cottage 5	0.15 ha (1 500 m ²)
Holiday Cottage 6	0.15 ha (1 500 m ²)
Holiday Cottage 7	0.15 ha (1 500 m ²)
Holiday Cottage 8	0.15 ha (1 500 m ²)
Holiday Cottage 9	0.15 ha (1 500 m ²)
Holiday Cottage 10	0.15 ha (1 500 m ²)
Holiday Cottage 11	0.15 ha (1 500 m ²)
Holiday Cottage 12	0.15 ha (1 500 m ²)
Holiday Cottage 13	0.15 ha (1 500 m ²)
Holiday Cottage 14	0.15 ha (1 500 m ²)
Holiday Cottage 15	0.15 ha (1 500 m ²)
Finfoot Holiday Resort Development Total	2.55 ha (25 500 m²)

2.3. No- project Alternative

The No-go Alternative implies that the proposed Finfoot Holiday Resort development and associated infrastructure will not take place. In this scenario, the receiving environment will not be impacted upon negatively in any manner, with particular reference to protected flora and surface water.

However, it should also be noted that no positive impacts will be realized such as job creation and employment opportunities, skills transfer and development.

This would not be ideal owing to the high unemployment rate in the local municipality and the fact that the majority of the population lives in a rural environment. Additionally, direct employment benefits and community beneficiation will not materialize. In light of the above, as well as the fact that all negative impacts can be adequately mitigated and managed, it is not recommended that the No-go Alternative be supported.

3. SITE ACCESS

Ready access is available to the proposed development site from various internal roads within the Finfoot Lake Reserve via the R510.

4. LOCALITY MAP

Please refer to Appendix A.1 for the Locality Map.

5. LAYOUT/ ROUTE PLAN

Please refer to Appendix A.2 for the Layout Map.

6. SENSITIVITY MAP

Please refer to Appendix A.3 for the site Sensitivity Map.

7. SITE PHOTOGRAPHS

Please refer to Appendix B for Photographs taken at the 8 compass points.

8. FACILITY ILLUSTRATION

Please refer to Appendix C for the Facility Illustration(s).

9. ACTIVITY MOTIVATION

a) IDP, SDF and other guidelines

The proposed Finfoot Holiday Resort development is situated within the Rustenburg Local Municipality (RLM). The RLM is one of 21 local municipalities in the North West Province and forms part of the Bojanala District Municipality. It represents the core part of platinum mining in South Africa. The vision of the RLM IDP is to create a world area where all communities enjoy a high quality of life and diversity. According to the IDP the provincial economy needs to become more productive, more competitive and more diversified in its economic offerings moving away from mining as the main economic driver. Therefore seven (7) strategic priority areas have been identified in order to achieve this goal. Of the seven (7) strategic priority areas the two that the proposed development would contribute towards is drive diversified economic growth, job creation and transform, as well as, maintain a vibrant and sustainable rural development.

Amongst others one of the prioritised sectors identified for their potential to encourage and drive growth, as well as, their ability to create employment is construction and infrastructure, as well as, tourism, both of which will be undertaken through the proposed Finfoot Holiday Resort development. Rural economies will be activated through tourism investments such as the one proposed at Finfoot Lake Reserve. Another provincial priority is environmental sustainability through the commitment to the protection of biodiversity and the protection of resource critical areas.

The Bojanala Platinum District Municipality Environmental Management Framework (EMF) indicates that the Finfoot Lake Reserve is located within Zone E: Agricultural Zone II. The Agriculture Zone represents areas deemed suitable for further agricultural development for both grazing and cultivation purposes. This land may also be utilised for other types of development.

Since the current land use is Conversation / Tourism and not agriculture, it is surrounded on three of its four sides by Zone F: Biodiversity Zone and contains areas zoned as ESAs. The more stringent management guidelines of the Biodiversity Zone will be applied to the site to try ensure its protection and inclusion into the Biodiversity Zone in the future. The Biodiversity Zone represents areas of high and significant biodiversity in the district. Areas of high biodiversity includes, amongst others, Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs). The following general management guidelines are applicable for Zone f:

- Biodiversity and sensitive topographical features should be protected at all costs
- Before any non-conservation related activity is to be considered a detailed specialist study has to be conducted by an accredited scientist to determine the impacts of the envisaged activity on not only the site but also on the larger area.
- Activities should be limited to conservation related and low-impact related activities.
- The guidelines contained in the North West Province Biodiversity Sector Plan are applicable and should be applied within this zone.

b) Needs and Desirability

Tourism plays an increasingly important role within the RLM. The typical bushveld climate and vegetation of the municipal area, as well as, the unique topography offers several opportunities for tourism and eco-tourism. One of the primary tourism areas located within the municipal area is the Vaalkop Dam Nature Reserve. Lying near Beestekraal, north-east of Rustenburg, the Vaalkop Dam Nature Reserve has an 800ha section of the Reserve which has been set aside as a bird sanctuary, which is not open to the general public. The Reserve hosts over 340 species of birds. In addition, the Reserve is tucked with a variety of bushveld game species and the dam is stocked with many fish species. A section of the dam has been set aside for water sports.

Despite the above tourism attraction, the most prominent tourist destinations in the district are not located within the RLM area itself, but on its borders. This offers a unique opportunity for development of world class tourism offerings within RLM. The proposed Finfoot Holiday Resort development could be one such development. It will help ensure the long-term protection of this portion of land as a conservation area through funds obtained via the fees paid by the guests.

The benefits of the proposed development are positive, contributing to economic growth, conservation and diversification of the region. Additionally, jobs will be created during the construction phase and operational phase, which is ideal in the RLM where the unemployment rate is high.

The benefits of proposed project to the society in general include the following:

- Contributing to local economic growth through the establishment of a viable economic activity.
- Contributing to the ongoing conservation of the area. The increase of local revenue will allow for the continued conservation and protection of the area.

Not only does the proposed Finfoot Holiday Resort development fulfil the goals as listed in the RLM IDP but it also fulfils the requirements of the Biodiversity Zone F that surround it as identified in the EMF as follows:

- Biodiversity and sensitive topographical features have been identified as part of this report and have been avoided in order to ensure their protection.
- Detailed specialist studies have been conducted by accredited scientists to determine the impacts of the envisaged activity on not only the site but also on the larger area.
- The proposed activities have been limited to conservation related accommodation and low-impact related activities.
- The guidelines contained in the North West Province Biodiversity Sector Plan have been applied on the site and were used to inform the layout of the proposed development.

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

The following legislation may also be applicable:

TITLE OF LEGISLATION, POLICY OR GUIDELINE	APPLICABILITY TO THE PROJECT	ADMINISTERING AUTHORITY	DATE
LEGAL FRAMEWORK			
Constitution of Republic of South Africa (Act No.108 of 1996):	This is the fundamental law of South Africa, setting out the Bill of Rights as well as the relationship of various government structures to each other.	National Government	1996
Conservation of Agricultural Resources Act (Act No. 43 of 1983):	Provides for control over the utilization of the natural agricultural resources of the Republic. The proposed project will be required in terms of this legislation to ensure that: <ul style="list-style-type: none"> ▣ The soil mantle is protected and conserved, ▣ The natural water sources are protected, ▣ Vegetative cover is conserved and weeds and invader plants are removed from the site. 	Department of Agriculture	1983
National Environmental Management Act (Act No. 107 of 1998)	To provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote cooperative governance and procedures for co-ordinating environmental functions exercised by organs of state; to provide for certain aspects of the administration and enforcement of other environmental management laws; and to provide for matters connected therewith.	Department of Environmental Affairs	1998
National Environmental Management: Protected Areas Act (Act No. 57 of 2003):	The Act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes; for the establishment of a national register of all national, provincial and local protected areas; for the management of those areas in accordance with national norms and standards; for intergovernmental co-operation and public consultation in matters concerning protected areas, and for matters in connection therewith. The proposed development is adjacent to the Kruger National Park, a Protected Area in terms of this Act.	Department of Environmental Affairs	2003
National Environmental Management: Biodiversity Act (Act No. 10 of 2004):	The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework set out by NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed (see below). Rare or protected species may be affected during construction. The Act lists species that are threatened or require protection to ensure their survival in the wild, while regulating the activities, which may involve such listed threatened or protected species and activities which may have a potential impact on their long-term survival. The Act has listed flora and	Department of Environmental Affairs	2004

	fauna species.		
National Spatial Biodiversity Assessment, 2011:	The National Spatial Biodiversity Assessment (NSBA) classifies areas as worthy of protection based on its biophysical characteristics, which are ranked according to priority levels.	Department of Environmental Affairs	2011
National Forests Act (Act No. 84 of 1998):	This Act provides for the management, utilisation and protection of forests through the enforcement of permitting requirements associated with the removal of protected tree species, as indicated in a list of protected trees (first promulgated in 1976 and updated since). Although not anticipated, should any protected tree species require removal or relocation within the project area, a permit will be required.	Department of Agriculture, Forestry and Fisheries	1998
National Veld and Forest Fire Act (Act No. 101 of 1998)	The purpose of this Act is to prevent and combat veld, forest and mountain fires throughout the Republic. The Act provides for a variety of institutions, methods and practices for achieving this purpose.	Department of Water Affairs	1998
National Heritage Resources Act (Act No. 25 of 1999)	The National Heritage Resources Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 hectares (ha) and where linear developments exceed 300 metres in length. In this regard, the proposed development site will be subject to engagement with the South African Heritage Resources Agency (SAHRA). Potential impact on cultural heritage, paleontological or archaeological resources through excavation activities or disturbance will need to be monitored. Permits may be required per the National Heritage Resources Act (Act No. 25 of 1999).	South African Heritage Resources Agency (SAHRA)	1999
The National Water Act (Act No. 36 of 1998)	This Act aims to provide management of the national water resources to achieve sustainable use of water for the benefit of all water users. The proposed development will have to ensure that local water resources are protected, used, developed, conserved, managed and controlled in a responsible way.	Department of Water Affairs	1998
The National Water Services Act (Act No. 108 of 1997)	The Act legislates the necessity to provide for the rights of access to basic water supply and basic sanitation; to provide for the setting of national standards and of norms and standards for tariffs; to provide for water services development plans; to provide a regulatory framework for water services institutions and water services intermediaries; to provide for the establishment and disestablishment of water boards and water services committees and their powers and duties; to provide for the monitoring of water services and intervention by the Minister or by the relevant Province; to provide for financial assistance to water services institutions; to provide for certain general powers of the Minister; to provide for the gathering of information in a national information system and the distribution of that information; to repeal certain laws; and to provide for matters connected therewith.	Department of Water Affairs	1997
National Environmental Management Waste Act	The Waste Act reforms the law regulating waste management in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation.	Department of Environmental Affairs	2008

*Proposed Holiday Resort Development, Finfoot Lake Reserve, Vaalkop Dam, Rustenburg Local Municipality,
North West Province*

(Act No. 59 of 2008)	The proposed development will be subject to this Act in terms of the disposal of waste.		
Hazardous Substances Act (Act No. 15 of 1973)	To provide for the control of substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances, and for the control of certain electronic products; to provide for the division of such substances or products into groups in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances and products; and to provide for matters connected therewith.	Department of Health	1973
National Environmental management Air Quality Act (Act No. 39 of 2004)	To reform the law regulating air quality in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development; to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incidental thereto.	Department of Environmental Affairs	2004
Occupational Health and Safety Act, 1993 (Act No. 85 of 1993):	The purpose of this Act is to provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with, the activities of persons at work. The proposed development will therefore be subject to this Act during the construction and operational Application for Environmental Authorisation.	Department of Labour	1993
Integrated Environmental Management Information Series	IEM is a key instrument of NEMA and provides the overarching framework for the integration of environmental assessment and management principles into environmental decision-making. The aim of the information series is to provide general information on techniques, tools and processes for environmental assessment and Management. These various documents have been referred to for information on the most suitable approach to the environmental assessment process for the proposed development.	Department of Environmental Affairs	1992
Local Government: Municipal Structures Act, No. 117 of 1998	To provide for the establishment of municipalities in accordance with the requirements relating to categories and types of municipality; to establish criteria for determining the category of municipality to be established in an area; to define the types of municipality that may be established within each category; to provide for an appropriate division of functions and powers between categories of municipality; to regulate the internal systems, structures and office-bearers of municipalities; to provide for appropriate electoral systems; and to provide for matters in connection therewith	National Government	1998
Local Government: Municipal Systems Act, No. 32 of 2000	To provide for the core principles, mechanisms and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment of local communities, and ensure universal access to essential services that are affordable to all; to define the legal nature of a municipality as including the local community within the municipal area, working in partnership with the municipality's political and administrative structures; to provide for	National Government	2000

	the manner in which municipal powers and functions are exercised and performed; to provide for community participation; to establish a simple and enabling framework for the core processes of planning, performance management, resource mobilisation and organisational change which underpin the notion of developmental local government.		
REGIONAL PLANNING POLICIES			
Rustenburg Local Municipality IDP	The vision of the RLM IDP is to create a world area where all communities enjoy a high quality of life and diversity. The provincial economy needs to become more productive, more competitive and more diversified in its economic offerings moving away from mining as the main economic driver. Seven (7) strategic priority areas have been identified in order to achieve this goal.	Rustenburg Local Municipality	2019 - 2020
Bojanala Platinum District Municipality Environmental Management Framework (EMF)	An environmental decision support tool in the BPDM, to facilitate a consolidated and inclusive approach for the management of this area.	North West Department of Rural, Environment and Agricultural Development	2018

Table 3: Applicable legislation

11. WASTE AND EFFLUENT

11.1. Solid Waste Management

The small amount of construction waste that may be generated, items that can be recycled will be separately stored for collection and all other solid waste will be collected and stored in fenced “scavenger proof” areas at the construction camp. The solid waste will then be transported from the proposed development to a transfer station or solid waste disposal site of the RLM, by the land owner or the land owner may appoint a private company for this purpose.

The estimated volume of solid waste to be generated during the operational phase of the proposed development on a weekly basis is shown in the table below:

Site	No. of Units	Volume / Week (m ³)
Tents	6	0.9
Holiday Cottages	15	2.25
Total		13.15

Table 4: Estimated volume of solid waste to be generated during the operational phase

The collection of solid waste within the proposed development will be carried out by the land owner. Adequate protection will be erected around the collection points of the solid waste to ensure minimal damage is caused by and to the wildlife roaming in the area.

Solid waste production at all sources will be minimized. The re-using, recycling and composting of specific waste will be maximised, especially since most of the waste generated during the operational phase of the development (bottles, newspapers, aluminium cans, magazine and office paper) is recyclable. The unusable solid waste will be transported from the proposed development to a transfer station or solid waste disposal site of the RLM, by the land owner or the land owner may appoint a private company for this purpose.

Refer to Appendix I.3

11.2. Effluent

The estimated sewage flow for the proposed development is as follows:

Site	No. of Units	Average Annual Daily Flow (AADF)	Sewage Flow (kℓ/d)
Tents	6	0.84kℓ/unit	5.04
Holiday Cottages	15	0.84kℓ/unit	12.6
Total			17.64

Table 5: Estimated effluent AADF

No formal municipal sanitation infrastructure is located in the vicinity of the proposed development. A number of existing French drains with soak-aways are already in use at the existing development (lodge, restaurant, conference facility and spa). Due to the nature and size of the development the installation of a waterborne sewage system will not be feasible. Therefore, each Tent and Holiday Cottage will be equipped with soakaway systems, package plants and sewage treatment facility.

12. WATER USE

The estimated water demand for the proposed development is shown in the table below:

Site	No. of Units	Average Annual Daily Demand (AADD)	Water Demand (kℓ/d)
Tents	6	0.90kℓ/unit	5.4
Holiday Cottages	15	0.90kℓ/unit	13.5
Total			18.9

Table 6: Estimated water AADD

The proposed development falls within the water supply area of the Rustenburg Local Municipality (RLM). Due to the rural location of the proposed development no existing municipal water infrastructure is available in the vicinity of the site. Therefore, water will be supplied from the existing ground water sources.

Two (2) existing boreholes are located within the boundaries of Finfoot Lake Reserve. Three (3) existing boreholes are located on the Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ, which is approximately 2.64km south west of the proposed development. The Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ is owned and operated by the same entity as the proposed development. Water will be supplied from these five (5) existing boreholes.

The proposed development falls within the Department of Water and Sanitations (DWS) A22F quaternary drainage region and is entitled to abstract 45kℓ/ha/annum of ground water. The total volume of water that may be abstracted for Finfoot Lake Reserve is 18 270kℓ/annum or 50.05 kℓ/day and for the Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ is 13 876.65kℓ/annum or 38.01kℓ/day. The estimated AADD for the proposed development together with the existing development (lodge, restaurant, conference facility and spa) is 16 654.95kℓ/annum or 45.63kℓ/day. Therefore, the AADD is less than the allowable abstraction rate for the area.

The delivery capacity of the existing two (2) boreholes located within the boundaries of Finfoot Lake Reserve will not be able to accommodate the AADD of the proposed development together with the existing development (lodge, restaurant, conference facility and spa), therefore, the extraction of ground water from the Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ will be utilized to accommodate the required AADD. The abstracted ground water will be purified should it not conform to the standards and specifications of DWS.

The total existing raw water storage capacity for Finfoot Lake Reserve is 72.5kℓ. According to the standards and specifications of the Department of Water Affairs and Forestry, Technical Guidelines for the Development of Water and Sanitation Infrastructure, second Edition (2004) the minimum raw water storage required when pumping from a single source is 48hours AADD. Based on this the raw water storage required for Finfoot Lake Reserve including the proposed development is 91.26kℓ. As a result, additional storage tanks will be installed to acquire this minimum storage capacity.

Furthermore, a 4.5kℓ elevated storage tank will be erected on the Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ where the ground water abstracted from the existing three (3) boreholes will be pumped into. This water will then gravitate to the proposed 48hours AADD raw water storage tanks located within Finfoot Lake Reserve.

An existing 3-stage water filter and UV light exposure unit is currently being used for the purification of the extracted ground water. Prior to construction the existing water filtration unit will be inspected to verify whether it complies with the relevant standards and specifications, as well as, if it will be able to filter the estimated new AADD. Should it be found that the existing filtration unit cannot filter the estimated AADD and does not comply with the relevant standards and specifications, it will have to be upgraded or replaced in order to comply.

Refer to Appendix I.3

13. POWER

The existing infrastructure on Finfoot Lake Reserve is supplied from the Eskom Power Supply Network.

The external network design will adhere to Eskom's standards and requirements. Other standards to which the electrical design will adhere to include the relevant SABS safety and equipment standards, as well as, the NRS 048 Quality of Supply Standard.

The total estimated maximum demand of the proposed development during the operational phase of the development is shown in the table below:

Site	No. of Units	Unit Load Assumption (kVA / Unit)	Load (kVA)
Tents	6	6	36
Holiday Cottages	15	6	90
Total			126

Table 7: Total estimated maximum demand of the proposed development during the operational phase

Due to the shortage of electrical capacity in South Africa and the focus on energy saving, it is a requirement that the new development make use of energy saving methods. Energy saving requirements will form part of the agreement with Eskom. The required capacity could therefore be reduced through the replacement method, where high electricity demand appliance etc are replaced with a lower energy alternative (i.e., replacing the electrical stove plates of each individual unit with gas, heating water with solar or gas and using energy saving light bulbs). Should this method be implemented then the estimated reduced maximum demand would be as follows:

Site	No. of Units	Unit Load Assumption (kVA / Unit)	Load (kVA)
Tents	6	5	30
Holiday Cottages	15	5	75
Total			105

Table 8: Estimated reduced maximum demand

The proposed development together with the existing infrastructure on Finfoot Lake Reserve will be supplied by two (2) 200kVA Eskom bulk supply points. One of these 200kVA supply points will provide power to the Tents and Holiday Cottages. This

Refer to Appendix I.3 for more details

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

1. LAND USE CHARACTER OF SURROUNDING AREA

The proposed developments are situated on the farm Vaalkop 76 JQ, within the Bojanala District Municipality, approximately 40 km north-east of the town of Rustenburg, North West Province, South Africa. The footprint is situated within the privately owned Finfoot Lake Reserve adjacent to the 4000 ha provincially managed Vaalkop Dam Nature Reserve.

Currently on the Reserve there is the established Finfoot Lake Lodge, two recently constructed Tented Chalets, tourist three lodgings, several chalets, thatched lapa, conference centre, as well as, power lines and fences. The Reserve also contains a network of gravel tourist roads and approximately 3 km of frontage along the southern bank of the Vaalkop Dam. The reserve is primarily used for tourism and recreational purposes.

The study area is situated within the Quarter Degree Grid Square (QDGS) 2527 AD, at an altitude of approximately 995 mamsl.

Most of the study area is covered in natural vegetation and is surrounded by untransformed land that is mostly privately owned and managed as conservation / game farming area. The general topography is mostly flat to gently undulating, with low, scattered hills situated outside the property (such as Bulkop, at 1134 mamsl).

The region is located within a summer rainfall area which is characterized by afternoon thunderstorms. December and January are the wettest months, characterized by torrential downpours in the afternoon. Daytime temperatures are typically around 30°C. Winter (May to September) is the dry season and has moderate daily temperatures and cool nights. Average temperatures in winter vary from 7°C in the mornings to 23°C in the afternoons (SA Explorer 2020).

The project consists of 17 existing farm portions of varying sizes of the farm Vaalkop 76 JQ. Land use within the study area is predominately protected areas and game farming. The Vaalkop Dam Nature Reserve, a North West provincial Reserve managed by the North West Parks Board, envelops the study area to the north, east and west. Farmsteads and / or rural homesteads, are concentrated north, west and east of the study area.

In general, the landscape character of the greater study area presents as rural and natural. The site itself is natural in character, of note is that the site is adjacent to the Vaalkop Dam and enveloped by Vaalkop Dam Nature Reserve.

2. BIODIVERSITY

A specialist terrestrial ecology assessment was undertaken by ECOREX in November 2020.

Most of the study area is covered in natural vegetation and is surrounded by untransformed land that is mostly privately owned and managed as conservation / game farming area. The general topography is mostly flat to gently undulating, with low, scattered hills situated outside the property (such as Bulkop, at 1134 mamsl). Several game species are either naturally occurring or have been introduced into the reserve, and include Red Hartebeest *Alcelaphus buselaphus caama*, South African Giraffe *Giraffa camelopardalis giraffe*, Greater Kudu *Tragelaphus strepsiceros* and Nyala *Tragelaphus angasi*.

The NWPBCA has classified most of the study area to be within **Other Natural Areas (ONA)**. These are all remaining natural areas in the province not included in the transformed / modified, CBA or ESA categories and have not been identified as a priority in the NWPBCA.

Two small areas in the central and western portions of the study area are classified as **Ecological Support Areas (ESA) 1 – Protected Areas Buffer**. These are areas that are not essential for meeting biodiversity representation targets/thresholds but which nevertheless play an important role in supporting the ecological

functioning of critical biodiversity areas and/or in delivering ecosystem services that support socio-economic development, such as water provision, flood mitigation or carbon sequestration

FLORA

According to the National Vegetation Map (SANBI, 2018), the study area is situated within **Central Sandy Bushveld**. This vegetation type occurs primarily between the Pilanesberg in the west and Groblersdal / GaMasemola in the east, with scattered and isolated pockets in the Waterberg and adjacent areas. Altitude varies between 850 and 1450 mamsl. The landscape is typically low and undulating, with sandy plains supporting mostly deciduous woodland (Mucina & Rutherford, 2004).

The study area is **not situated within any centres of plant endemism** as defined by Van Wyk & Smith (2001). Central Sandy Bushveld is **not listed as a Threatened Ecosystem** (Notice 1002 of Government Gazette 34809, 9 December 2011).

SANBI's Botanical Database of Southern Africa (BODATSA) lists a moderately rich diversity of plants with 718 plant taxa from 124 families for a 20 km radius around the study area. However, this list does include sections of the Pilanesberg range which comprises vegetation that is unlikely to be present in the study area. A total of 79 taxa from 28 families were recorded from the study area during October 2020 fieldwork, representing 11% of the BODATSA total. The true plant species diversity of the sites is likely to be higher as few flowering herbs were visible during fieldwork. The dominant plant families in the flora are Poaceae (16 spp), Fabaceae (11 spp) and Acanthaceae (5 spp).

Vegetation communities were identified within the study area on the basis of distinctive vegetation structure (grassland, woodland, thicket, etc.), floristic composition (dominant and diagnostic species) and position in the landscape (mid-slopes, terrace, crest, etc.). Two communities are present within the study area and are described briefly below. Alien plant species are indicated in these vegetation descriptions by use of an asterisk.

Three conservation-important species were recorded on site, all of which are protected under the NFA, namely the trees *Vachellia erioloba*, *Boscia albitrunca* and *Combretum imberbe*.

No threatened or Near Threatened plants were confirmed during fieldwork. Nine species recorded in 2527 AD and surrounding grids have been assessed as SCC. Due to a lack of suitable habitat, sufficient fieldwork coverage or scarcity, only one of these is likely to occur within the study area, namely *Drimia sanguinea*. plant is listed as NT due to over-collection for the medicinal plant trade.

No plants endemic to the North West Province were recorded during fieldwork.

Only **four alien plant species** were recorded during fieldwork, with one of these being listed as invasive under the National Environmental Management: Biodiversity Act (Act No. 10 OF 2004, NEMBA) Alien and Invasive Species Lists, 2016 (Appendix 1), namely the succulent * *Opuntia stricta* which occurs in low densities.

- **Senegalia mellifera – Euclea undulata Low Closed Woodland**

Senegalia mellifera – *Euclea undulata* Low Closed Woodland occurs on heavy clay soils in three of the four proposed development areas surveyed. This community covers 17 ha, or 30% of the entire study area. Vegetation structure is mostly Low Closed Woodland (sensu Edwards, 1983).

This community contains a low diversity of plants with the closed canopy strongly dominated by the indigenous invasive tree *Senegalia mellifera*. Additional canopy trees include *Vachellia tortilis*, *Ziziphus mucronata*, *Searsia lancea*, *Vachellia karroo* and *Boscia albitrunca*. Shrubs and dwarf shrubs represented are *Euclea undulata*, *E. crispa*, *Carissa bispinosa*, *Gymnosporia maranguensis* and *Tarchonanthus camphoratus*. Few herbaceous species were observed, including *Barleria macrostegia* and *Litogyne gariepina*. The succulents *Kalanchoe rotundifolia* and *Sansevieria aethiopica* are commonly recorded in large colonies, often at the base of trees and shrubs. Grasses are sparse, but those located in clearings and at edges include *Panicum maximum*, *Heteropogon contortus* and *Eragrostis rigidior*.

A total of 50 species (63% of the entire list) was recorded from Low Closed Woodland during fieldwork; the lower of the two communities present. Species fidelity is high, with 25 species (50% of the community list) not shared with the other community.

The Low Closed Woodland vegetation community has a Conservation Importance (CI) of Medium due to a lack of confirmed and low likelihood of potentially occurring SCC. The Functional Integrity (FI) is also medium as a result of encroachment of the tree *Senegalia mellifera*. When combined, the Biodiversity Importance (BI) level is Medium. Receptor Resilience (RR) is assessed as Medium as the vegetation is not sensitive to change and could recover rapidly. When integrated with the Medium BI the SEI of the vegetation community is assessed as **Medium**.

- **Vachellia tortilis – Eragrostis rigidior Plains Woodland**

This vegetation community occurs across most of the sandier western and central portions study area. It covers 38 ha, or 68% of the area surveyed. Vegetation structure is mostly Short to Tall Closed Woodland (sensu Edwards, 1983) but approaches Open Woodland in places.

The canopy is dominated by the tree *Vachellia tortilis*, with additional species including *Ziziphus mucronata*, *Vachellia erioloba*, *V. karoo*, *Senegalia erubescens* and *Searsia lancea*. Dominant shrubs and dwarf shrubs are *Euclea crispa*, *Gymnosporia glaucophylla*, *Tarchonanthus camphoratus*, *Solanum campylacanthum* and *Abutilon austro-africanum*. Herbs include *Kyphocarpa angustifolia*, *Justicia anagalloides*, *Ruellia patula*, *Litogyne gariiepina* and *Indigofera heterotricha*. Grasses dominate the ground layer, with the most frequently recorded species including *Eragrostis rigidior*, *Aristida adscensionis*, *Aristida congesta* subsp. *barbicollis*, *Heteropogon contortus* and *Panicum maximum*.

Fifty-three species (67% of the entire list) was recorded from Plains Woodland during fieldwork; the higher of the two communities present. Species fidelity is high, with 28 species (53% of the community list) being restricted to this community.

The Plains Woodland community also has a CI of Medium due to a lack of confirmed and low likelihood of potentially occurring SCC. The FI is assessed as High as the vegetation is largely undisturbed. The combination of CI and FI result in a BI level of Medium. Receptor Resilience is assessed as Medium as savanna is not highly sensitive and should recover rapidly after disturbances. When integrated with the Medium BI the SEI of the vegetation community is assessed as **Medium**.

- **Transformed Areas**

Transformed areas cover the remainder of the study area and contain two recently erected safari-style tents and three dwellings. Transformed areas, including the dwellings and safari-style tents, are assessed as having **Very Low** SEI

FAUNA

The study area is situated within an established protected area in the savanna biome, adjacent to several provincial and private reserves. This area has reasonably high mammal diversity but relatively low numbers of endemics and Red Data species. Most of the study area contains natural vegetation, and mammal populations are considered secure and protected.

Sixty-four mammal species have been recorded for the grid 2527 AD in the Fitzpatrick Institute of African Ornithology's Virtual Museum database. This is a high total, but true diversity will be somewhat higher as many mammals are either small, cryptic or nocturnal in habit and therefore difficult to photograph. Adjacent reserves do contain populations of SCC that are not present on the Finfoot Lake Reserve, for example White Rhinoceros *Ceratotherium simum*, but these may only accidentally or infrequently enter the study area.

- **Mammals**

Twenty-three mammal species were recorded from within the study area during fieldwork. These include a few species that were confirmed as occurring by reserve staff, such as *Tsessebe Damaliscus lunatus lunatus*.

An estimated 30 conservation-important mammals potentially occur within the study area.

Only **one SCC was recorded** from within the study area, although some such *Leopard Panthera pardus* may infrequently enter from the adjacent private reserves. These are unlikely to remain for long durations due to high human disturbance and these would possibly be discouraged due to undesirable predation on existing game species and incompatibility to housing estate developments where owners are permitted to walk unhindered throughout the reserve.

Of the 30 potentially occurring species, 14 are SCC6 with seven considered threatened. Only one of these species was confirmed to occur, namely Tsessebe. This antelope is assessed as VU due to deteriorating habitat quality, unnaturally high competition from other grazers due to high stocking rates and increasing poaching. However, only one animal is present (R. Martin pers.comm.) and therefore the reserve does not contain a viable breeding population and no further discussion is necessary. None of the remaining potentially occurring SCC are likely to occur as regular or resident species within the proposed development area due to a lack of suitable habitat present, regional scarcity or high human disturbance. The remaining potentially occurring SCC are listed as NT, meaning they may become threatened soon. None were confirmed to occur, and only one has a moderate likelihood of occurring within the study area which is Serval *Leptailurus serval*.

Twenty-eight potentially occurring species are protected under either the NEMBA ToPS or NWBMA. Seven of these were confirmed during fieldwork and it is likely that a few additional species are present.

- **Birds**

Vaalkop 76 JQ is situated within savanna biome which supports the highest diversity of bird species within the Southern African sub-region. The Vaalkop Dam area is avifaunally well sampled, with considerable coverage in the second Southern African Bird Atlas Project (SABAP2) during which time 370 species have been recorded from 484 lists submitted for the nine pentads (mapping units covering an area of approximately 77 km²) in the QDGS 2527 AD as per Full Protocol submissions. This highlights the **extremely high avian diversity** of the Vaalkop area.

A total of 89 bird species were confirmed to occur within or adjacent to the study area during October 2020 fieldwork, which equates to 24% of the QDGS species list. Aquatic birds such as waterfowl and waders were excluded from this assessment as the proposed developments are, at their closest, situated just more than 100 m from the Vaalkop Dam's full supply level. This is deemed to be sufficiently distant to justify this exclusion as the developments will not be visible from the shoreline. Sufficient sampling was undertaken for assessing habitat suitability for potentially occurring threatened species, the primary objective of the ornithological component of this study, and to describe broad bird assemblages. Additional fieldwork in summer is likely to increase the species richness of the assemblage but is unlikely to identify additional assemblages. Two assemblages are present namely Low Closed Woodland Assemblage and Plains Woodland Assemblage.

An estimated 19 SCC potentially occur in the Vaalkop area, excluding waterbirds. Ten of these are considered threatened, none of which were confirmed to occur during fieldwork, and none are expected to occur due to regional rarity, lack of suitable habitat or disturbance levels from adjacent dwellings and tourist lodges. Only one NT species has a moderate likelihood of occurring within the more open areas, namely, European Roller *Coracias garrulous*.

- **Reptiles**

Only four reptiles were recorded during fieldwork, namely Striped Skink *Trachylepis striata*, Variable Skink *T. varia*, Common Dwarf Gecko *Lygodactylus capensis* and Common Rough-scaled Lizard *Meroles squamulosus*. All four are common and widespread in the savanna biome. Dedicated reptile surveys in the wet season,

including trapping, would no doubt have produced a few additional species but are unlikely to have produced data that would change the recommendations in this report.

Of the potentially occurring species, two have been nationally assessed as VU, namely Nile Crocodile *Crocodylus niloticus*, which is also protected under NEMBA ToPS, and Lobatse Hinged Tortoise *Kinixys lobatsiana*. The former is only rarely recorded from the nearby Vaalkop Dam and is therefore highly unlikely to utilise the habitats present within the study area. The Lobatse Hinged Tortoise frequents rocky hillsides in habitats of mixed *Acacia* and *Combretum* woodland, habitat types absent from the study area although it may very occasionally pass through.

The Southern African Python *Python natalensis* is protected under the National Environmental Management: Biodiversity Act (No.10 of 2004). This species was confirmed to occur by reserve staff and is likely to be resident within the study area.

- **Frogs**

No frogs were recorded during fieldwork, primarily due to a lack of open water or moist grassland habitats. Dedicated frog searches, including nocturnal surveys at the onset of the rains, would have produced at least some species but are unlikely to have produced data that would change the recommendations in this report.

None of the potentially occurring frogs are assessed as SCC. Giant Bullfrog *Pyxicephalus adspersus* was previously assessed as NT but is now reclassified as Least Concern. No habitat (freshwater pans) is present for this species.

Specialist Recommendations

Two vegetation communities were identified within the study area, namely Low Closed Woodland and Plains Woodland. Both communities have an **SEI of Medium**. Disturbance levels within the study area are low to moderate, with two tourist facilities and three dwellings having already been constructed. The **alien plant infestation levels are low**, with only one species (* *Opuntia stricta*) located. The indigenous tree *Senegalia mellifera* has invaded large areas, especially on the **heavy clay soils**. **No threatened plants** were located, and only one is likely, namely the NT-listed *Drimia sanguinea*. **Three confirmed trees are protected** under the NFA, namely *Boscia albitrunca*, *Senegalia erioloba* and *Combretum imberbe*. **One threatened mammal** is confirmed, namely Tsessebe, but only one individual is present on the reserve. One mammal (Serval) and one bird (European Roller) are listed as NT and are likely to regularly utilize the natural vegetation within the study area, at least on a regular basis. No raptor nests were located.

Provided the recommendations suggested in the report are followed, and the developer complies with all relevant legislation pertaining to the development activities (such as the NEMBA), there is no objection to the proposed developments in terms of the terrestrial ecosystems of the study area.

Refer to Appendix D.2 for the full Ecology report.

3. CULTURAL/HISTORICAL FEATURES

Francois P. Coetzee, an independent Cultural Heritage Consultant, was commissioned by NuLeaf Planning and Environmental to undertake a Heritage Impact Assessment on the Farm Vaalkop 76 JQ, in order to determine the heritage potential and the impact on possible heritage resources.

As a result of the investigation of the survey footprint note that **no archaeological** (Stone Age and Iron Age) or historical settlements, structures, features, assemblages or artefacts **were recorded** during the survey.

It is therefore recommended, from a cultural heritage perspective, that the proposed chalets and holiday homes development and associated infrastructure may proceed.

However, please note:

Archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place (cf. NHRA (Act No. 25 of 1999), Section 36 (6)).

Refer to Appendix D.1 for the full Heritage Impact Report.

4. VISUAL IMPACT

The construction and operation of the proposed Finfoot Holiday Resort development will have a visual impact on the scenic resources of the study area.

However, mitigation of the visual impact is possible and will go far in reducing the magnitude of visual impacts discussed by further softening the appearance of the development within its context.

Considering all factors, it is concluded that the **development is appropriate within its context** from a visual perspective, and that the anticipated visual impacts are neither unacceptable in nature nor excessive in magnitude. Potential visual impacts are therefore not considered to be a fatal flaw for this development.

The relatively limited extent of visual receptors in the area and the high to moderate VAC of the area is a strong consideration in this regard.

Based on the above, it is the recommendation of the author that the proposed Finfoot Holiday Resort development, including all proposed components, be supported from a visual perspective, subject to the implementation of the required and recommended optimisation and mitigation measures detailed, in addition to the architectural considerations that have been designed thus far.

Please refer to Appendix D.3 for the Visual Impact Assessment.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

An advertisement was placed in the Rustenburg Herald, a local publication, on 13 November 2020. Three site notices were placed around the proposed site in strategic areas that see high pedestrian traffic on the 13 November 2020.

Site Notice Position	Latitude	Longitude
Poster Position 1 - Finfoot Lake Nature Reserves Reception	25°20'0.64"S	27°26'41.11"E
Poster Position 2 - Finfoot Lake Nature Reserves Gate	25°20'15.54"S	27°23'55.57"E
Poster Position 3 - NWPB Offices for Vaalkop Dam Nature Reserve	25°20'9.41"S	27°25'25.31"E

2. DETERMINATION OF APPROPRIATE MEASURES

The following details the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733:

- A list of interested and affected parties (I&AP's), as well as, compliance authorities was compiled inclusive of Local and District Municipalities, local landowners and environmental organizations.
- Written notification of the proposed development, including a background information document, was sent to all identified I&AP's and Compliance Authorities on 13 November 2020.
- A printed advertisement was placed in the Rustenburg Herald, a local publication, on the 13 November 2020.
- Three site notices were placed around the affected property, on 13 November 2020.

The following key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733 were notified:

Name	Affiliation
Hannes erasmus	Neighbouring Property
Jan Potgieter	Neighbouring Property
Miles Lapperman	Neighbouring Property
Cliff Bull	Neighbouring Property

Proof of stakeholder engagement is included in Appendix E.2.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Interested and Affected Party	Issue
None to date.	None to date.

4. COMMENTS AND RESPONSE REPORT

Please refer to Appendix E.3 for the comments and response report.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/ Organ of State	Contact Person
Mr. Mosiane	NW PHRA
Sello Victor	RLM Municipal Manager
Renee Harmes	Magalies Water Board

Refer to Appendix E.4 for proof that the Authorities and Organs of State received written notification of the proposed activities.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Refer to Appendix E.5 for a list of registered I&APs.

SECTION D: IMPACT ASSESSMENT

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Activity	Impact summary	Significance	Proposed mitigation
Only Alternative			
Planning and Design Phase	Direct impacts:		
	Ground Water		
	None.		
	Hydrology (Surface Water)		
	Risk to ecological function of the Vaalkop Dam and drainage lines	33 M	<ul style="list-style-type: none"> Planning and compliance, including ground water, surface water and storm water management as per the EMPr (section 7.1). Development footprint planning as per the EMPr (section 7.2).
	Risk to hydrological function of the Vaalkop Dam and drainage lines	30 L	
	Soil		
	Erosion risk to soils	27 L	<ul style="list-style-type: none"> Planning and compliance, including ground water, surface water, storm water management and waste management as per the EMPr (section 7.1). Development footprint planning as per the EMPr (section 7.2).
	Biodiversity (Flora)		
	Risk to Central Sandy Bushveld vegetation classified as Not Threatened	24 L	<ul style="list-style-type: none"> Planning and compliance, including protected species, storm water management and waste management as per the EMPr (section 7.1). Development footprint planning as per the EMPr (section 7.2).
	Risk to critical biodiversity areas and ecological support areas	24 L	
	Risk to sensitive habitats	30 L	
	Risk to plant species of conservation importance	20 L	
	Biodiversity (Fauna)		
	Risk of habitat fragmentation	27 L	<ul style="list-style-type: none"> Planning and compliance, including protected species, storm water management and waste management as per the EMPr (section 7.1). Development footprint planning as per the EMPr (section 7.2).
	Land use and Agricultural potential		
	None.		
	Heritage		
	None.		
	Visual		
Risk to visual quality of the surrounding area and sense of place	22 L	<ul style="list-style-type: none"> Development footprint planning as per the EMPr (section 7.2). Visual environment planning as per the EMPr (section 7.3). 	
Socio-economic			
None.			
Services and Traffic			
None.			
Indirect impacts:			
None.			

Activity	Impact summary	Significance	Proposed mitigation
	Cumulative impacts:		
	Biodiversity (Flora)		
	Cumulative loss of Central Sandy Bushveld vegetation	22 L	<ul style="list-style-type: none"> • Planning and compliance, including protected species, storm water management and waste management as per the EMPr (section 7.1). • Development footprint planning as per the EMPr (section 7.2).
	Cumulative reduction of Conservation Important Species	24 L	
	Biodiversity (Fauna)		
	Cumulative loss of faunal habitat	20 L	<ul style="list-style-type: none"> • Biodiversity Management, including water management and waste management as per the EMPr (section 7.2).
Construction Phase	Direct impacts:		
	Ground Water		
	Depletion of ground water	14 L	<ul style="list-style-type: none"> • Pre-construction planning, including planning and preparation as per the EMPr (section 8.1) • Site establishment, including site demarcation, accommodation, pollution control and access roads as per the EMPr (section 8.2) • Materials management, including solid, liquid and hazardous waste, concrete and cement work, fuel and hazardous material as per the EMPr (section 8.3). • Vehicles and equipment management as per the EMPr (section 8.7).
	Pollution and contamination of ground water	18 L	
	Hydrology (Surface Water)		
	Disturbance and loss of ecological function of the Vaalkop Dam and along the drainage lines	16 L	<ul style="list-style-type: none"> • Pre-construction planning, including planning and preparation as per the EMPr (section 8.1) • Site establishment, including site demarcation, accommodation, pollution control, access roads and protection of the riparian system as per the EMPr (section 8.2) • Materials management, including solid, liquid and hazardous waste, concrete and cement work, fuel and hazardous material as per the EMPr (section 8.3). • Stockpiles, storage and handling as per the EMPr (section 8.4). • Erosion control, including water management, storm water management, excavation, backfilling and trenching as per the EMPr (section 8.5). • Alien plant control as per the EMPr (section 8.6). • Vehicles and equipment management as per the EMPr (section 8.7). • Socio-economic management, including staff, visual as per the EMPr (section 8.8). • Fire management as per the EMPr (section 8.9). • Rehabilitation as per the EMPr (section 8.10).
	Disturbance and loss of hydrological function of the Vaalkop Dam and along the drainage lines	24 L	
	Flow modification	24 L	
	Pollution and contamination of the Vaalkop Dam and drainage lines	30 L	
	Soil		
Soil contamination and pollution	18	<ul style="list-style-type: none"> • Pre-construction planning, including 	

Activity	Impact summary	Significance	Proposed mitigation
		L	planning and preparation as per the EMPr (section 8.1) <ul style="list-style-type: none"> Site establishment, including site demarcation, accommodation, pollution control and access roads as per the EMPr (section 8.2) Materials management, including solid, liquid and hazardous waste, concrete and cement work, fuel and hazardous material as per the EMPr (section 8.3). Stockpiles, storage and handling as per the EMPr (section 8.4). Erosion control, including water management, storm water management, excavation, backfilling and trenching as per the EMPr (section 8.5). Vehicles and equipment management as per the EMPr (section 8.7). Rehabilitation as per the EMPr (section 8.10).
	Soil erosion by wind and rain	18 L	
	Soil compaction and increased risk of sediment transport and erosion	18 L	
Air			
	Air pollution due emissions from construction vehicles and equipment.	24 L	<ul style="list-style-type: none"> Site establishment, including site demarcation, accommodation, pollution control and access roads as per the EMPr (section 8.2) Stockpiles, storage and handling as per the EMPr (section 8.4). Erosion control, including water management, storm water management, excavation, backfilling and trenching as per the EMPr (section 8.5). Vehicles and equipment management as per the EMPr (section 8.7). Socio-economic management, including visual as per the EMPr (section 8.8). Fire management as per the EMPr (section 8.9). Rehabilitation as per the EMPr (section 8.10).
	Dust liberated by general construction activities and movement of construction vehicles.	21 L	
	Smoke from open fires used by site staff for heating and cooking as well as from uncontrolled fires	21 L	
Biodiversity (Flora)			
	<i>Removal of invader alien species found on site</i> (Positive impact)	50 M	<ul style="list-style-type: none"> Pre-construction planning, including planning and preparation as per the EMPr (section 8.1) Site establishment, including site demarcation, accommodation, pollution control, access roads, protection of flora, and protection of the riparian system as per the EMPr (section 8.2) Materials management, including solid, liquid and hazardous waste, concrete and cement work, fuel and hazardous material as per the EMPr (section 8.3). Stockpiles, storage and handling as per the EMPr (section 8.4). Erosion control, including water management, storm water management, excavation, backfilling and trenching as per the EMPr (section 8.5).
	Loss of Central Sandy Bushveld vegetation classified as Threatened	30 L	
	Loss of critical biodiversity areas and ecological support areas	30 L	
	Disturbance of sensitive habitats	36 M	
	Increase in exotic vegetation/alien species and bush encroachment into disturbed soils and areas	26 L	

Activity	Impact summary	Significance	Proposed mitigation
			<ul style="list-style-type: none"> • Alien plant control as per the EMPr (section 8.6). • Vehicles and equipment management as per the EMPr (section 8.7). • Fire management as per the EMPr (section 8.9). • Rehabilitation as per the EMPr (section 8.10).
Biodiversity (Fauna)			
	Loss of faunal habitat	22 L	<ul style="list-style-type: none"> • Pre-construction planning, including planning and preparation as per the EMPr (section 8.1) • Site establishment, including site demarcation, accommodation, pollution control, access roads, protection of flora and protection of fauna as per the EMPr (section 8.2) • Materials management, including solid, liquid and hazardous waste, concrete and cement work, fuel and hazardous material as per the EMPr (section 8.3). • Erosion control, including excavation, backfilling and trenching as per the EMPr (section 8.5). • Alien plant control as per the EMPr (section 8.6). • Vehicles and equipment management as per the EMPr (section 8.7). • Socio-economic management, including staff as per the EMPr (section 8.8). • Fire management as per the EMPr (section 8.9). • Rehabilitation as per the EMPr (section 8.10).
	Faunal disturbances and temporary changes in the distribution and abundance	27 L	
	Disturbance of fauna along the Vaalkop Dam within Vaalkop Dam Nature Reserve	27 L	
	Loss of general faunal habitat and ecological connectivity	20 L	
	Mortality of fauna	18 L	
	Increased illegal harvesting of plant and animal resources	16 L	
	Poaching and snaring of fauna	27 L	
	Increased opportunity for smuggling of poached items	27 L	
Land use and Agricultural potential			
	None.		
Heritage			
	Possible discovery of new important artefacts (Positive Impact)	16 L	<ul style="list-style-type: none"> • Pre-construction planning as per the EMPr (section 8.1) • Heritage Management, specifically fauna as per the EMPr (section 8.4) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)
	Damage to and / or destruction of archaeological, paleontological or historical artefacts unearthed	8 N	
Visual			
	The potential visual impact of construction, lighting and dust on sensitive visual receptors i.e., Bushwillow Estate	10 N	<ul style="list-style-type: none"> • Pre-construction planning, including planning and preparation as per the EMPr (section 8.1) • Site establishment, including site demarcation, accommodation, pollution control and access roads as per the EMPr (section 8.2) • Materials management, including solid, liquid and hazardous waste, concrete and cement work, fuel and hazardous material as per the EMPr (section 8.3). • Stockpiles, storage and handling as per
	Visual impact of construction, lighting and dust on conservation areas within the region (Vaalkop Dam Nature Reserve)	24 L	

Activity	Impact summary	Significance	Proposed mitigation
			the EMPr (section 8.4). <ul style="list-style-type: none"> Erosion control, including water management, storm water management, excavation, backfilling and trenching as per the EMPr (section 8.5). Vehicles and equipment management as per the EMPr (section 8.7). Socio-economic management, including staff, visual as per the EMPr (section 8.8). Fire management as per the EMPr (section 8.9). Rehabilitation as per the EMPr (section 8.10).
Socio-economic			
	Stimulation of the local economy, especially the local service delivery industry (Positive Impact)	24 L	<ul style="list-style-type: none"> Socio-economic planning as per the EMPr (section 7.4). Pre-construction planning, including planning and preparation as per the EMPr (section 8.1)
	Creation of short-term employment and business opportunities and the opportunity for skills development and on-site training. (Positive impact)	36 M	<ul style="list-style-type: none"> Site establishment, including accommodation and access roads as per the EMPr (section 8.2) Vehicles and equipment management as per the EMPr (section 8.7). Socio-economic management, including staff as per the EMPr (section 8.8). Fire management as per the EMPr (section 8.9).
	Noise, dust and safety impacts and disturbance to adjacent landowners	27 L	
	An increase in construction workers and associated increase in social problems for the community	16 L	
	Increase in casual workers and associated increase in poaching	24 L	
	Increased risk of veld fires due to the presence of construction workers on site	21 L	
Services and Traffic			
	Increase in the number and frequency of construction vehicles accessing the site	21 L	<ul style="list-style-type: none"> Pre-construction planning, including planning and preparation as per the EMPr (section 8.1) Site establishment, including access roads as per the EMPr (section 8.2) Vehicles and equipment management as per the EMPr (section 8.7). Socio-economic management, including visual as per the EMPr (section 8.8).
Indirect impacts:			
Biodiversity (Flora)			
	Loss of floral biodiversity, Conservation Important Species and protected trees due to increased incidence of veld fires	22 L	<ul style="list-style-type: none"> As above
Biodiversity (Fauna)			
	Loss of faunal biodiversity due to increased incidence of veld fires	20 L	<ul style="list-style-type: none"> As above
Socio-economics			
	Loss of property and threat to human life due to increased incidence of veld fires	16 L	<ul style="list-style-type: none"> As above
Traffic and services			
	Degradation of local roads due to	21	<ul style="list-style-type: none"> As above

Activity	Impact summary	Significance	Proposed mitigation
	the increase in the numbers of heavy vehicles.	L	
Cumulative impacts:			
Biodiversity (Flora)			
	Cumulative loss of Central Sandy Bushveld vegetation classified as Not Threatened	26 L	<ul style="list-style-type: none"> • Pre-construction planning, including planning and preparation as per the EMPr (section 8.1) • Site establishment, including site demarcation, accommodation, pollution control, access roads, protection of flora, and protection of the riparian system as per the EMPr (section 8.2) • Materials management, including solid, liquid and hazardous waste, concrete and cement work, fuel and hazardous material as per the EMPr (section 8.3). • Stockpiles, storage and handling as per the EMPr (section 8.4). • Erosion control, including water management, storm water management, excavation, backfilling and trenching as per the EMPr (section 8.5). • Alien plant control as per the EMPr (section 8.6). • Vehicles and equipment management as per the EMPr (section 8.7). • Fire management as per the EMPr (section 8.9). • Rehabilitation as per the EMPr (section 8.10).
	Cumulative loss of critical biodiversity areas and ecological support areas	26 L	
	Cumulative loss of ecological function of sensitive habitats.	26 L	
	Cumulative reduction and damage to Conservation Important Species and protected trees	24 L	
Biodiversity (Fauna)			
	Cumulative loss of faunal habitat	24 L	<ul style="list-style-type: none"> • Pre-construction planning as per the EMPr (section 8.1) • Biodiversity Management, specifically fauna as per the EMPr (section 8.3.9, 8.3.10, 8.3.11) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)
Socio-economics			
	<i>Community upliftment and the opportunity to up-grade and improve skills levels in the area (Positive impact)</i>	24 L	<ul style="list-style-type: none"> • Socio-economic planning as per the EMPr (section 7.4). • Pre-construction planning, including planning and preparation as per the EMPr (section 8.1) • Site establishment, including accommodation and access roads as per the EMPr (section 8.2) • Vehicles and equipment management as per the EMPr (section 8.7). • Socio-economic management, including staff as per the EMPr (section 8.8). • Fire management as per the EMPr (section 8.9).
Services & traffic			
	Cumulative increase in the number and frequency of vehicles	16 L	<ul style="list-style-type: none"> • Pre-construction planning, including planning and preparation as per the EMPr

Activity	Impact summary	Significance	Proposed mitigation
	(construction vehicles)		(section 8.1) <ul style="list-style-type: none"> Site establishment, including access roads as per the EMPr (section 8.2) Vehicles and equipment management as per the EMPr (section 8.7). Socio-economic management, including visual as per the EMPr (section 8.8).
Operational Phase	Direct impacts:		
	Ground Water		
	Depletion of ground water resources	18 L	<ul style="list-style-type: none"> Biodiversity management, including access roads and resource management as per the EMPr (section 9.1) Materials management, including solid liquid and hazardous waste, fuel and hazardous material as per the EMPr (section 9.2) Erosion control as per the EMPr (section 9.3) Socio economic management, including staff management as per the EMPr (section 9.5) Vehicles and equipment management as per the EMPr (section 9.4)
	Pollution and contamination of ground water	22 L	
	Hydrology (Surface Water)		
	Disturbance and loss of ecological function of the habitat (physical structure) along the Vaalkop Dam and drainage lines	18 L	<ul style="list-style-type: none"> Biodiversity management, including access roads, resource management, protection of flora and alien plant control as per the EMPr (section 9.1) Materials management, including solid, liquid and hazardous waste, fuel and hazardous material as per the EMPr (section 9.2) Erosion control as per the EMPr (section 9.3) Vehicles and equipment management as per the EMPr (section 9.4) Socio economic management, including staff management as per the EMPr (section 9.5) Fire management as per the EMPr (section 9.6)
	Pollution and contamination of surface water	20 L	
	Disturbance and loss of hydrological function (quality and fluctuation properties) along the Vaalkop Dam and drainage lines	18 L	
	Soil		
	Soil contamination and pollution	18 L	<ul style="list-style-type: none"> Biodiversity management, including access roads, resource management, protection of flora and alien plant control as per the EMPr (section 9.1) Materials management, including solid liquid and hazardous waste, fuel and hazardous material as per the EMPr (section 9.2) Erosion control as per the EMPr (section 9.3) Vehicles and equipment management as per the EMPr (section 9.4) Socio economic management, including staff management as per the EMPr (section 9.5)
Soil erosion	18 L		
Air			

Activity	Impact summary	Significance	Proposed mitigation
	Air pollution by emissions from increased numbers of private vehicles	18 L	
Biodiversity (Flora)			
	Loss of critical biodiversity areas and ecological support areas	18 L	<ul style="list-style-type: none"> • Biodiversity management, including access roads, resource management, protection of flora and alien plant control as per the EMPr (section 9.1) • Materials management, including solid liquid and hazardous waste, fuel and hazardous material as per the EMPR (section 9.2) • Erosion control as per the EMPr (section 9.3) • Vehicles and equipment management as per the EMPr (section 9.4) • Socio economic management, including staff management as per the EMPR (section 9.5) • Fire management as per the EMPR (section 9.6)
	Disturbance of sensitive habitats such as riparian and high biodiversity areas	27 L	
	Destruction and damage to Conservation Important Species and protected trees	20 L	
	Colonisation and re-emergence of exotic vegetation / alien species and bush encroachment into disturbed soils and poorly rehabilitated areas.	22 L	
Biodiversity (Fauna)			
	Loss of faunal habitat	18 L	<ul style="list-style-type: none"> • Biodiversity management, including access roads, resource management, protection of flora, alien plant control and protection of fauna as per the EMPr (section 9.1) • Materials management, including solid liquid and hazardous waste, fuel and hazardous material as per the EMPR (section 9.2) • Erosion control as per the EMPr (section 9.3) • Vehicles and equipment management as per the EMPr (section 9.4) • Socio economic management, including staff management, and visual impact management as per the EMPR (section 9.5) • Fire management as per the EMPr (section 9.6)
	Faunal disturbances, displacement of taxa and changes in distribution and abundance	27 L	
	Mortality of fauna	20 L	
	Poaching and snaring of faunal species	24 L	
Land use and Agricultural potential			
	None.		
Heritage			
	None.		
Visual			
	Potential visual impact on sensitive visual receptors in close proximity to the proposed developments	14 L	<ul style="list-style-type: none"> • Socio economic management, including staff management and visual impact management as per the EMPr (section 9.5)
	Potential visual impact on sensitive visual receptors within the region	20 L	
	Potential visual impact on protected and conservation areas	20 L	
	The potential visual impact of safety and security lighting of the developments at night on sensitive visual receptors in close proximity	16 L	
Socio-economic			

Activity	Impact summary	Significance	Proposed mitigation
	<i>Stimulation of the local economy</i> (Positive Impact)	33 <i>M</i>	<ul style="list-style-type: none"> Socio economic management, including staff management, and visual impact management as per the EMPr (section 9.5)
	<i>Creation of long term employment and business opportunities as well as opportunities for skills development and transfer</i> (Positive impact)	56 <i>H</i>	
	<i>Creation of opportunities for local SMME's</i> (Positive impact)	48 <i>M</i>	
Services and traffic			
	Increase in traffic on the surrounding roads	30 <i>L</i>	<ul style="list-style-type: none"> Socio economic management, including staff management and visual impact management as per the EMPr (section 9.5)
	Increase in the number and frequency of vehicles accessing the site	20 <i>L</i>	
Indirect impacts:			
Visual			
	The potential visual impact of the development on the visual character of the landscape and sense of place of the region	18 <i>L</i>	<ul style="list-style-type: none"> Socio economic management, including staff management and visual impact management as per the EMPr (section 9.5)
Cumulative impacts:			
Biodiversity (Flora)			
	Cumulative disturbance of sensitive habitats	22 <i>L</i>	<ul style="list-style-type: none"> Resource management, including access roads and resource management as per the EMPr (section 9.1) Materials management, including solid liquid and hazardous waste, fuel and hazardous material as per the EMPr (section 9.2) Erosion control as per the EMPr (section 9.3) Vehicles and equipment management as per the EMPr (section 9.4) Socio economic management, including staff management as per the EMPr (section 9.5) Waste management plan as per the EMPr (section 10.3)
	Cumulative reduction and damage to Conservation Important Species and protected trees	24 <i>L</i>	
Visual			
	The accumulation of built forms and within an otherwise natural environment	22 <i>L</i>	<ul style="list-style-type: none"> Socio economic management, including staff management and visual impact management as per the EMPr (section 9.5) Waste management plan as per the EMPr (section 10.3)
Socio-economics			
	<i>Creation of permanent employment and skills and development opportunities for members from the local community and creation of additional business and economic opportunities in the area</i> (Positive Impact)	33 <i>M</i>	<ul style="list-style-type: none"> Socio economic management, including staff management and visual impact management as per the EMPr (section 9.5)
	<i>Promotion of social and economic development in the local communities and improvement in</i>	27 <i>L</i>	

Activity	Impact summary	Significance	Proposed mitigation
	<i>the overall wellbeing of the community</i> (Positive Impact)		
	Services and traffic		
	Cumulative increase in traffic on the surrounding roads due to increased visitor numbers	18 L	<ul style="list-style-type: none"> • Socio-economic management as per the EMPr (section 9.3) • Waste management plan and storm water management plan (Section 10 and 11 of the EMPr) • Fire protection (Section 12 of EMPr)
	Cumulative increase in the number and frequency of vehicles accessing the site	22 L	
	Waste disposal practices will have an accumulative effect on the local landfill site's capacity	22 L	

Please refer to Appendix F for the full impact assessment.

2. ENVIRONMENTAL IMPACT STATEMENT

The proposed Finfoot Holiday Resort development is situated within the Central Sandy Bushveld vegetation type. Central Sandy Bushveld is **not listed as a Threatened Ecosystem** (Notice 1002 of Government Gazette 34809, 9 December 2011).

The study area is **not situated within any centres of plant endemism** as defined by Van Wyk & Smith (2001).

Two small areas in the central and western portions of the study area are classified as **Ecological Support Areas (ESA) 1 – Protected Areas Buffer**. These are areas that are not essential for meeting biodiversity representation targets/thresholds but which nevertheless play an important role in supporting the ecological functioning of critical biodiversity areas and/or in delivering ecosystem services that support socio-economic development, such as water provision, flood mitigation or carbon sequestration

The study area is also located adjacent to a formally Protected Area, the **Vaalkop Dam Nature Reserve**.

Two vegetation communities were identified within the study area, namely Low Closed Woodland and Plains Woodland. Both communities have an sensitivity rating of **Medium**. Disturbance levels within the study area are low to moderate, with two tourist facilities and three dwellings having already been constructed. The **alien plant infestation levels are low**, with only one species (**Opuntia stricta*) located. The indigenous tree *Senegalia mellifera* has invaded large areas, especially on the **heavy clay soils**. **No threatened plants** were located, and only one is likely, namely the NT-listed *Drimia sanguinea*. **Three confirmed trees are protected** under the NFA, namely *Boscia albitrunca*, *Senegalia erioloba* and *Combretum imberbe*. **No plants endemic** to the North West Province were recorded during fieldwork.

One threatened mammal is confirmed, namely Tsessebe, but only one individual is present on the reserve. One mammal (Serval) and one bird (European Roller) are listed as NT and are likely to regularly utilize the natural vegetation within the study area, at least on a regular basis. No raptor nests were located.

No archaeological (Stone Age and Iron Age) or historical settlements, structures, features, assemblages or artefacts **were recorded** during the heritage survey.

The construction and operation of the proposed Finfoot Holiday Resort development **will have a visual impact** on the scenic resources of the study area. However, mitigation of the visual impact is possible and will go far in reducing the magnitude of visual impacts discussed by further softening the appearance of the development within its context. Considering all factors, it is concluded that the **development is appropriate within its context** from a visual perspective, and that the anticipated visual impacts are neither unacceptable in nature nor excessive in magnitude. Potential visual impacts are therefore not considered to be a fatal flaw for this development.

A tread lightly approach will be encouraged for all of the development sites in terms of the design and layout of the proposed Tented Chalets, Holiday Cottages and associated infrastructure. Majority of the sites are located in areas with a **low to moderate** sensitivity ratings. Small portions of certain sites are located within **high** sensitivity areas owing to the fact that these development stands are located within the 32m and 100m watercourse buffers.

All areas with a high sensitivity rating have been avoided with the exception of the Four (4) Holiday Cottages (no. 9-12) located on Portions 65-68. Additionally, the 100 m buffer and the full supply level of the adjacent Vaalkop Dam has been respected.

Six (6) Holiday Cottages have the potential to be located on heavy clay soils. These are units 9-11 and 13-15 located on Portion 65-67 and 69 -71.

Statement:

The proposed development site is acceptable for development and is not fatally flawed in any way. The construction impacts, if effectively managed according to the mitigation measures proposed in this report, specialist reports and the draft environmental management programme (EMPr), will mostly be of low significance, post mitigation. It should be noted that moderate post mitigation significance ratings are anticipated for the risk to ecological function of the Vaalkop Dam and drainage lines and disturbance of sensitive habitats. This is mainly due to the placement of infrastructure in areas of high sensitivity areas (i.e., watercourse buffers). No post mitigation impacts of high significance are expected.

Operational impacts can be similarly mitigated and residual impacts are expected to be of low significance overall. No post mitigation impacts of high significance are expected.

Positive impacts include job creation and employment opportunities for both the construction and operational phases, skills transfer and development. Diversifying the tourism offerings within the region will also have an overall positive impact.

In light of the above discussion, it is recommended that the proposed development be supported on the condition that all mitigation measures mentioned in this report, the specialist reports and the draft EMPr are implemented and adhered to throughout the project lifecycle.

No-go Alternative:

The No-go Alternative implies that the development of the proposed Finfoot Holiday Resort development will not take place. In this scenario, the receiving environment will not be impacted upon negatively in any manner, with particular reference to protected flora and the visual quality of the landscape.

However, it should also be noted that no positive impacts will be realized such as job creation and employment opportunities, skills transfer and development.

This would not be ideal owing to the high unemployment rate in the local municipality and the fact that the majority of the population lives in a rural environment. Additionally, direct employment benefits and community beneficiation will not materialize.

In light of the above, as well as the fact that all negative impacts can be adequately mitigated and managed, it is not recommended that the No-go Alternative be supported.

SECTION E: RECOMMENDATION OF PRACTITIONER

The proposed Finfoot Holiday Resort development is situated within the Central Sandy Bushveld vegetation type. As discussed in the preceding section, all significant negative impacts can be successfully mitigated and managed to acceptable levels (i.e., moderate to low) during all phases of the proposed development, and at all development sites.

All mitigation measures as detailed in this BAR, the attached Specialist Impact Assessments and the Draft Environmental Management Programme (EMPr) must be implemented and adhered for the duration of the project lifecycle (i.e., during the planning, construction and operational phases).

It is, however, recommended that a geotechnical engineer is appointed prior to the commencement of construction on the Holiday Cottages sites 9-11 and 13-15 located on Portions 65-67 and 69 -71 to undertake a geotechnical report for all these identified sites located on the heavy clay soils. Any construction undertaken on these sites should be carefully planned and implemented and must be done within the bounds of this report, as well as, per the recommendations of the geotechnical report.

In addition, the following specific recommendations apply:

Planning and Design Phase:

- Register boreholes to be used for potable water extraction as per DWS requirements.
- The five (5) existing submersible borehole pumps utilized for the ground water extraction must be inspected to ensure it complies with the relevant standards and specifications. Should it be found that the pumps do not comply, these existing pumps will have to be upgraded and / or replaced in accordance with the relevant standards and specifications.
- No development should take place within 100m of the full supply level of the adjacent Vaalkop Dam to prevent unnecessary disturbance.
- The sensitivity map must be used as a decision tool to guide the layout design for the holiday cottages, as well as, the Tented Chalets. Development on areas of high environmental sensitivity must be avoided.
- In compliance with the recommendations of a geotechnical engineer, all construction on the clay soils should be carefully planned and implemented.
- It is recommended that the western-most tract, adjacent to the proposed and existing Tented Chalets, remain undeveloped to maintain biodiversity in the immediate area.
- Only locally occurring, indigenous plant species should be planted around the proposed and existing dwellings. No alien plants should be allowed to be planted within any of the stands, tent sites or any other development sites.
- Each stand, lodge, road or other proposed development areas should be checked by an experienced botanist prior to clearing and all SCC or protected plants should be marked with hazard tape to indicate where development may not take place. These plants should remain *in situ*.

Construction Phase:

- In order to comply with the National Environmental Management: Biodiversity Act (Act No. 10 of 2004), all listed invasive exotic plants as indicated in Appendix 1 should be targeted and controlled. This is relevant to at least one declared invasive species, namely * *Opuntia stricta*.
- Weeds will inevitably establish around the developments and it is important that weed control, if involving herbicides, be managed correctly to reduce the impact on the adjacent natural vegetation. Regular inspections should be made to determine if any additional alien plants have established.
- An alien plant control plan (APCP) will be compiled and implemented to remove all invasive exotic plants.
- No development should take place within 100m of the full supply level of the adjacent Vaalkop Dam to prevent unnecessary disturbance of the many confirmed and potentially occurring fauna species

- Operation and storage of equipment in the riparian and/or dam areas is not permitted.
- Only locally occurring, indigenous plant species should be planted around the proposed and existing dwellings. No alien plants should be allowed to be planted within any of the stands, tent sites or any other development sites.
- All existing and proposed roads should contain adequate stormwater drainage and erosion control measures.
- Poaching is a potential threat. External labour teams used during clearing and building should preferably be accommodated off site; if this is not possible then teams should be carefully monitored to ensure that no unsupervised access to plant and animal resources takes place.

Operational Phase:

- Regulate and control movement over the site. Personnel, vehicles and equipment to move along designated routes.
- Maintain all roads in good condition to prevent dust and erosion.
- Runoff from roads must be managed to avoid erosion and pollution problems.
- No protected trees or plants may be removed without the relevant permits from the local authority.
- Implement fines for the damage or destruction of marked and protected specimens.
- Guests and staff may not tamper or remove flora and neither may anyone collect seed from the plants without permission from the local authority.
- Management measures to eradicate and control alien plants need to be informed by the Properties invasive species management program.
- Grounds staff should be trained to recognize and eradicate potential invasive plants.
- Undertake yearly removal of aliens within the area (done in summer) until equilibration is reached. This may take several years.
- Developers must implement an alien plant control program to combat the infestation present, especially along the edges and within drainage lines and wetlands. This program should include regular inspections and follow-ups.
- The total volume of water that may be abstracted for Finfoot Lake Reserve is 18 270kℓ/annum or 50.05 kℓ/day and for the Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ is 13 876.65kℓ/annum or 38.01kℓ/day. These abstraction rates are not to be exceeded.

Assuming that the above recommendations are implemented and adhered to, there is no reason why the proposed Finfoot Holiday Resort development should not take place. The Environmental Assessment Practitioner recommends that the development be supported.

SECTION F: APPENDIXES

Appendix A: Maps

- A.1: Locality Map
- A.2: Layout Map
- A.3: Sensitivity Map

Appendix B: Photoplates

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

- D.1: Heritage Impact Assessment Report
- D.2: Ecology Evaluation Report
- D.3: Visual Impact Assessment Report

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Other Information

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APPENDIX A: MAPS

APPENDIX A.1: LOCALITY MAP

APPENDIX A.2: LAYOUT MAP

APPENDIX A.3: SENSITIVITY MAP

APPENDIX B: PHOTOPLATES

APPENDIX C: FACILITY ILLUSTRATION(S)

APPENDIX D: SPECIALIST REPORTS

APPENDIX D.1: HERITAGE IMPACT ASESMENT REPORT

APPENDIX D.2: ECOLOGY EVALUATION REPORT

APPENDIX D.3: VISUAL IMPACT ASESMENT REPORT

APPENDIX E: PUBLIC PARTICIPATION

APPENDIX F: IMPACT ASSESSMENT

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APPENDIX I: OTHER INFORMATION

APPENDIX I.1: SPECIALIST DECLARATIONS

APPENDIX I.2: PROPERTY DESCRIPTIONS

APPENDIX I.1: SERVICES REPORT

