T-N003-02 Estcourt

Pre-application Scoping Report

THE PROPOSED ESTCOURT RENEWABLE SOLAR PV ENERGY GENERATION PLANT AND ELECTRIC TRUCK CHARGING FACILITY ON PORTION 19 OF THE FARM KLIPPLAAT DRIFT NO. 1009 FS, OFF THE N3 HIGHWAY, NEAR ESTCOURT, KWA-ZULU NATAL PROVINCE

APPLICATION FOR:

Environmental Authorisation

PREPARED FOR:

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Environmental Management and Impact Assessment | Omgewingsbestuur en Impakbeoordeling

SITE CODE: T-N003-02

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PRE-APPLICATION SCOPING REPORT AND PLAN OF STUDY

KZNEDTEA REF: To be provided

November 2024

N3 ELECTRIC HIGHWAY CO.

T-N003-02 ESTCOURT

EXECUTIVE SUMMARY

N3 Electric Highway Co. is proposing the development of the Estcourt solar photovoltaic renewable energy generation plant and electric truck charging facility on Portion 19 of the Farm Klipplaat Drift No. 1009 FS, off the N3 highway, near Estcourt, Kwa-Zulu Natal. The facility will include a solar photovoltaic (PV) energy generation facility connected to the electric vehicle and truck charging facilities via a distribution line with a capacity of approximately 33 kV. Additional infrastructure includes the development of a battery energy storage system, overnight parking, a wash bay, a stormwater pond, water tanks, a lounge area with a kitchen, ablution facilities with a septic tank, a shop, offices and associated infrastructure.

The proposed site is located at the corner of the N3 and Ntabamhlope Road, approximately 3km south-west of Estcourt, in the uThukela District Municipality, Kwa-Zulu Natal. An area of approximately 65 hectares (ha) will be considered and assessed.

The development will cover an area of approximately 42.7 hectares, with the solar PV array occupying about 39.5 hectares. This configuration will allow for an installed capacity of up to 39.5 megawatt-peak (MWp), which measures the maximum output of power from the solar array.

Site coordinates (approximate central point): 29°01’17.80’’S ; 29°49’33.80’’E.

The applicant - N3 Electric Highway Co. who will undertake the activity should it be approved, appointed EnviroAfrica CC as the independent Environmental Assessment Practitioner (EAP) to undertake the relevant EIA and the Public Participation Process required in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA).

A scoping exercise is being undertaken to present the proposed activities to the I&APs and to identify environmental issues discussed in this report and concerns raised as a result of the proposed development alternatives to date. The issues and concerns were raised by I&APs, authorities, the project team as well as specialist input, based on baseline studies undertaken.

This pre-application Scoping Report, being undertaken in terms of NEMA, summarises the process undertaken, the alternatives presented, and the issues and concerns raised. As a result of the above, the need for the following specialist studies, have been identified:

- Biodiversity Assessment
- Freshwater Assessment
- Heritage Impact Assessment
- Socio-economic Impact Assessment
- Visual Impact Assessment
- Agricultural Potential Assessment
- Avifauna Impact Assessment

These specialist studies have been conducted and some have been concluded. The findings of some the studies have already been included in this report, however, the studies will be finalised and the findings included during the EIA phase.

Any further issues raised as a result of the Public Participation Process will be dealt with during the EIA phase. The significance of the impacts associated with the alternatives proposed will be assessed in these specialist studies, as part of the EIA. Once all the specialist studies have been completed, they will be summarised in an Environmental Impact Report (EIR), which integrates the findings of the assessment phase of the EIA.

Based on the significance of the issues raised during the ongoing Public Participation Process and Scoping Phase, it is evident that an Environmental Impact Assessment (EIA) is required. ***It is therefore recommended that authorisation for the commencement of an EIA for the proposed development is granted.*** Should the EIA process be authorised, the issues raised in the process to date will be addressed and the specialist studies noted in this report, will be undertaken.

PRELIMINARY RECOMMENDATIONS / CONDITIONS FOR AUTHORISATION

- In cases where there is not a significant impact on agricultural land, a diversification of income sources should be considered by the landowner(s). Through establishing an agreement between the applicant and the landowner(s); landowner(s) will be enabled to share in the profit generated from the charging facility, thereby offsetting their probable financial loss sustained through the loss of agricultural land (utilised or grazing mainly) over the development area.

DOCUMENT CONTROL

Version	Name	Role / Responsibility	Date
AA	Lian Roos	Author / First draft for review	09 July 2024
BB	Clinton Geyser	Technical reviewer	16 August 2024
CC	Lian Roos	Second draft for review	21 October 2024
DD			
EE			
Final			

CONTENTS

FIGURES

TABLES

APPENDICES

ACRONYMS

BGIS	Biodiversity Geographic Information System
CBA	Critical Biodiversity Area
DFFE	Department of Forestry, Fisheries and the Environment
DWS	Department of Water and Sanitation
KZNEDTEA	KwaZulu-Natal Department of Economic Development and Environmental Affairs
EAP	Environmental Assessment Practitioner
ECA	Environment Conservation Act (Act No. 73 of 1989)
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMP	Environmental Management Programme
ESA	Ecological Support Area
EV	Electric Vehicle
EWR	Environmental Water Requirements

HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
MWp	Megawatt peak
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act (Act No. 10 of 2004)
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
NID	Notice of Intent to Develop
NWA	National Water Act
OESA	Other Ecological Support Area
PV	Photovoltaic
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SEF	Solar PV Energy Generation Facility
VIA	Visual Impact Assessment
WULA	Water Use Licence Application

1 INTRODUCTION

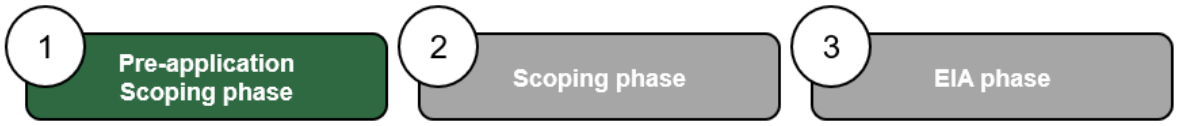
1.1 BACKGROUND

N3 Electric Highway Co. is proposing the development of the Estcourt solar photovoltaic renewable energy generation plant and electric truck charging facility on Portion 19 of the Farm Klipplaat Drift No. 1009 FS, off the N3 highway, near Estcourt, Kwa-Zulu Natal. The facility will include a solar photovoltaic (PV) energy generation facility connected to the electric vehicle and truck charging facilities via a distribution line with a capacity of approximately 33 kV. Additional infrastructure includes the development of a battery energy storage system, overnight parking, a wash bay, a stormwater pond, water tanks, a lounge area with a kitchen, ablution facilities with a septic tank, a shop, offices and associated infrastructure.

The proposed site is located at the corner of the N3 and Ntabamhlope Road, approximately 3 km south-west of Estcourt, in the uThukela District Municipality, Kwa-Zulu Natal. An area of approximately 65 ha will be considered and assessed.

Site coordinates (approximate central point): 29°01’17.80’’S ; 29°49’33.80’’E.

The applicant - N3 Electric Highway Co. who will undertake the activity should it be approved, appointed EnviroAfrica CC as the independent Environmental Assessment Practitioner (EAP) responsible for undertaking the relevant EIA and the Public Participation Process required in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA).



This pre-application Scoping Report falls within the pre-application Scoping phase which will be submitted to the Economic Department, Tourism and Environmental Affairs (KZNEDTEA)(KwaZulu-Natal) for consideration, and forms part of the Scoping & EIA process. The purpose of this pre-application Scoping Report is to describe the proposed project, the process followed to date, to present alternatives and to list issues identified for further study and comment by specialists.

Should the Scoping & Plan of Study for EIA process be authorised by KZNEDTEA, the Specialist Studies (noted in Section 8) will be undertaken, and the issues (noted in Section 6) will be investigated and assessed during the next phase of the process (Scoping phase).

1.2 DESCRIPTION OF THE PROPOSED ACTIVITY

N3 Electric Highway Co. is proposing the development of the Estcourt solar photovoltaic renewable energy generation plant and electric truck charging facility on Portion 19 of the Farm Klipplaat Drift No. 1009 FS, off the N3 highway, near Estcourt, Kwa-Zulu Natal. The facility will include a solar photovoltaic (PV) energy generation facility connected to the electric vehicle and truck charging facilities via a distribution line with a capacity of approximately 33 kV. Additional infrastructure includes the development of a battery energy storage system, overnight parking, a wash bay, a stormwater pond, water tanks, a lounge area with a kitchen, ablution facilities with a septic tank, a shop, offices and associated infrastructure.

The solar PV plant will be connected to the electric vehicle and truck charging facilities via a distribution line with a capacity of approximately 33 kV. The development will cover an area of approximately 42.7

hectares (ha), with the solar PV array occupying about 39.5 hectares. This configuration will allow for an installed capacity of up to 39.5 megawatt-peak (MWp), which measures the maximum output of power from the solar array.

In addition to the solar PV installation, the facility will include a battery energy storage system. A key component of the facility will be a battery energy storage system specifically designed to support electric vehicle and truck charging. This system will store the generated energy ensuring a reliable and continuous power supply for the charging stations, particularly during times of high demand.

In addition to the solar PV installation and battery storage, the development will incorporate several support structures. These will include overnight parking areas for vehicles, a wash bay for cleaning, and a stormwater pond to manage runoff.

Rainfall on the site will be harvested for reuse, and any surplus or flood event stormwater will be managed and released in a controlled manner. Stormwater will be collected via pipes and drainage channels, then directed to an attenuation pond (stormwater), where excess water is stored and gradually released to prevent flooding. Elevated PV panels will have gutters to collect runoff, which will also be directed to the pond; the collected water will be treated for reuse.

To support staff and visitors, the facility will feature a lounge area with a kitchen, as well as ablution facilities equipped with a septic tank. Additionally, there will be a shop and office spaces to facilitate the operation and management of the facility and its services.

Vehicle and truck access to the site will be via an access point located approximately 100 meters east of the N3 and Ntabamhlope Road interchange, along the Ntabamhlope Road.

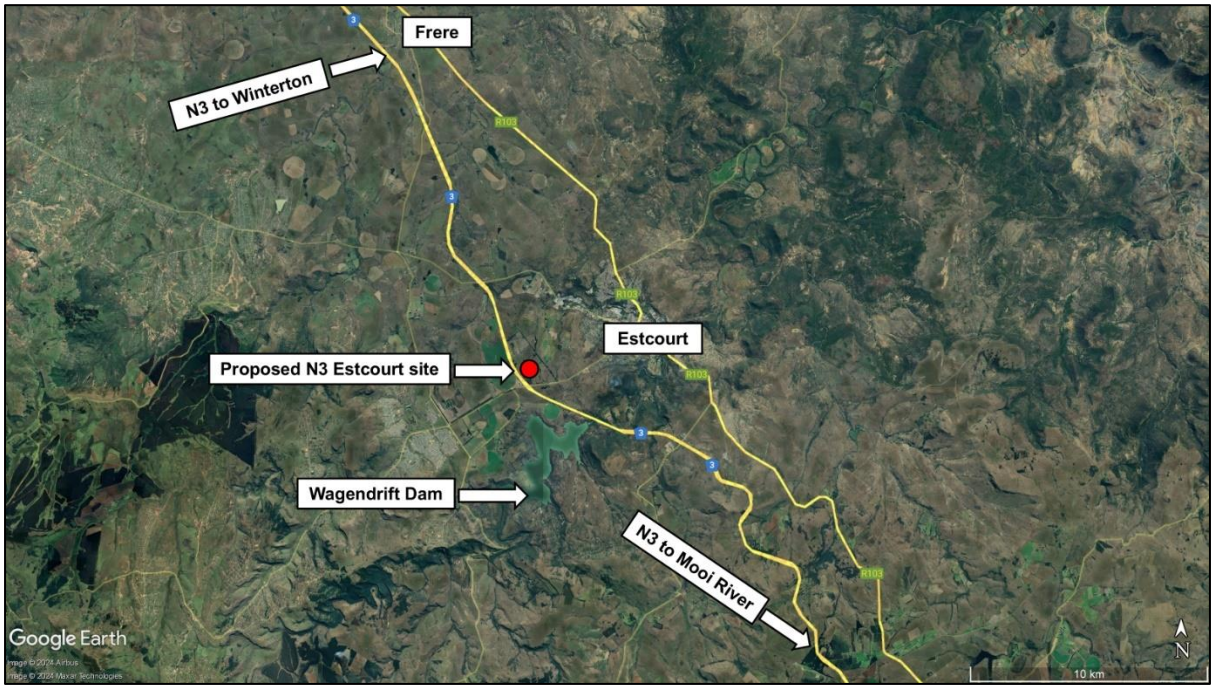


Figure 1: Google Earth image showing the locality of the proposed site (indicated by the red dot)

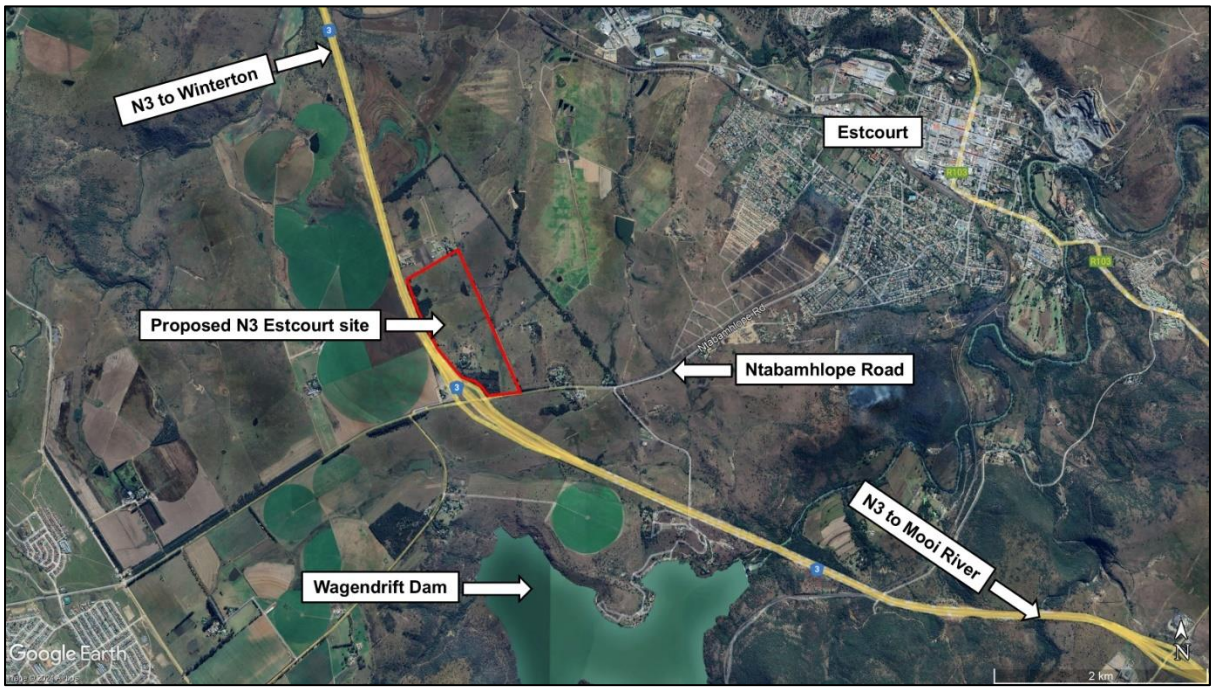


Figure 2: Google Earth image (1) of the proposed property and the development footprint (red polygon)

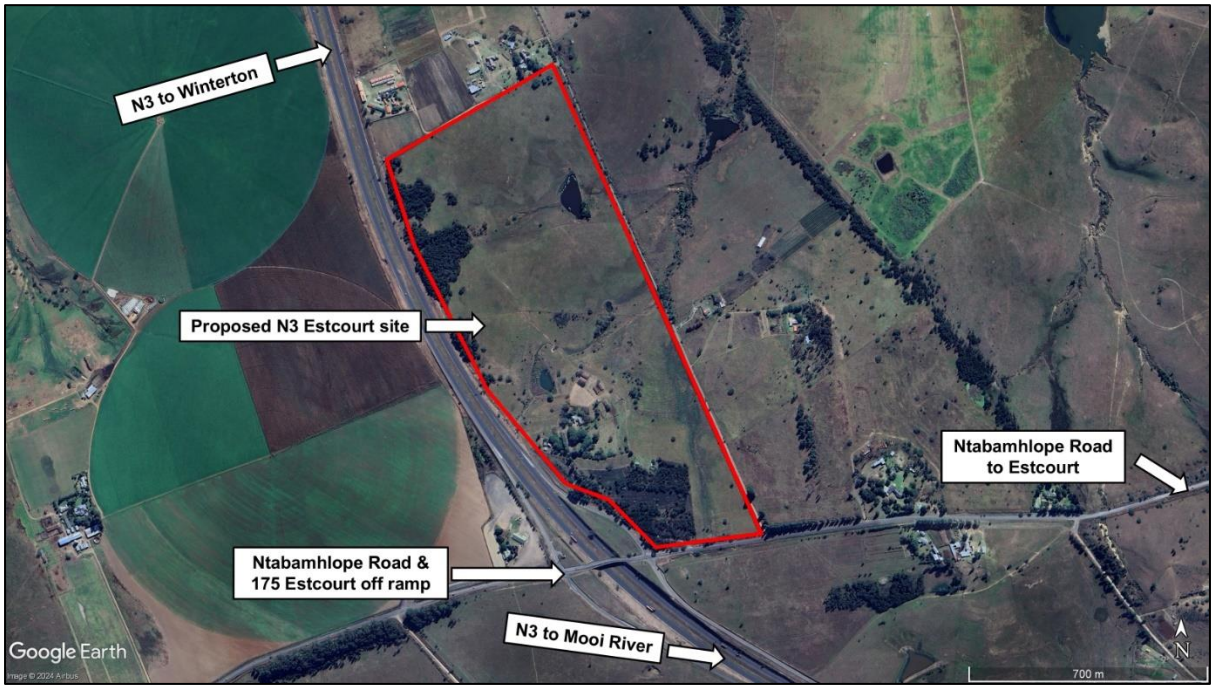


Figure 3: Google Earth image (2) of the proposed property and the development footprint (red polygon)

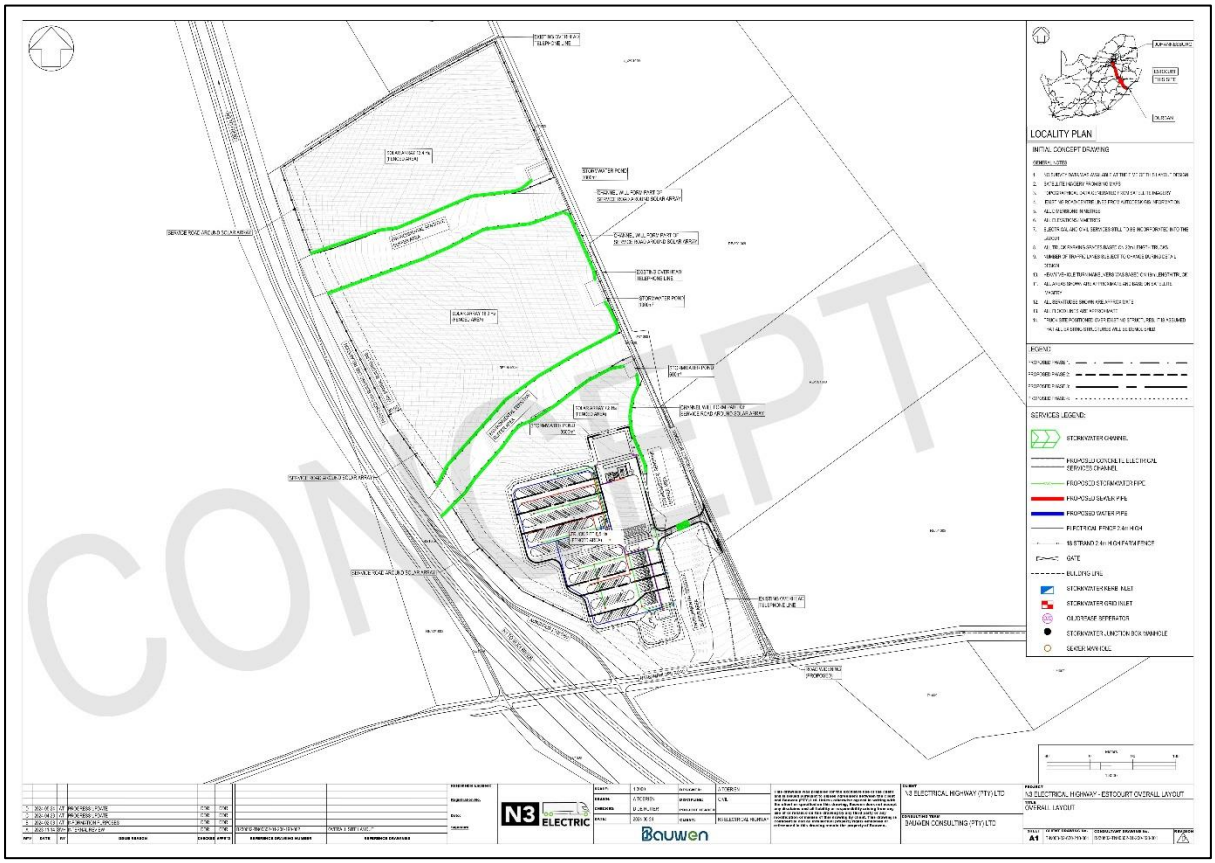


Figure 4: Overall layout

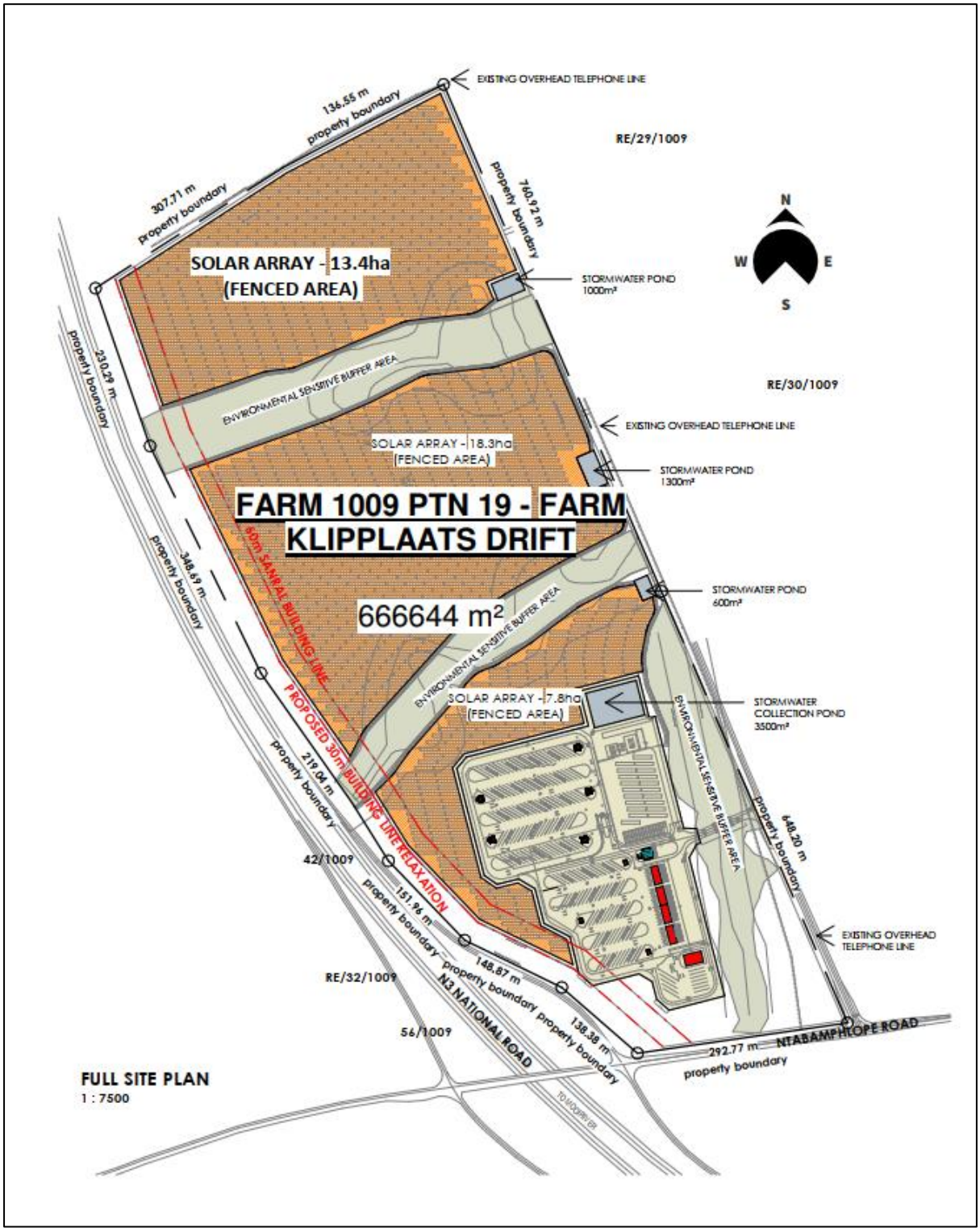


Figure 5: Draft SDP (Spatial Development Plan)

2 NEED AND DESIRABILITY

In terms of the National Environmental Management Act, as amended, EIA 2014 regulations the Scoping & EIA reports must provide a description of the need and desirability of the proposed activity. The consideration of "need and desirability" in EIA decision-making requires the consideration of the strategic context of the development proposal along with the broader societal needs and the public interest.

While the concept of need and desirability relates to the *type* of development being proposed, essentially, the concept of need and desirability can be explained in terms of the general meaning of its two components in which *need* refers to *time* and *desirability* to *place* – i.e. is this the right time and is it the right place for locating the type of land-use/activity being proposed? Need and desirability can be equated to *wise use of land* – i.e. the question of what the most sustainable use of land is.

2.1 NEED

South Africa is committed to the Paris Agreement by making efforts to reduce greenhouse gas emissions (GHG) to 398-510 $MtCO_2e$[1] by 2025 and 350-420 $MtCO_2e$ by 2030. In pursuant to the mission, the government has formulated the Green Transport Strategy for South Africa (2018-2050). As a part of this commitment, South Africa intends to widely adopt the use of electric vehicles (EVs) in its vehicle population to reduce the emissions from the Transport sector which accounts for 10.8% of the country's total GHG emissions.

Currently the market share of EVs in South Africa is minimal (approximately 2300 vehicles), and if this number is to grow exponentially, the availability and accessibly of charging infrastructure for EVs will need to be seriously considered. While the push to electrify the automotive sector is well underway in urban and suburban areas, the same cannot be said for rural South Africa, with the lack of rural charging infrastructure remaining the most significant barrier to large-scale EV adoption.

In light of the current situation in South Africa, where the market share of EVs remains minimal, it becomes crucial to address the lack of reliable chargers, particularly in rural areas, to facilitate the exponential growth of EV adoption. The focus of EV adoption has been limited to passenger vehicles but heavy vehicles is as an important contributor to carbon emissions. As trucks generally follow major routes to transport the freight. Infrastructure must be developed independent of the existing grid to make the transportation of freight possible.

Truck EV recharging stations in rural areas of South Africa especially along the N3 Route corridor (Durban, KwaZulu Natal to Johannesburg, Gauteng) are imperative for ensuring efficient and sustainable transportation. With the growing demand for goods transport, particularly in the agricultural and industrial sectors, diesel-powered trucks dominate the highways. Introducing recharging stations specifically tailored for long-haul trucks not only facilitates smoother operations but also aligns with global efforts to reduce carbon emissions and dependence on fossil fuels. Moreover, investing in such infrastructure in rural communities can stimulate local economies and foster job creation, contributing to overall regional development. Thus, the establishment of EV recharging stations is not just a necessity but a strategic step towards a sustainable, more connected future for South Africa's transport industry.

As part of the global energy crisis and the shift to renewable energy, the trend towards electric vehicles is ever growing, and South Africa will be no exception. High powered, ultra-fast charging is the minimum viable standard to provide a stop and charge capability comparable with filling a vehicle with petrol or

[1] Million Tonnes of carbon dioxide equivalent

diesel (ZCC Info-Booklet, 2022). In South Africa, with a weak electrical grid and loadshedding, high power, ultra-fast charging will require on-site power generation, and with the need to charge when needed, a national network of charging facilities will be required (ZCC Info-Booklet, 2022).

2.2 DESIRABILITY

The following factors determine the desirability of the area for the proposed development:

2.2.1 Location and Accessibility

The proposed site is located on Portion 19 of the Farm Klipplaat Drift No. 1009 FS, off the N3, at the corner of the N3 and Ntabamhlope Rd, approximately 3km south-west of Estcourt, in the uThukela District Municipality, Kwa-Zulu Natal.

Site coordinates (approximate central point): 29°01’17.80’’S ; 29°49’33.80’’E.

The site is ideally located on the N3, the major route between Durban (with South Africa’s busiest port) and Johannesburg (South Arica’s largest city and economic hub). The N3 Route is one of the busiest freight routes in South Africa, with trucks carrying an average of 50-million tons of freight per annum constitute around 38% of traffic on the N3[2].

Trucks constitute approximately 44% of all vehicles travelling on the N3 Toll Route daily. During the past decade, a significant increase (between 8% and 10% per annum) in the number of trucks on the N3 Toll Route has been recorded. This is mainly due to the transfer of freight, especially bulk products, from rail to road. On average, 7000 trucks move thousands of tons of goods on the N3 every day[3].

The property has been partially disturbed by current and past agricultural activities, mostly livestock grazing. The site is mostly well-managed, and the veld is in generally good condition, however, some parts show localised over-grazing.

The site falls within the KwaZulu-Natal Highland Thornveld vegetation type (Mucina and Rutherford, 2006; SANBI, 2018) which is currently listed as a Least Concern ecosystem at a national level (SANBI, 2021; DFFE, 2022). The site is therefore ideal, as there are no significant vegetation concerns on the site.

The general area is also ideally suited for a solar PV facility due to the relatively high irradiation levels. The Global Horizontal Irradiation (GHI) average for the area is 1850.3 kWh/m^2 according to the Global Solar Atlas (Figure 6)[4]. According to the Global Weather Corp Global horizontal irradiance (GHI) is a measurement of the total solar electromagnetic radiation above a horizontal surface at a given location and time. It is the most useful metric for predicting solar panel output. It accounts for 71.6% of PV performance variations.

According to the Department of Forestry, Fisheries and the Environment (DFFE) Screening Tool Report (Appendix 1), no intersections with Environmental Management Framework areas was found.

[2] http://www.n3tc.co.za/n3-toll-route-traffic-and-crash-data-provide-numerous-safety-clues/
[3] http://www.n3tc.co.za
[4] https://globalsolaratlas.info/map

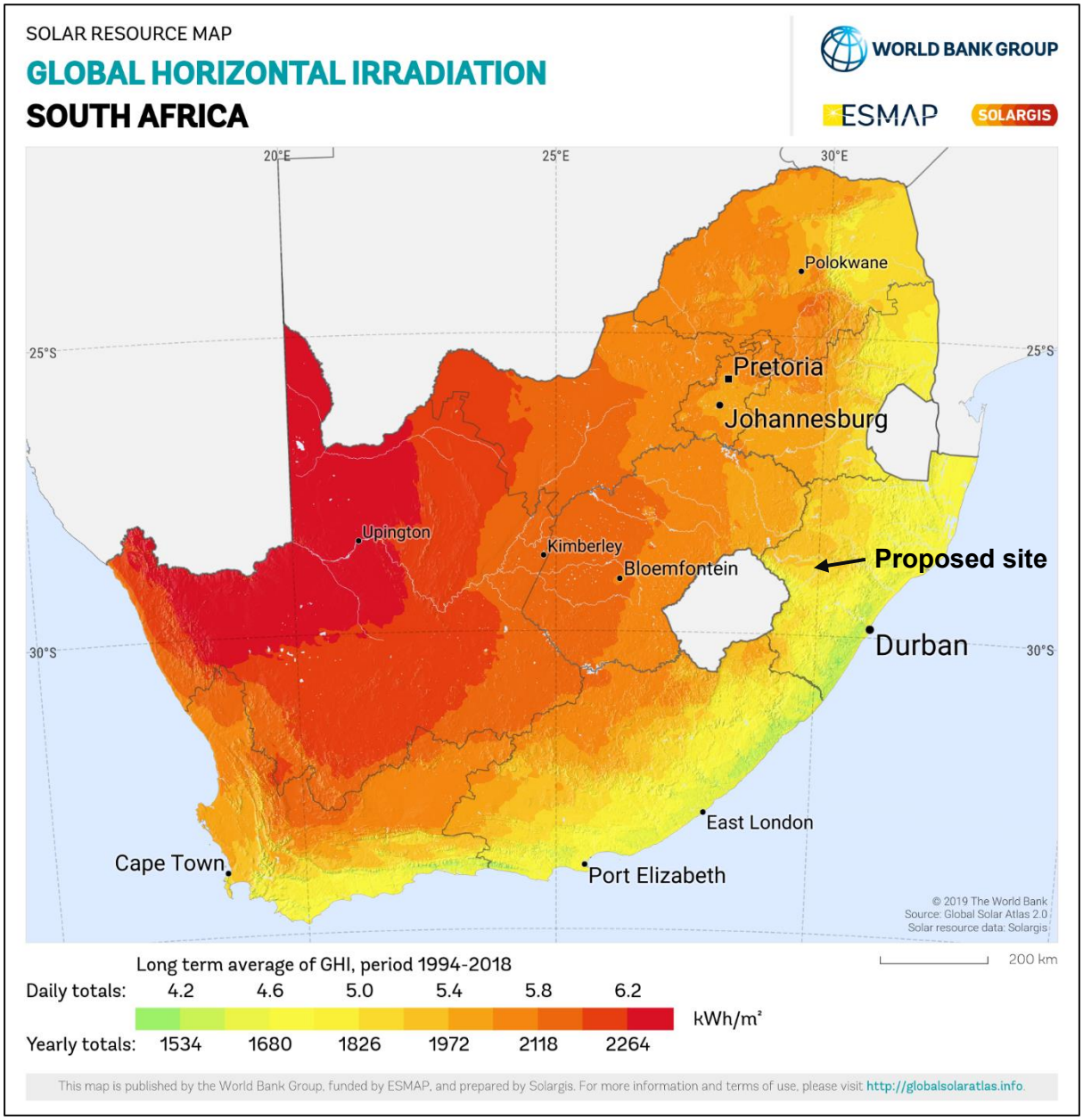


Figure 6: Global Solar Atlas image showing the Global Horizontal Irradiation levels for the proposed site

2.2.2 Compatibility with the Surrounding Area

The proposed activity is not within the existing land use rights of the property. The property is zoned Agricultural. A rezoning application in terms of SLUMA will be required. The surrounding land-uses are also predominantly agricultural in nature. The proposed development is not expected to significantly impact on people's health and well-being (*e.g.,* in terms of noise, odours*, etc.*). However, the proposed development may have an impact on the visual character and "sense of place", since the property is within an agricultural area. This development supports the broader goals of promoting sustainable energy infrastructure while preserving the visual integrity of the KwaZulu Natal's scenic landscapes.

2.2.3 Objectives of Integrated Environmental Management

The general objectives of Integrated Environmental Management have been taken into account through the following:

- The actual and potential impacts of the activity on the environment, socio-economic conditions and cultural heritage have been identified, predicted and will be evaluated, as well as the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impact, maximizing benefits and promoting compliance with the principles of environmental management.
- The effects of the activity on the environment have been considered before actions taken in connection with them – *alternatives have been considered and will be investigated.*
- Adequate and appropriate opportunity for public participation is ensured through the public participation process.
- The environmental attributes have been considered in the management and decision-making of the activity – *an EMP will be compiled and included in the Environmental Impact Assessment Report for the proposed activity. The development must adhere to the requirements of all applicable state Authorities.*

2.2.4 Principles of Environmental Management

he principles of environmental management as set out in section 2 of NEMA have been taken into account. The principles pertinent to this activity include:

- People and their needs have been placed at the forefront while serving their physical, psychological, developmental, cultural and social interests – *the proposed activity will have a beneficial impact on people. However, potential negative impacts will also be investigated.*
- Development must be socially, environmentally and economically sustainable. Where disturbance of ecosystems, loss of biodiversity, pollution and degradation, and landscapes and sites that constitute the nation's cultural heritage cannot be avoided, are minimised and remedied. - *Although the activity is expected to have little significant environmental impact, these impacts have been considered, and mitigation measures have been put in place. This will also be dealt with in the EMP*
- Where waste cannot be avoided, it is minimised and remedied through the implementation and adherence of EMP.
- The use of non-renewable natural resources is responsible and equitable .
- The negative impacts on the environment and on people's environmental rights have been anticipated and will be prevented, and where they cannot be prevented, are minimised and remedied.
- The interests, needs and values of all interested and affected parties will be taken into account in any decisions through the Public Participation Process
- The social, economic and environmental impacts of the activity have been considered, assessed and evaluated, including the disadvantages and benefits – *will be addressed in the Environmental Impact Assessment Report.*
- The effects of decisions on all aspects of the environment and all people in the environment have been taken into account, by pursuing what is considered the best practicable environmental option – *the proposed activity is expected to have minimal/negligible environmental impacts, especially after mitigation measures as described in the specialist reports and in the EMP are implemented.*

3 LEGAL REQUIREMENTS

The current assessment is being undertaken in terms of the National Environmental Management Act (Act 107 of 1998, NEMA), to be read with section 24 (5): NEMA EIA Regulations 2014. However, the provisions of various other Acts must also be considered within this EIA. The legislation that is relevant to this study is briefly outlined below:

3.1 THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA

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

3.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)

The National Environmental Management Act (Act 107 of 1998) (NEMA), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment, and which require authorisation from the relevant authorities based on the findings of an environmental assessment. NEMA is a national act, which is enforced by the Department of Forestry, Fisheries and the Environment (DFFE). These powers are delegated in KwaZulu-Natal to the Department of Economic Development, Tourism and Environmental Affairs (KZNEDTEA).

On the 04 December 2014 the Minister of Water and Environmental Affairs promulgated regulations in terms of Chapter 5 of the NEMA, namely the EIA Regulations 2014. These were amended on 07 April 2017 (GN No. 326, No. 327 (Listing Notice 1), No. 325 (Listing Notice 2), No. 324 (Listing Notice 3) in Government Gazette No. 40772 of 07 April 2017). Listing Notice 1 and 3 are for a Basic Assessment and Listing Notice 2 for a full Environmental Impact Assessment.

According to the regulations of Section 24(5) of NEMA, authorisation is required for the following listed activities for the proposed development i.e. Estcourt Recharging Station (Table 1):

Table 1: NEMA Listed Activities

No.	Listed Activities as per Listing Notice 1, 2 and 3 (GN R327, R324, R325)	Applicability to the development
Government Notice R327 (Listing Notice 1)		
11.	The development of facilities or infrastructure for the transmission and distribution of electricity; (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.	The proposed solar PV plant and the electric vehicle and truck recharge facilities of the development will be connected via a 33 kV distribution line.
12.	The development of; (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; (ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs; a) within a watercourse; b) in front of a development setback; or c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse	In some areas within 32 meters of a watercourse, the proposed development's structures will have a physical footprint of 100 square meters or more.
19.	The infilling or depositing of any material of more than 10 cubic metres into, or the dredffging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving a) will occur behind a development setback b) is for maintenance purposes undertaken in accordance with a maintenance management plan; c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies	In some areas within 32 meters of a watercourse, the proposed development's structures will have a physical footprint of 10 square meters or more. Excavations, removal or moving of material of more than 10 cubic metres from a watercourse is likely to take place during construction.

No.	Listed Activities as per Listing Notice 1, 2 and 3 (GN R327, R324, R325)	Applicability to the development
24.	The development of a road; (i) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding a road; f) which is identified and included in activity 27 in Listing Notice 2 of 2014; or g) where the entire road falls within an urban area; or h) which is 1 kilometre or shorter	An access road of 9m is required for vehicles to gain access to the proposed development site.
28.	Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare.	The proposed development site will be located outside an urban area and will exceed 1ha of land utilised for agriculture.
Government Notice R325 (Listing Notice 2)		
1.	The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 MW or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs; a) an urban area; or b) On existing infrastructure	The proposed solar PV plant will allow for an installed capacity of up to 39.5 megawatt-peak (MWp), which measures the maximum output of power from the solar array. The development site is outside an urban area.

No.	Listed Activities as per Listing Notice 1, 2 and 3 (GN R327, R324, R325)	Applicability to the development
15.	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for; (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	The proposed development site is 42.7ha and will clear an area of 20ha or more of indigenous vegetation over the proposed site. Indigenous vegetation will be cleared for the proposed development site even though the indigenous vegetation of the site has been identified as predominantly degraded.
Government Notice R324 (Listing Notice 3)		
4.	The development of a road wider than 4 meters with a reserve less than 13,5m	Internal roads wider than 4m with a reserve less than 13,5m is required for vehicles to gain access within the proposed development site for operational and maintenance purposes.
12.	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.	More than 300 m^2 of indigenous vegetation will be cleared
14.	The development of (i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or (ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs a) within a watercourse; b) in front of a development setback; or c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.	In some areas within 32 meters of a watercourse, the proposed development's structures will have a physical footprint of 10 square meters or more.

An application form will be submitted to the KwaZulu-Natal Department of Economic Development and Environmental Affairs (KZNEDTEA). On acknowledgment from KZNEDTEA, the Scoping phase process will be initiated and undertaken to further identify potential issues.

3.3 NATIONAL HERITAGE RESOURCES ACT

The protection and management of South Africa's heritage resources are controlled by the National Heritage Resources Act (Act No. 25 of 1999).

Section 38(8) also makes provision for the assessment of heritage impacts as part of an EIA process and indicates that if such an assessment is found to be adequate, a separate HIA is not required.

Furthermore, in terms of Section 34(1), no person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the SAHRA, or the responsible resources authority. Nor may anyone destroy, damage, alter, exhume or remove from its original position, or otherwise disturb, any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority, without a permit issued by the SAHRA, or a provincial heritage authority, in terms of Section 36 (3). In terms of Section 35 (4), no person may destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object, without a permit issued by the SAHRA, or the responsible resources authority.

Section 38(1) of the NHRA of 1999 requires the responsible heritage resources authority to notify the person who intends to undertake a development that fulfils the following criteria to submit an impact assessment report if there is reason to believe that heritage resources will be affected by such event:

- the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- the construction of a bridge or similar structure exceeding 50m in length;
- any development or other activity that will change the character of a site
  - exceeding 5000m² in extent; or
  - involving three or more existing erven or subdivisions thereof; or
  - involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- the rezoning of a site exceeding 10 000m² in extent; or
- any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority.

3.4 EIA GUIDELINE AND INFORMATION DOCUMENT SERIES

The following are the latest guidelines and information Documents that have been consulted:

- Department of Environmental Affairs and Development Planning's (DEA&DP) *Environmental Impact Assessment Guideline and Information Document Series (Dated: March 2013)*:
  - *Guideline on Transitional Arrangements*
  - *Generic Terms of Reference for EAPs and Project Schedules*
  - *Guideline on Alternatives*
  - *Guideline on Public Participation*
  - *Guideline on Exemption Applications*
  - *Guideline on Appeals*
  - *Guideline on Need and Desirability*
- Department of Environmental Affairs and Tourism (DEAT*) Integrated Environmental Management Information Series*

3.5 NATIONAL WATER ACT

Besides the provisions of NEMA for this EIA process, the proposed development will also require authorizations under the National Water Act (Act No. 36 of 1998)(NWA). The Department of Water and Sanitation (DWS), who administer that Act, will be a leading role-player in the EIA. A Water Use Licence Application (WULA) or General Authorisation, in terms of Section 21 (c) and (i) of the NWA may be required, however the level of authorisation will be determined by the specialist. The level of application once determine will run concurrently with the NEMA Application.

3.6 NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT

The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) is part of a suite of legislation falling under NEMA, which includes the Protected Areas Act, the Air Quality Act, the Integrated Coastal Management Act and the Waste Act. Chapter 4 of NEMBA deals with threatened and protected ecosystems and species and related threatened processes and restricted activities. The need to protect listed ecosystems is addressed (*Section 54*).

3.7 THE SPATIAL PLANNING AND LAND USE MANAGEMENT ACT (ACT 16 OF 2013)

The subject area falls under the jurisdiction of the local municipality and the appropriate zoning and subdivision would need to be allocated in order to permit the development of the land for the intended purpose.

3.8 THE CONSERVATION OF AGRICULTURAL RESOURCES ACT (ACT 43 OF 1983)

According to the Department of Environmental Affairs (2015). EIA Guideline for Renewable Energy Projects. Department of Environmental Affairs, Pretoria, South Africa, the mandate of the Conservation and Agricultural Resources Act 1983 (Act No 43 of 1983) (CARA) is to conserve “natural agricultural resources” (the soil, the water sources and the vegetation, excluding weeds and invader plants) through production potential of land, by the combating and prevention of erosion and weakening or destruction of the water sources, and by the protection of the vegetation and the combating of weeds and invader plants.

Section 6 of the Act concerns the control measures which the following may be applicable to IPPs (subsections (2) (f), (g) and (o)):

- the regulating of the flow pattern of run-off water;
- the utilization and protection of the vegetation; and
- the construction, maintenance, alteration or removal of soil conservation works or other structures on land.

4 ALTERNATIVES

Alternatives to the proposed development are limited and have been considered below:

4.1 SITE ALTERNATIVES

The proposed site is the only viable site or location available at this stage and the only one that will be investigated in this application.

4.2 ACTIVITY ALTERNATIVES

There are no feasible activity alternatives assessed. The primary activity is the development of a facility for the generation of renewable energy. Other renewable energy generation facilities include wind and concentrated solar power, none of which are viable on the proposed site.

4.3 DESIGN/TECHNOLOGY ALTERNATIVES

Three different solar photovoltaic (PV) technology alternatives are options for the PV:

- Poly-Crystalline photovoltaic
- Concentrated photovoltaic (CPV)
- Thin film PV

These technologies each have their own advantages and disadvantages, from cost and space efficiency to visual impacts. The various options will be considered and assessed in more detail in the Environmental Impact Report.

4.4 LAYOUT ALTERNATIVES

The proposed property covers an area of 65 hectares, of which approximately 42.7 hectares will be developed. This includes about 39.5 hectares dedicated to the solar photovoltaic (PV) array and remaining hectares allocated for all associated infrastructure. This allows some space to consider various layout alternatives, including with the identified sensitivities and no-go areas excluded from potential development..

The layouts will consider the needs to maximise the output from the facility (maximise the solar array area) and consider the environmental sensitive and “no-go” areas identified by the specialists, either through desktop analysis and/or site investigations. These layouts will be assessed in the Environmental Impact Report.

4.5 NO-GO ALTERNATIVES

This is the option of not developing the proposed solar PV facility.

Although the no-go development might result in no potential negative environmental impacts, the direct and indirect socio-economic benefits of not constructing the PV Solar facility will not be realised. The national and local need for renewable energy will not be realised. The no-go alternative will not result in any removal of vegetation or impacts on biodiversity (flora or faunal) or loss of agricultural land since the development will not take place. However, since the area is used for grazing and other agricultural activities, this does not guarantee that the natural vegetation and ecosystem as a whole will revive or continue to function undisturbed.

The no-go alternative will also result in South Africa’s unsustainable, coal-based electricity supply will not be augmented with renewable energy alternatives.

The potential job opportunities during the construction and operational phases of the development will also not be realised.

Due to the nature of the activity, and the size and location of the site, the socio-economic benefits of the activity for the wider national community are considered to greatly outweigh any environmental benefits of not implementing the activity. The potential negative and/or positive environmental impacts will be fully assessed in the Environmental Impact Report.

5 SITE DESCRIPTION

5.1 LOCATION

The site is located on portion 19 of the farm Klipplaat Drift No. 1009 FS located in the uThukela District Municipality, Kwa-Zulu Natal Province. The proposed site is located off the N3, at the corner of the N3 and Ntabamhlope Rd, approximately 3km south-west of Estcourt.

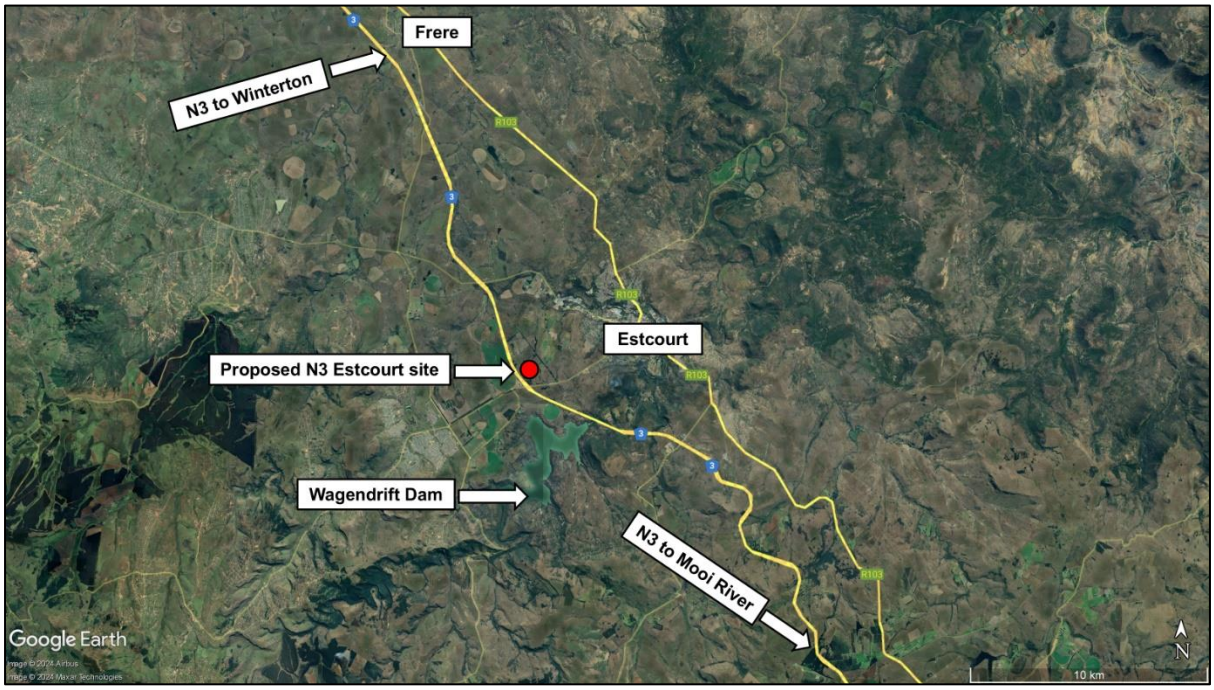


Figure 7: Proposed development site - Locality Map

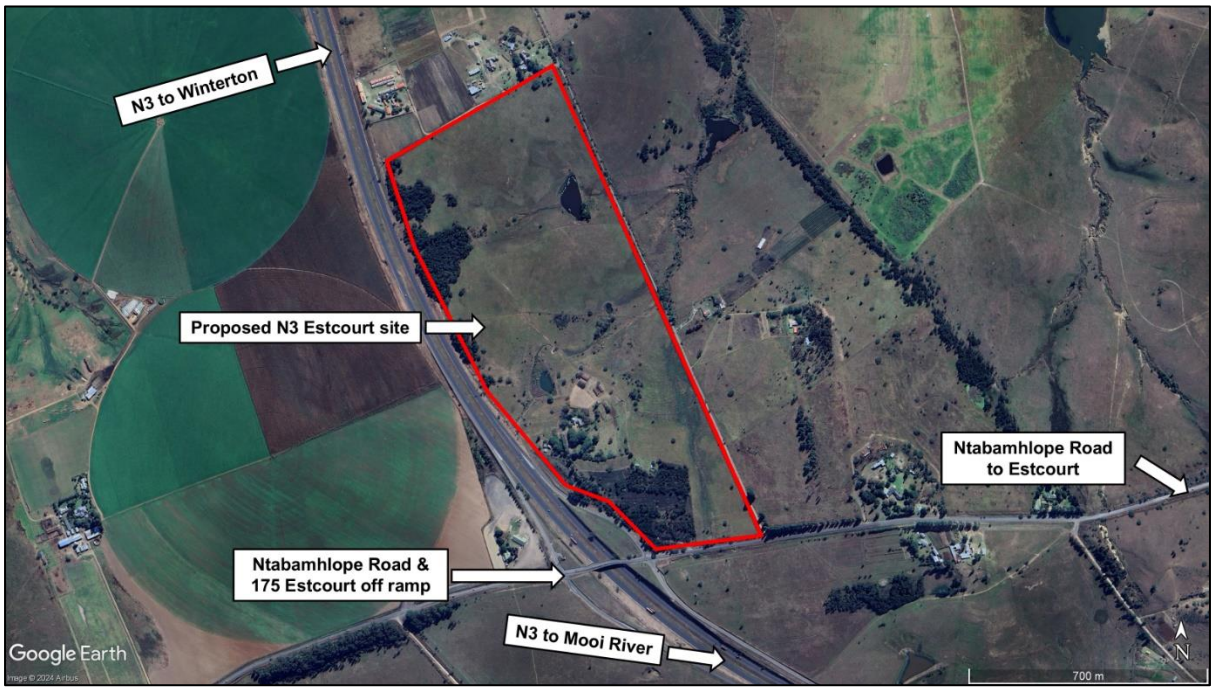


Figure 8: Proposed development site – Development footprint

5.2 DFFE SCREENING TOOL REPORT

5.2.1 Proposed development area - Environmental Sensitivity

The Department of Forest, Fisheries and the Environment (DFFE) National Web based Environmental Screening Tool is a geographically based web-enabled application which allows a proponent / applicant intending to submit an application for environmental authorisation in terms of the Environmental Impact Assessment (EIA) Regulations 2014, as amended to screen their proposed development site for any environmental sensitivity.

The following summary of the proposed development site environmental sensitivities is identified. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed. Each theme is associated with a set of datasets that provide detailed information on the environmental sensitivities related to that theme. The tool uses these datasets to generate a sensitivity rating for each theme at a given location. The DFFE Screening Tool Report for the proposed development is attached as Appendix 1 to this report.

Table 2: Proposed development area - Environmental Sensitivity Results (Screening Tool Results)

Theme	Very High	High	Medium	Low
Agricultural		X		
Animal Species		X		
Aquatic Biodiversity	X			
Archaeological and Cultural Heritage				X
Avian	X			
Civil Aviation (Solar PV)				X
Defence				X
Landscape (Solar)	X			
Palaeontology	X			
Plant Species			X	
RFI[5]			X	
Terrestrial Biodiversity				X

[5] Radio Frequency Interference

5.2.2 Site Sensitivity Verification

The following section is from the Site Sensitivity Verification (SSV) report. An SSV report was undertaken in terms of the *Protocols for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes* (Protocols) as per Government Notice No. 320 (published in Government Gazette No. 43110 on 20 March 2020)[6].

These Protocols, effected as on 09 May 2020, must be complied with for every new application for Environmental Authorisation (EA) submitted after the effective date. According to the Protocols, the Environmental Assessment Practitioner (EAP) must verify the current use and environmental sensitivities of the site in relation to the proposed development, in accordance with the DFFE Screening Tool report results, to determine the need for specialist assessments for the identified environmental sensitivity themes.

This verification is done through a combination of desktop studies and onsite investigations by the EAP and/or specialists. Through these studies and investigations they evaluate the environmental themes and supposed sensitivity rating associated with the proposed development in order to verify whether the DFFE Screening Tool report results are a true representation of the situation on the ground. The aim of an SSV report is to:

- Verify land use and environmental theme sensitivities as identified by the DFFE Screening Tool report
- Confirm or motivate against the need for a particular specialist assessment(s) as indicated by the DFFE Screening Tool report; and
- Should the need for a specialist assessment be refuted / challenged, provide a motivation as to why the particular specialist assessment is not applicable to the proposed development.

The following table provides an overview of sensitivity ratings for various environmental themes at the proposed development site, as determined by the DFFE. Each theme's proposed sensitivity rating reflects the agreement or disagreement of the EAP and/or specialist based on their site sensitivity verification. The proposed sensitivity rating is motivated accordingly, discussing the need for further specialist assessment as part of the EIA process.

Table 3: Environmental themes sensitivity (DFFE & Proposed) and motivation for specialist assessment

Theme	DFFE Sensitivity	Agree / Disagree	Proposed Sensitivity	Motivation & Need for Specialist Assessment
Agriculture	High	Disagree ↓	Medium	DFFE sensitivity is rated high due to the moderate-high land capability and the supposed crop cultivation that takes place. However, the previously cultivated land is overgrown with wattle trees in places suggesting no recent cultivation. The predominant Katspruit soil associated with the site is also unsuitable for cultivation in general resulting in a proposed medium sensitivity. Nonetheless, an initial Agricultural Compliance Statement has been undertaken and the preliminary

[6] The Protocols are in line with Section 24(5)(a) and (h) and Section 44 of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998).

Theme	DFFE Sensitivity	Agree / Disagree	Proposed Sensitivity	Motivation & Need for Specialist Assessment
				findings is included in this report, but will be finalised during the EIA phase.
Animal Species	High	Agree	High	Sensitivity is high due to the potential sensitive species recorded for the site by SANBI. The presence of several highly sensitive bird species including the wattled crane, southern bald ibis and secretary bird is also associated with the site. An initial Terrestrial Biodiversity Assessment has been undertaken and the preliminary findings is included in this report, but will be finalised during the EIA phase.
Aquatic Biodiversity	Very High	Agree	Medium to High	Sensitivity is very high due to the site being associated with a FEPA-subcatchment. There are no significant freshwater resources found on the site but there is a drainage line that runs t to the east of the site. The only areas with a medium to high sensitivity are the wetland-esque and drainage areas that should and could be avoided at this site. The proposed development footprint does not impose on the 32m buffer. An initial Freshwater Impact Assessment has been undertaken and the preliminary findings is included in this report, but will be finalised during the EIA phase.
Archaeology and Cultural Heritage	Low	Disagree ↑	Low	DFFE sensitivity is rated low. There are no heritage sites in this section as it is a crop field. An initial Archaeological Impact Assessment has been undertaken regardless of the low sensitivity. The preliminary findings are included in this report, but will be finalised during the EIA phase. A Notice of Intent to Develop (NID) will also be submitted to the Heritage Authority.
Avian	Very High	Agree	Very High	DFFE sensitivity is rated very high due to the potential occurrence of several endangered and vulnerable bird species including the grey crowned crane, southern bald ibis and secretary bird that are associated with the area. A known cape vulture restaurant is within 20 km of the site. An initial Avifaunal Impact Assessment has been undertaken and the preliminary findings are included in this report, but will be finalised during the EIA phase.
Civil Aviation (Solar PV)	Low	Agree	Low	No major or other types of civil aviation aerodromes are within the immediate site area and thus will not pose any threat to civil aviation.

Theme	DFFE Sensitivity	Agree / Disagree	Proposed Sensitivity	Motivation & Need for Specialist Assessment
Defence	Low	Agree	Low	Due to the nature of the proposed development, it is not envisaged that it will impact any defence-related activities.
Landscape (Solar)	Very High	Disagree ↓	High	DFFE sensitivity is rated very high due to specific features of the landscape, including slopes between 1:4 and 1:10, the site's proximity to nature reserves within 1.5km, and its location within 500m to 1000m of a town or village (Estcourt & Wembesi). These factors indicate significant landscape sensitivities that could potentially be affected by a solar PV development. However, the presence of existing homesteads, farms, and the N3 highway may reduce the visual impact of the proposed solar PV installations. Consequently, the site has been assigned a high rating based on these findings. An initial Visual Impact Assessment has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase.
Palaeontology	Very High	Disagree ↓	High	DFFE sensitivity rating is very high due to the likelihood of finding significant fossils within the geologic unit associated with the study area. However, the infrastructure associated with the proposed development will have a minimal impact, if any, on the fossiliferous geologic unit associated with the study area, resulting in a proposed high sensitivity instead. Nevertheless, an initial Palaeontological Impact Assessment has been undertaken and the preliminary findings is included in this report, but will be finalised during the EIA phase. A Fossil Chance Find Protocol will be included and should the foundation work of the development be deeper than 2m then a palaeontological field visit will be required during the construction phase. A Notice of Intent to Develop (NID) will also be submitted to the Heritage Authority.
Plant Species	Medium	Agree	Medium	The study area features KwaZulu-Natal Highland Thornveld vegetation type, which can be considered indigenous to the natural sections of the study area. The sensitivity associated with this vegetation type is considered a medium sensitivity, as its Ecosystem Threat Status is classified as Least Concern. However, SANBI has recorded potential sensitive species that are associated with the study area and therefore may be present.

Theme	DFFE Sensitivity	Agree / Disagree	Proposed Sensitivity	Motivation & Need for Specialist Assessment
				An initial Terrestrial Biodiversity Assessment has been undertaken and the preliminary findings is included in this report, but will be finalised during the EIA phase.
RFI	Medium	Agree	Medium	Sensitivity is medium due to the site being within 5km of a Sentech High Power Terrestrial Broadcasting Facility. Also, the site between 14km and 32km of a SKA (Square Kilometre Array) receptor. No RFI assessment will be conducted.
Terrestrial Biodiversity	Low	Agree	Low	Sensitivity is low due to the site not being situated in an Ecological Support Area (ESA) or Critical Biodiversity Area (CBA). Nevertheless, an initial Freshwater Impact Assessment and initial Terrestrial Biodiversity Assessment has been undertaken and the preliminary findings is included in this report, but will be finalised during the EIA phase.

5.3 CLIMATE

According to South African National Biodiversity Institute (SANBI), the climatic conditions associated with the proposed site location are characteristic of a summer-rainfall region, with a mean annual precipitation (MAP) of 750 mm (much of which falls in the form of thunderstorms). Mist is uncommon (14 days of mist per year for both Ladysmith and Estcourt). Mean annual temperature (MAT) 15.6–19.0°C (overall average 16.5°C). Summers are warm to hot, winters are cool. There are 15 frost days per year.

Simulated historical climate & weather data was obtained from meteoblue.com for the town closest to the proposed site – i.e. Estcourt. The Meteoblue climate diagrams indicated below are based on 30 years of hourly weather model simulations. They give good indications of typical climate patterns and expected conditions (temperature, precipitation, sunshine and wind). The simulated weather data have a spatial resolution of approximately 30 km and may not reproduce all local weather effects, such as thunderstorms, local winds etc, and local differences as they occur in urban, mountainous, or coastal areas.

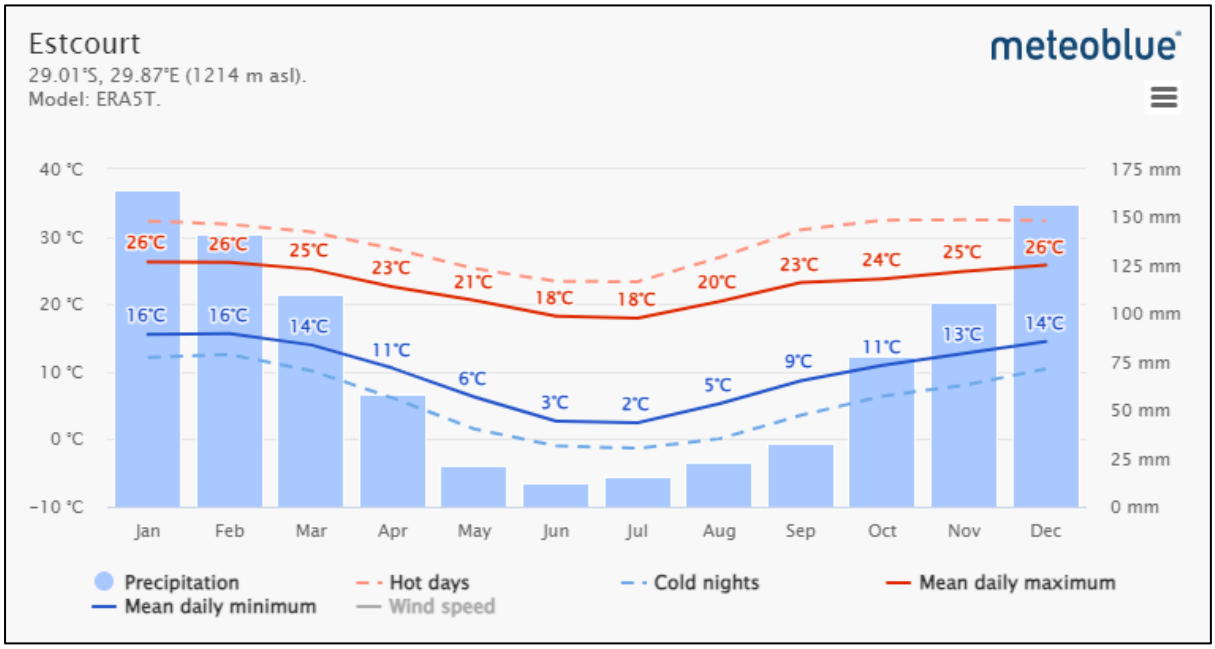


Figure 9: Meteoblue[7] - Simulated historical climate & weather data for the Estcourt area

The general area is also ideally suited for a solar PV facility due to the relatively high irradiation levels. The Global Horizontal Irradiation (GHI) average for the area is 1850.2 kWh/m^2 according to the Global Solar Atlas (Figure 11)[8]. According to the Global Weather Corp, Global horizontal irradiance (GHI) is a measurement of the total solar electromagnetic radiation above a horizontal surface at a given location and time. It is the most useful metric for predicting solar panel output. It accounts for 71.6% of PV performance variations. Refer to Figure 6.

[7] https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/estcourt_south-africa_1004962
[8] https://globalsolaratlas.info/map

5.4 LANDSCAPE / VISUAL

An initial Visual Impact Assessment (VIA) has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase.

The aim of a VIA is not to predict whether individual receptors will find the development attractive or not. Instead, the aim is to identify important visual characteristics of the surrounding landscape, especially the features and characteristics that contribute to scenic quality, as the basis for determining how and to what degree the development project will affect those scenic values.

The landscape / visual sensitivity is rated very high due to specific features of the landscape, including slopes between 1:4 and 1:10, the site's proximity to nature reserves within 1.5km, and its location within 500m to 1000m of a town or village (Estcourt & Wembesi). These factors indicate significant landscape sensitivities that could potentially be affected by a solar PV development.

The site is characterised by diverse landscapes, including grasslands and agricultural lands, which contribute to a visually appealing and unique setting. However, the site visit also revealed that the proposed development site is located in an area with existing homesteads, farms, and the N3 highway. These man-made elements could potentially reduce the visual impact of the proposed solar PV installations, suggesting the actual visual impact of the project may be mitigated by the existing land uses and features. Therefore, a rating of high was assigned to the site based on the site visit findings.

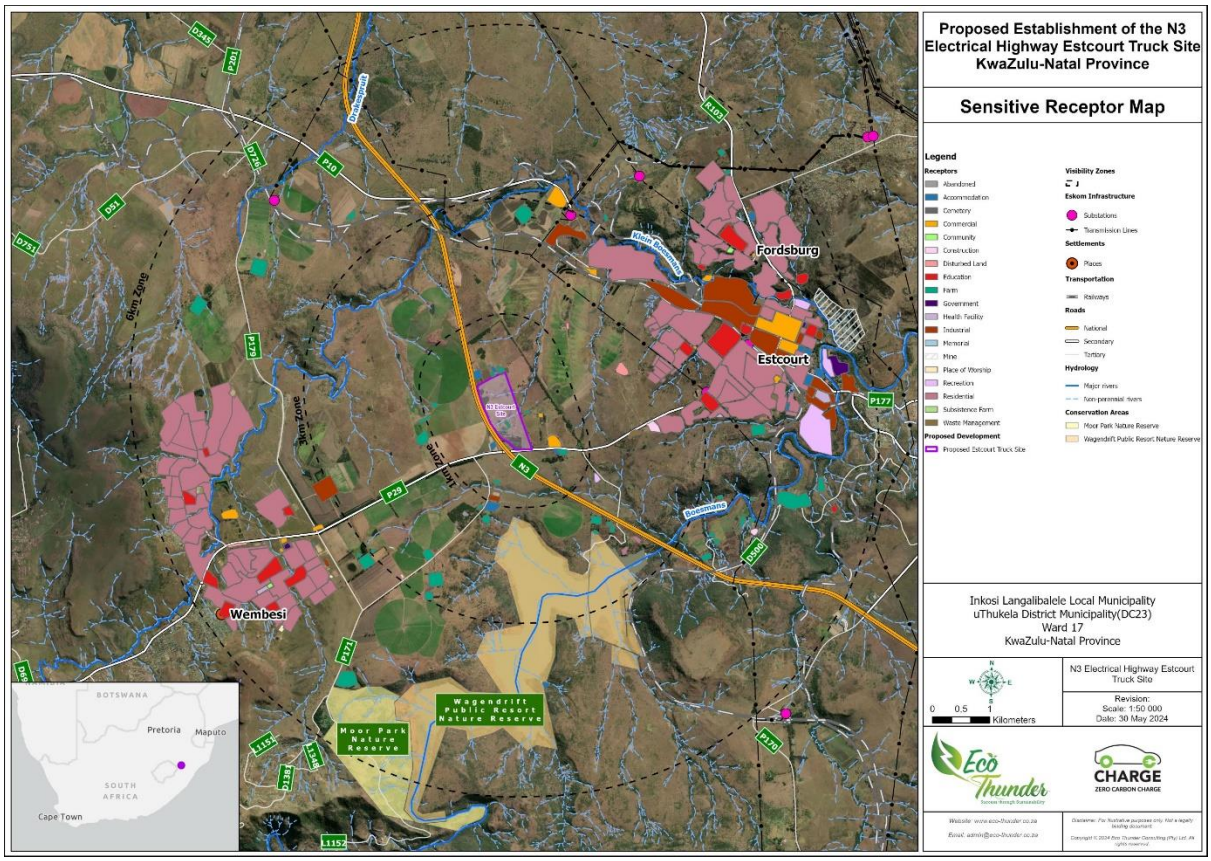


Figure 10: Preliminary sensitive receptor map

5.4.1 Visual Absorption Capacity (VAC)

A landscape's ability to absorb visual changes from a development while maintaining visual integrity is referred to as it's Visual Absorption Capacity (VAC). For the proposed Estcourt Recharging Station, the VAC rating has been determined to be medium. This rating is based on biophysical and perceptual factors

Biophysical Factors

- Slope: The site has varying slopes, with some areas exhibiting significant gradients. Steeper slopes have lower VAC due to their visual prominence, but the overall variation results in a balanced impact. The presence of slopes between 1:4 and 1:10 contributes to the landscape's sensitivity.

- Vegetative Pattern and Screening: The natural grasslands and scattered trees provide moderate vegetative screening. Enhancing this vegetation through additional planting can improve the site's VAC. The site's proximity to nature reserves, such as the Wagendrift Public Resort Nature Reserve, also impacts its VAC by providing a natural buffer.

- Site Recoverability: The grasslands of KwaZulu-Natal demonstrate moderate to high recoverability, supporting a higher VAC as the vegetation can quickly reestablish after disturbances. This recoverability is crucial in maintaining the visual integrity post-construction.

- Soil Colour Contrast: The soils in the area are consistent with the surrounding grasslands, suggesting moderate VAC due to less visual contrast. This consistency helps the development blend more seamlessly into the existing landscape.

Perceptual Factors

- Distance and Viewing Angles: The N3 highway provides mid to long-range views, which increases the landscape's ability to absorb visual changes over distance. The varying viewing angles from the highway and nearby roads also play a role in the overall visual impact.

- Viewer Sensitivity: Frequent travellers on the N3 and local residents are accustomed to the natural landscape, making them highly sensitive to visual changes. Careful design integration is necessary to mitigate this sensitivity. The presence of nearby homesteads and farms increases the importance of maintaining visual harmony.

- Visual Magnitude: High visual magnitude due to proximity and slope requires strategic mitigation to maintain VAC. The development's visibility from key vantage points, including nearby roads and settlements, must be carefully managed.

The VAC for the area is rated medium due to a combination of factors. The natural vegetation provides moderate screening, and the site's recoverability is high, both of which contribute positively to VAC.

However, the visual sensitivity of viewers and the potential visual magnitude due to the proximity of the N3 highway present challenges that must be carefully managed. By implementing strategic design and planning measures, the development can blend harmoniously with the landscape, maintaining its visual integrity and ecological value.

5.5 BIODIVERSITY

An initial Terrestrial Biodiversity Assessment has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase.

A Terrestrial Biodiversity Assessment aims to understand the terrestrial ecology and evaluate the potential impacts of the proposed development on site. It identifies and assess biodiversity aspects (fauna and flora and terrestrial ecosystems) associated with the proposed development area and the environmental interactions it imposes.

A Screening Tool Report was generated (see Section 5.2) and classified the proposed development area's biodiversity sensitivities as the following:

- **Plant species (medium sensitivity)**
- **Animal species (high sensitivity)**
- **Terrestrial biodiversity (very high sensitivity)**

5.5.1 Vegetation

The Estcourt study area is located within the Grassland Biome, within the Sub-Escarpment Grassland Bioregion (Rutherford and Westfall, 1994). The site falls within the **KwaZulu-Natal Highland Thornveld** vegetation type (Mucina and Rutherford, 2006; SANBI, 2018) (Figure 5), which is currently listed as a **Least Concern** ecosystem at a national level (SANBI, 2021; DFFE, 2022). KwaZulu-Natal Highland Thornveld vegetation is endemic to South Africa and occurs in a series of patches in the central-northern regions of KwaZulu-Natal, where it occurs in dry valleys and on moist upland. It is characterised by hilly, undulating landscapes, with broad valleys supporting tall tussock grassland usually dominated by *Hyparrhenia hirta*, with occasional savannoid woodlands with scattered *Vachellia sieberiana var. woodii*, *V. karroo*, and V. *nilotica* (Mucina and Rutherford, 2006).

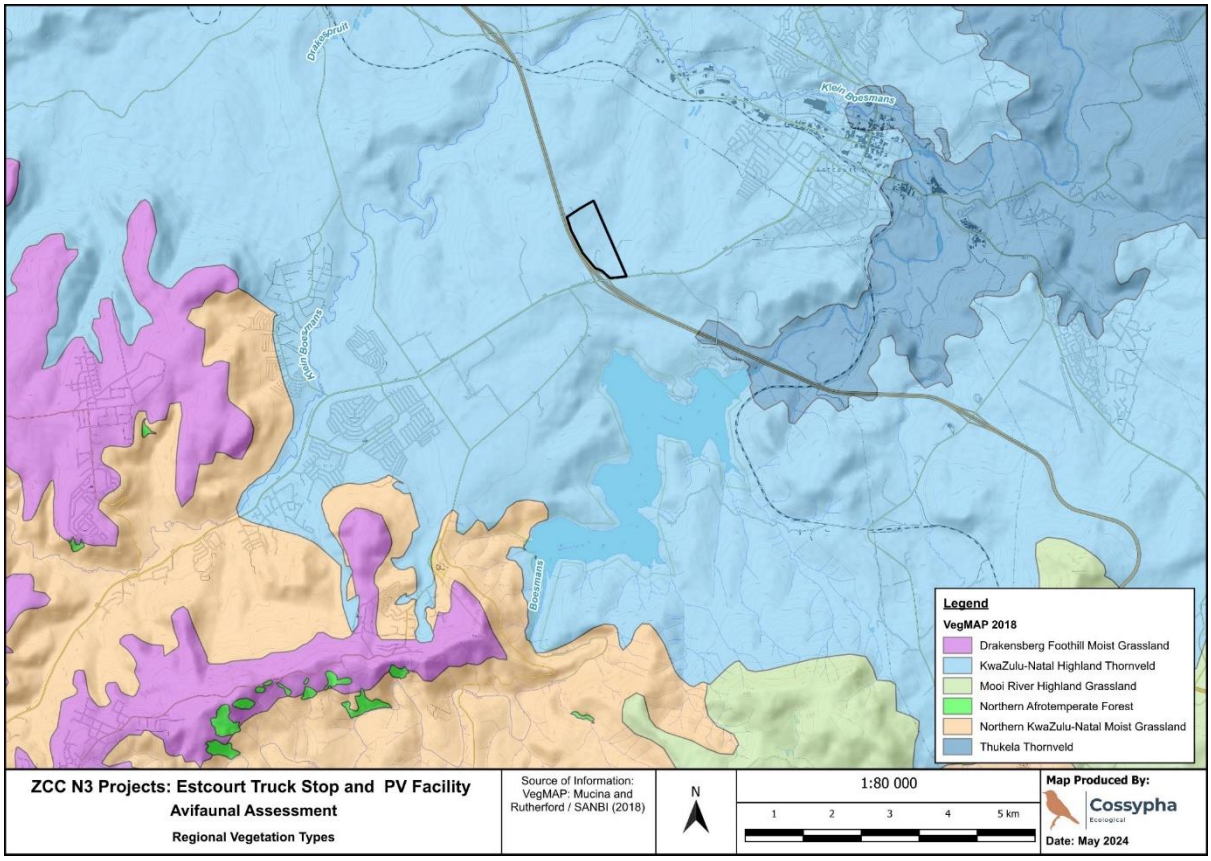


Figure 11: The study area in relation to regional vegetation types

5.5.2 Kwazulu-Natal Biodiversity Sector Plan

Ezemvelo KZN Wildlife (EKZNW) developed the KwaZulu-Natal Systematic Conservation Plan (KZN SCP; Jewitt, 2011), which was subsequently replaced by the KwaZulu-Natal Biodiversity Sector Plan (KZN BSP) to guide the long–term conservation of biodiversity in the province (Escott et al., 2016).

The GIS layer lists land areas containing high biodiversity using irreplaceability measures. An irreplaceability measure quantifies the contribution of a particular site to achieve representation biodiversity targets (Ferrier et al., 2000). The KZN BSP provides a spatial representation of areas required to ensure the persistence and conservation of biodiversity within KZN, reflected as Critical Biodiversity Areas (CBA) and Ecological Support Areas (ESA). The Plan has been produced as a tool for: (i) guiding protected area expansion priority areas and identification of stewardship sites and (ii) informing sectors strategic spatial planning processes with the intention of ensuring more sustainable development in KZN. According to the KZN BSP, the site does not fall within any CBA or ESA.

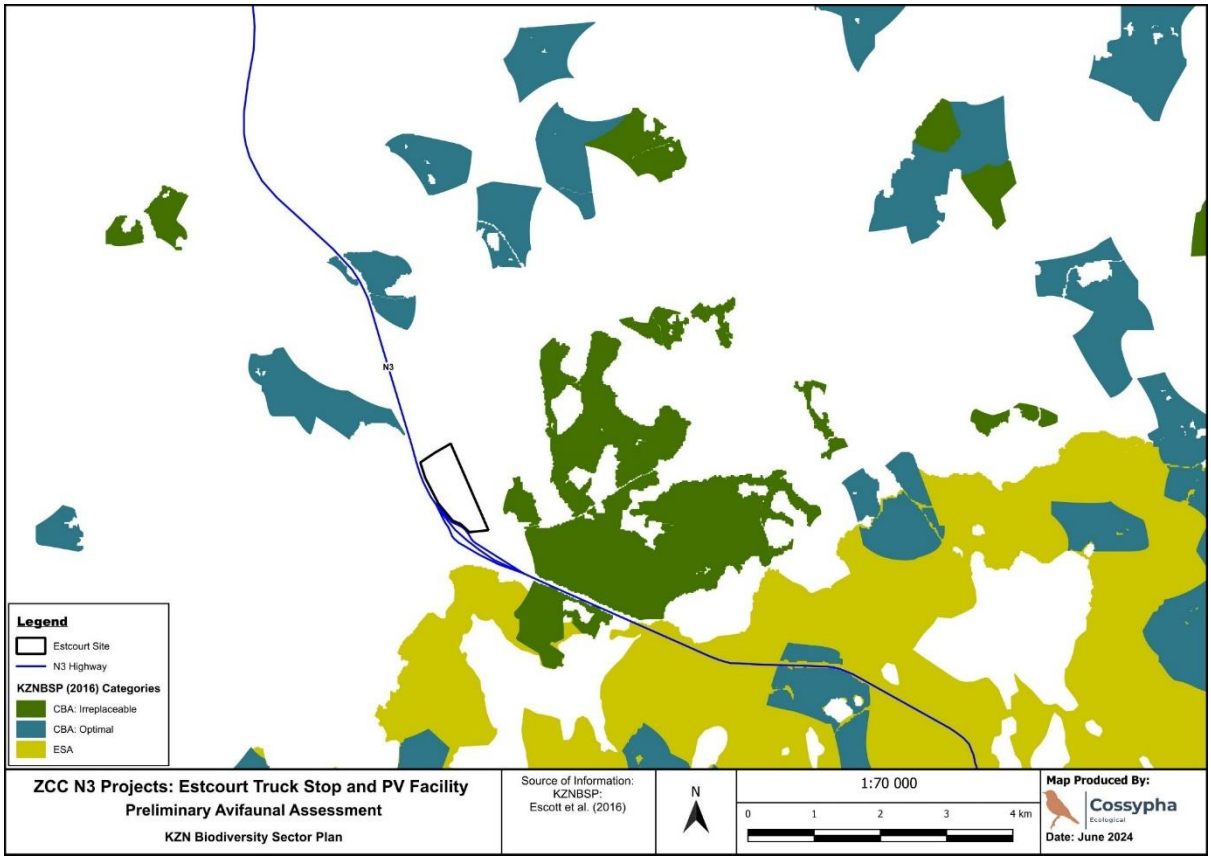


Figure 12: The study area in relation to the KZNBSP indicating that the site does not fall within a CBA

5.6 AVIFAUNA

A preliminary Avifaunal and Animal Assessment has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase.

A Screening Tool Report was generated (see Section 5.2) **and classified the proposed development area's avifaunal sensitivity theme as a high** due to the potential occurrence of several endangered and vulnerable bird species including the grey crowned crane, southern bald ibis and secretary bird that are associated with the area. A known cape vulture restaurant is within 20 km of the site. A vulture restaurant is an undisturbed area where non-toxic, poison-free meat and carcasses are provided for vultures and other scavengers

5.6.1 Distribution of avifauna in the study area

The region displays moderate avifaunal diversity with around 378 bird species known to occur within the QDGC (2929BB) that the study area falls within, according to the distribution maps in Roberts VII Multimedia Birds of Southern Africa (SA Birding, 2011; 2024). The Southern African Bird Atlas Project (SABAP2) has been collecting data since 2007 and includes data from the previous SABAP1 (1987-1991). SABAP2 aims to map the distribution and relative abundance of birds in southern Africa. SABAP2 data is recorded per pentad (a 5' x 5' coordinate spatial grid reference and a subset of the QDGC – one QDGC comprises of nine pentads. 5' x 5' = roughly 8 x 9 km) and therefore represents a more focussed search. Reporting rates are expressed as a percentage of the number of times a species was seen in a pentad divided by the number of times the pentad was surveyed. According to SABAP2 data, 205 species have been recorded in the pentad in which the study area falls (pentad 2900_2945) and the adjacent pentad (2900_2950) combined.

Priority species in terms of sensitivity to solar PV energy development impacts include any Red List species of conservation concern (SCC) and range-restricted species, small passerines that congregate in large numbers, and large-bodied species such as waterfowl, herons, gamebirds, and raptors (including owls and vultures) (Jenkins et al., 2017). The Southern Bald Ibis, Cape Vulture, African Marsh Harrier, Blue Crane and Secretary bird are some of the priority species that have been recorded within the pentads in which the site falls, as well as the SABAP2 reporting rate. The higher the reporting rate, the higher the likelihood of the species occurring in the study area if suitable habitat exists.

5.6.2 Key habitats and preliminary sensitivity

The natural grassland and thornveld vegetation in the broader surrounding areas would be the most important habitat for birds and other fauna in the region, with key habitat features such as river systems, wetlands, and rocky koppies adding habitat heterogeneity and offering specialised habitats. Other important habitat features occurring in the surrounding landscape include farm dams.

These habitats likely support the bird species found in the region, including priority species such as gamebirds, waterfowl, raptors, and gregarious passerines. Where this vegetation is relatively undisturbed, it represents the most important habitat for fauna in the area as it is an intact and functional ecosystem that supports a diversity of fauna representing all trophic levels. Cultivated fields and fallow fields are also considered to be important for birds, however, are not considered sensitive from a habitat perspective. The study area is situated within farmland and comprises mostly of natural to near-natural grassland that has been disturbed by mowing on a regular basis. Two small farm dams situated on natural watercourses occur in the central and northern sections of the site, and a small wetland that drains in a northerly direction occurs in the south-eastern section of the site. A farmstead with farmhouse and other buildings occurs in the southern section of the site. The western boundary of the site borders the N3 highway and is infested with alien Black Wattle *Acacia mearnsii* trees. The section to the south of the farmstead and on either side of the access road is also infested with alien vegetation.

The areas surrounding the farmstead have been modified by farming practices. Key habitat for birds within the study area includes the natural watercourses and farm dams, and the wetland in the south-eastern corner of the site. The majority of the study area is comprised of natural to near-natural grassland that has been disturbed by grazing activities, regular mowing, as well as the proximity to the N3 highway, and is of medium sensitivity. Key habitat such as the natural watercourses, wetlands, and farm dams on the site are considered high and medium-high sensitivity. The areas disturbed by past farming activities and areas infested with alien vegetation are considered of low sensitivity, while the farm buildings and infrastructure are considered very low. Refer to table below for a summary of site sensitivities with recommendations and for a map displaying site sensitivity from a terrestrial faunal perspective.

Table 4: Summary of sensitivity categories with recommendations for the study area

Site Feature	Description and Recommendation	Sensitivity Rating
Watercourses, wetlands, and dams	The small farm dams and associated wetlands and watercourses provide important habitat for fauna, especially birds, and are usually areas of high biodiversity. These features on the site are highly sensitive at a local level. **Recommendations:** • The watercourses / drainage lines, wetlands, and dams should be avoided by the development by the buffers specified by the wetland / aquatic specialist. • To remove these features would mean a local loss of important wetland habitat. A wetland offset would be required if removed, with would need to be investigated by the wetland specialist in consultation with the conservation authorities.	**High**
Disturbed wetland	Although disturbed by surrounding farming activities, the wetland provides habitat for fauna, and is therefore of moderately high sensitivity. **Recommendations:** • The wetland should be avoided by the development by the buffers specified by the wetland specialist. • To remove this feature would mean a local loss of important wetland habitat. A wetland offset would be required if removed, with would need to be investigated by the wetland specialist in consultation with the conservation authorities.	**Medium-high**
Disturbed natural / Near-natural Grassland	Although disturbed by regular mowing, the grassland is natural and provides the main habitat for the fauna found in the area. **Recommendations:** • Avoid as far as possible – minimise impacts. If unavoidable, strict mitigation and restoration required	**Medium**
Modified habitat / Disturbed Grassland	Areas of natural grassland that have been disturbed in the past and now infested with alien vegetation are of low sensitivity. **Recommendations:** • These areas do not need to be avoided by the development, but standard mitigation measures and best practice environmental management will apply	**Low**
Modified – Farm buildings, farmhouse, access road	Areas that have been modified by buildings and farming practices have little to no natural vegetation and are not considered sensitive. **Recommendations:** • There is no limit to development in these areas.	**Very Low**

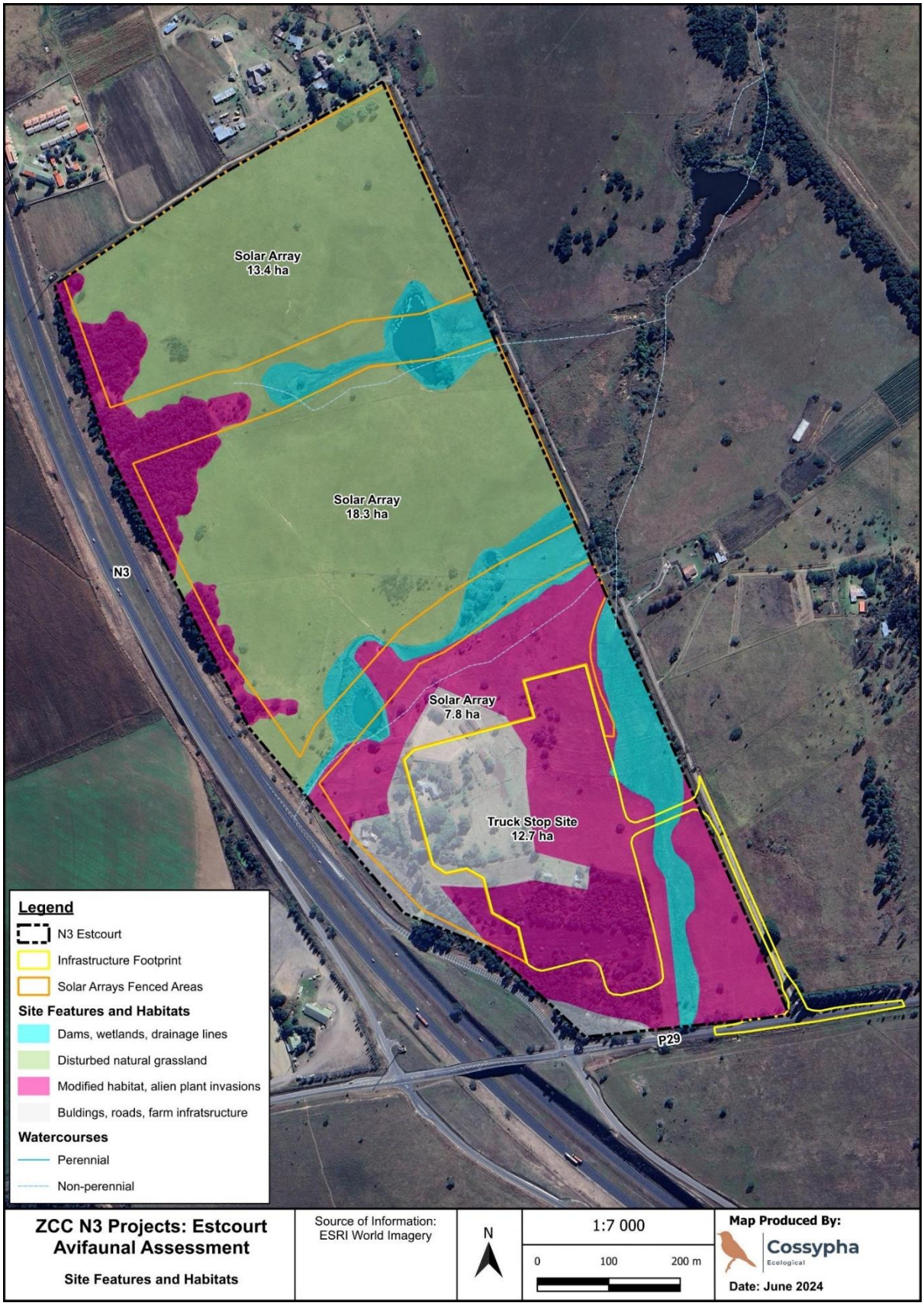


Figure 13: Site features and habitats with the proposed development layout

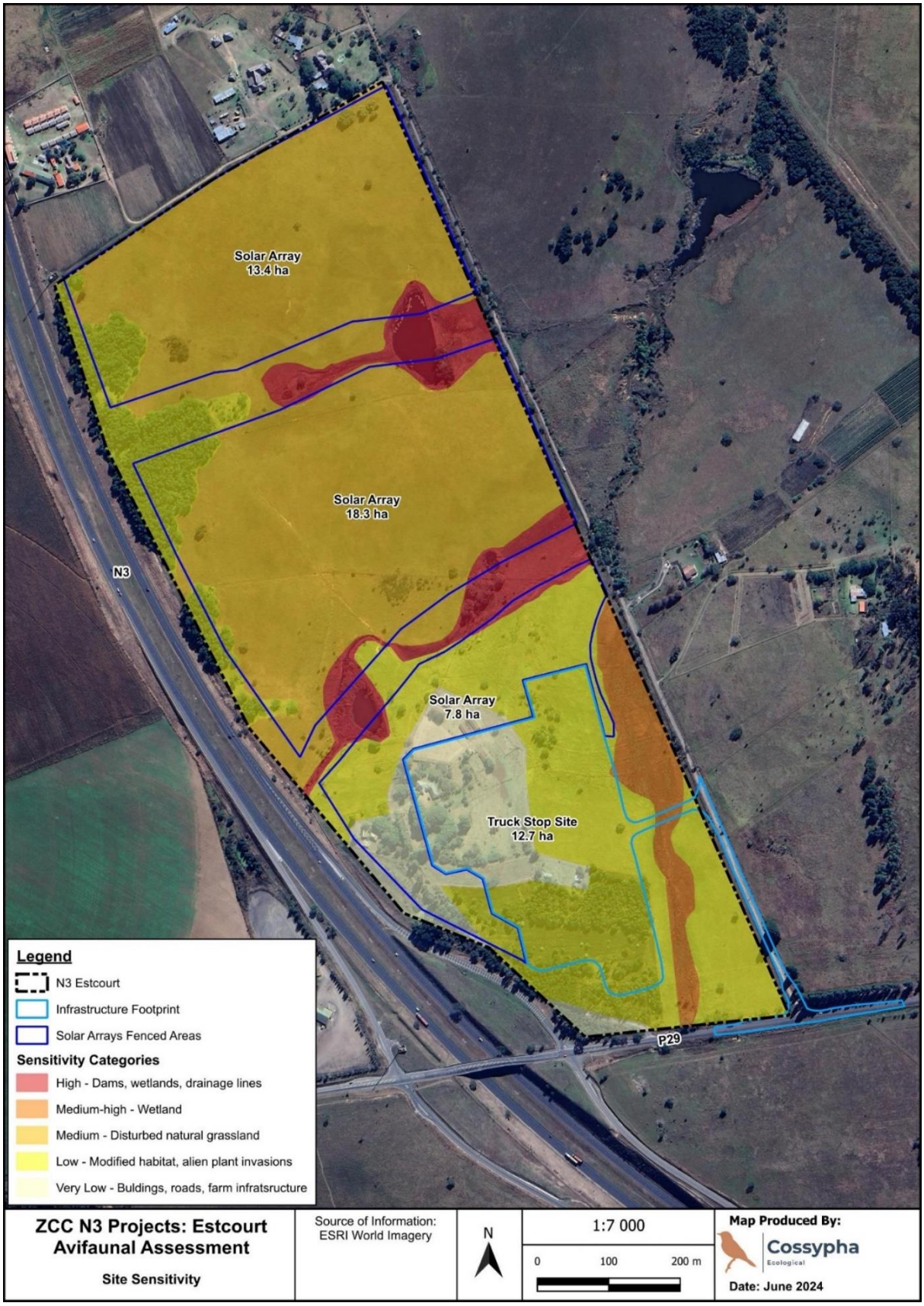


Figure 14: Habitat sensitivity with the proposed development layout

5.6.3 Protected areas and Important Bird Areas

According to the latest updates of the South African Protected Areas Database (SAPAD) and South African Conservation Areas Database (SACAD) (DEA, 2024a; 2024b), the site does not fall within any Protected Areas or IBAs (Marnewick et al., 2015). The nearest Protected Area is the Wagendrift Public Resort Nature Reserve (NR) situated approximately 1.2 km to the south of the site.

The site also does not fall within any National Protected Area Expansion Strategy (NPAES) Priority Focus Areas, however such areas, which are associated with the natural vegetation and valleys of the uThukela catchment, occur in proximity to the site to the east and south.

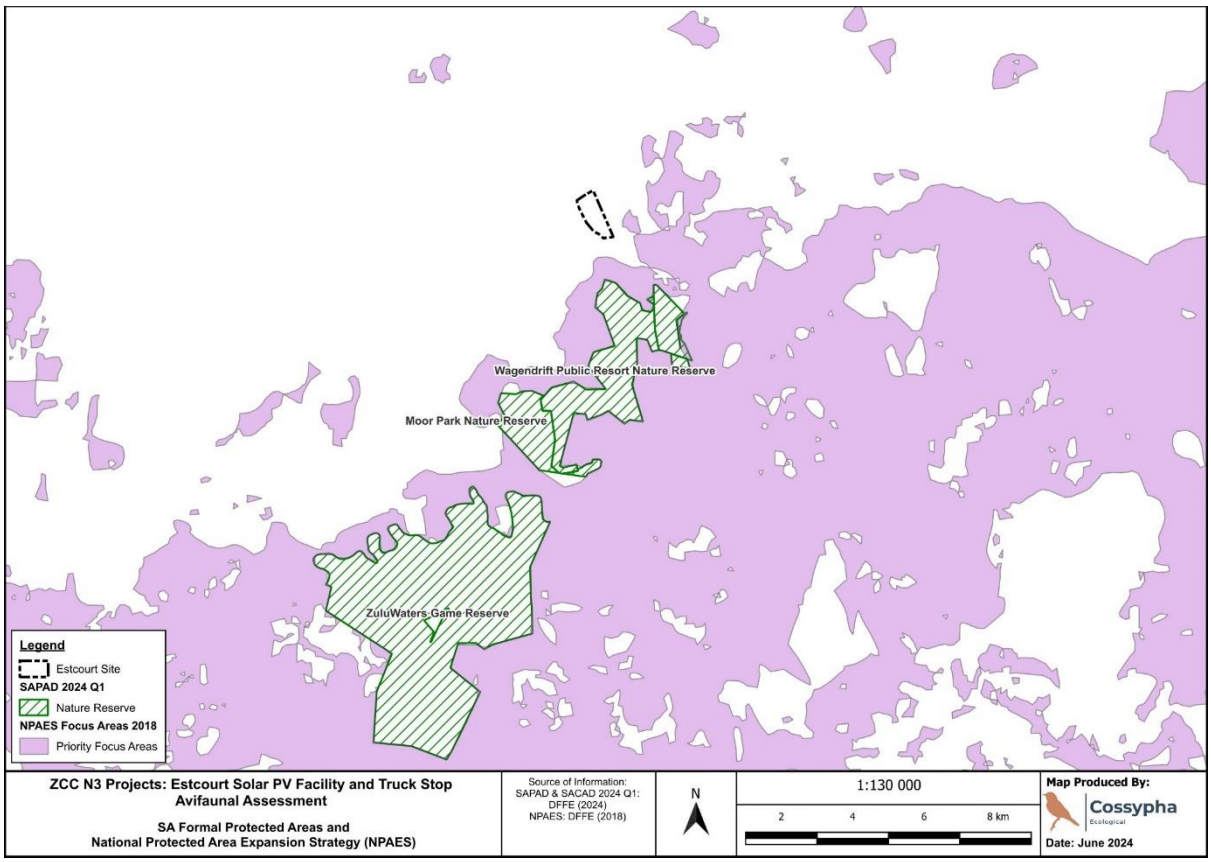


Figure 15: The study area in relation to national Protected Areas

5.7 FRESHWATER

An initial Freshwater Assessment has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase.

A Freshwater report serves to evaluate the potential impacts of proposed development on freshwater resources such as watercourses and wetlands. It assesses factors like water quality, quantity, and ecosystem health to inform decision-making and mitigate adverse effects on these ecosystems.

A Screening Tool Report was generated (see Section 5.2) **and classified the proposed development area's aquatic biodiversity sensitivity as a very high sensitivity.**

Sensitivity is very high due to the site's association with National Freshwater Environmental Protected Areas (NFEPA), in particular seep wetlands. A combination of seep wetlands and artificial wetlands (likely as a consequence of farm dams) are present on the site. The seep wetlands are classified under the Sub-Escarpment Grassland Bioregion.

The drainage lines identified on site (Figure 16) are as classified as the NFEPA seep wetlands. The drainage lines and the two farm dams on the property are indicated with the 32m controlled zones as per the NEMA EIA regulations' watercourse development threshold.

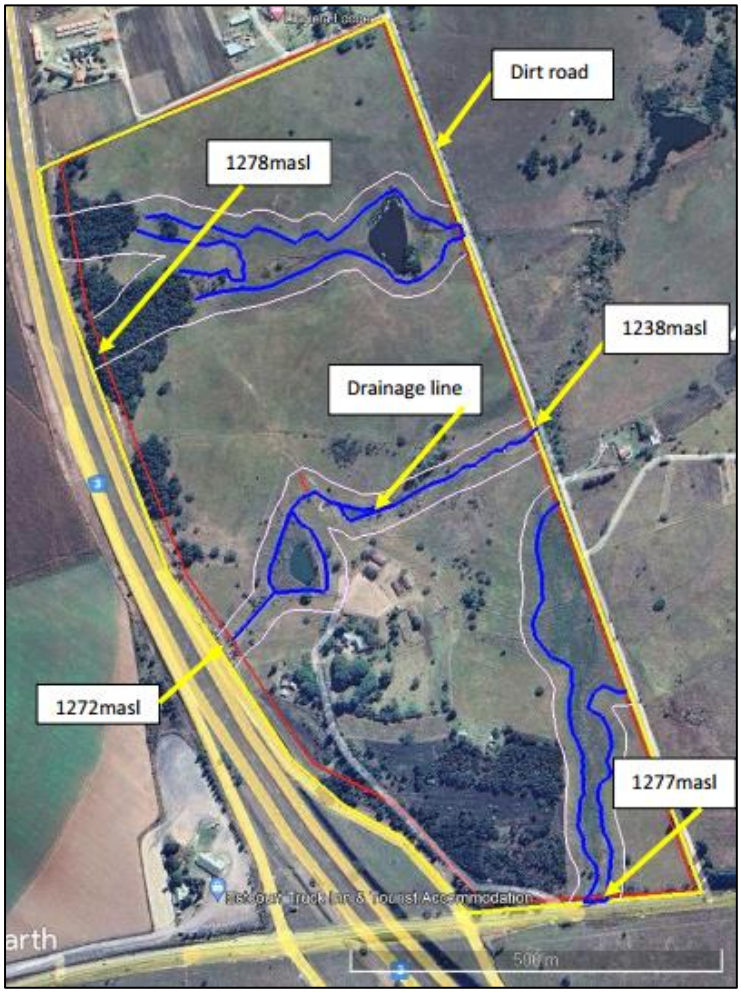


Figure 16: Drainage lines with 32m buffers

Northern Drainage Line: Presumably this drainage line starts at the N3 embankment, though it is heavily overgrown with black wattle. It receives agricultural runoff from the pivots and the N3. It feeds into a farm dam near a gravel road and eventually flows to meet the Klein Boesmans River.

Middle Drainage Line: This drainage line starts at a large culvert under the N3 highway, originating from runoff primarily from Ntabamhlope Road and possibly the N3 interchange. It feeds into a farm dam and then splits to feed a smaller dam, with a swampy area below. It continues under a gravel road through pipe culverts.

Southern Drainage Line: This drainage line begins at a pipe culvert under Ntabamhlope Road, with an unnatural water flow due to a burst pipe. A temporary artificial wetland has formed downstream, featuring wetland indicator plants. The lower end is trampled by grazing cattle and lacks a defined channel. Evidently, this flow is not natural. Hence, this wetland and flowing drainage line would probably disappear if the pipe were repaired.

The drainage line flows to the north to meet up with the Klein Boesmans River that in turns meets up with the Boesmans River to the west of Estcourt. The Boesmans River flows to the north into the Tugela River that ends far to the east in the Indian Ocean. The Klein Boesmans and Boesmans Rivers are heavily impacted by urban and industrial development in and around Estcourt.

Figure 17: Drainage lines

5.7.1 Present Ecological State (PES)

The middle and the northern drainage line have much in common. They are both straightened, landscaped, manicured and engineered, with farm dams and grazed by a large herd of cattle. It therefore makes sense to lump them together for the purpose of the PES assessment.

The middle and norther drainage lines combined was assigned a Class D, which is modified with a loss in ecological functioning. The southern drainage line was assessed as a Class C, which is less modified than the other drainage lines and with not as much loss in ecological functioning. The first impression is that this is still viable aquatic habitat, especially the wetland part. However, once the leaky pipe is repaired and the flow of water stemmed, this aquatic habitat may disappear altogether.

Table 5: Present Ecological State - Class

Drainage line	Instream	Riparian
Northern & middle	D	D
Southern	C	C

Table 6: Category's assigned to the scores for wetland habitat assessment

Category	Description	Score	% of maximum score
A	Unmodified or approximated natural condition.	>4	90-100
B	Largely natural with few modifications, but with some loss of natural habitats.	>4 and ≤3	80-89
C	Moderately modified, but with some loss of natural habitats.	>2 and ≤3	60-79
D	Largely modified with a large loss of natural habitat and ecosystem function.	2	40-59
E	Seriously modified with extensive loss of habitat and ecosystem function.	>0 and ≤2	20-39
F	Critically modified with a near-complete loss of natural habitat.	0	0-19

5.7.2 Ecological Importance & Sensitivity

Indicator	Description	Applicability to the development
Ecological Importance (EI)	EI is based on the presence of especially fish species that are endangered on a local, regional or national level. There are no fish in the drainage lines, as there is no permanent water. If there are any fish in the farm dams, they were most likely exotic fish such as carp. The fish indicator is not the only one of ecological importance. The drainage lines are in vulnerable grassland with some endangered plant species that deserve protection.	Not important

Indicator	Description	Applicability to the development
Ecological Sensitivity (ES)	ES is often described as the ability of aquatic habitat to assimilate impacts. It is not sensitive if it remains the same despite of the onslaught of impacts. Put differently, sensitive habitat changes substantially, even under the pressure of slight impacts. ES also refers to the potential of aquatic habitat to bounce back to an ecological condition closer to the situation prior to human impact. If it recovers, it is not regarded as sensitive. If the dams and grazing farm animals were to be removed, the riparian habitat would probably return to its original pristine state, or at least move closer to something that resembles its pristine state. As long as human habitation persists, this will never happen. These impacts are permanent. The aquatic habitat will not return to some original state. From this perspective, these grasslands with their drainage lines can be viewed as ecologically sensitive.	Sensitive
EISC	The EISC was estimated as Low/Moderate despite the medium conservation value, because the extent and severity of the proposed development's impact are limited to the site and not beyond the boundaries of the site.	Low/Moderate

5.8 AGRICULTURE

An initial Agricultural Assessment (Agricultural Compliance Statement) has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase. An Agricultural Compliance Statement aims to identify and assess the agricultural theme associated with the proposed development area and the environmental interactions it imposes.

A Screening Tool Report was generated (see Section 0) **and classified the proposed development area's agricultural sensitivity theme as a high sensitivity.** The agricultural sensitivity is high due to the moderate-high land capability and annual crop cultivation.

Agricultural sensitivity, as reported in the Screening Tool, is based upon the land use (SANLC, 2014) and land capability (Department of Agriculture, Forestry and Fisheries, 2017, also referred to as DAFF, 2017). All cultivated land is considered a high sensitivity, while irrigation and unique crops, are considered very high sensitivity, irrespective of the land capability. The land use in the Screening Tool is based on the South African Nation Land Cover (SANLC, 2014). Meanwhile, there have been two more updated versions of the land use (2018 and 2020).

According to DAFF,2017, land capability is defined as the most intensive long-term use of land for purposes of rainfed farming determined by the interaction of climate, soil, and terrain. The following weight was given to each attribute when calculating the land capability:

Land capability = Climate (40%) + Terrain (30%) + Soil (30%)

The land capability (DAFF, 2017) classifies the soils as having a land capability as having a medium to high land capability (Figure 18). There are cultivated crop fields present within the proposed development area.

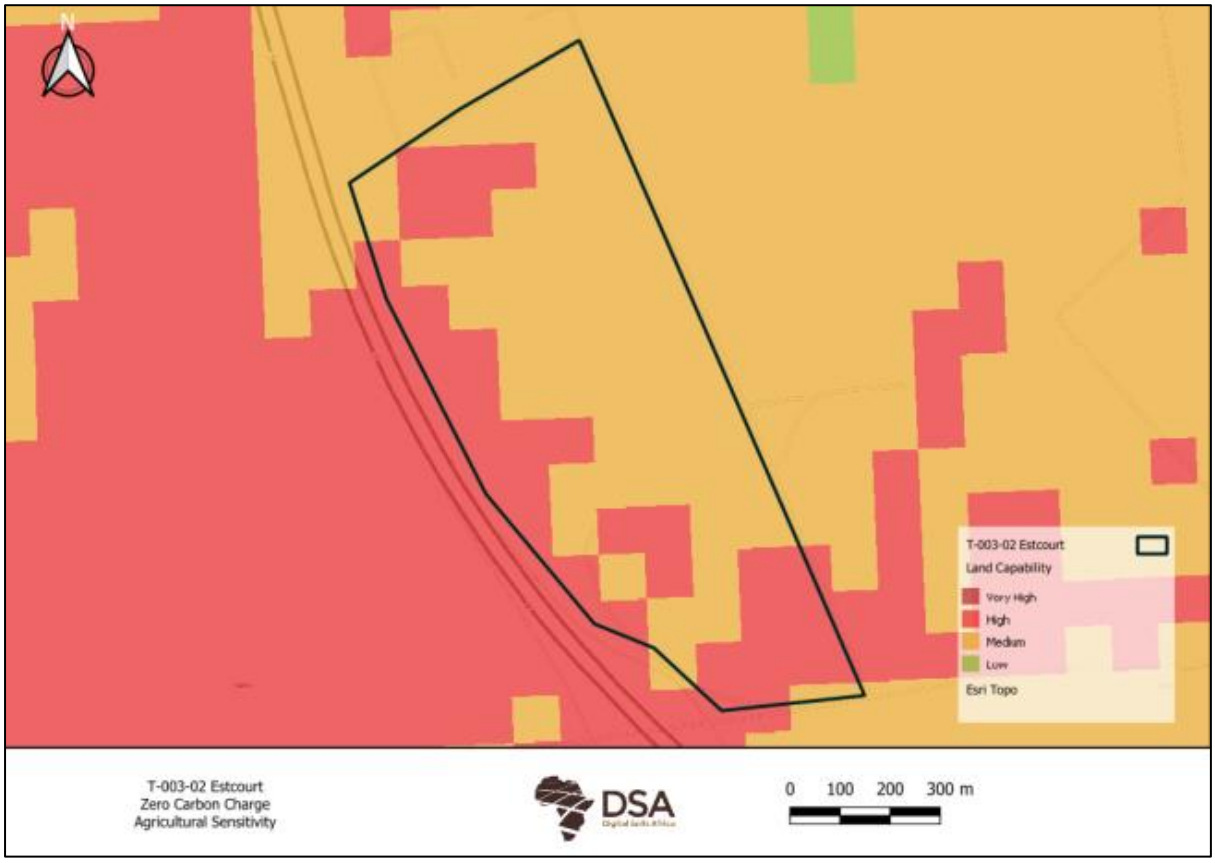


Figure 18: The land capability of the study as used in the Screening Tool

5.8.1 Land capability

5.8.1.1 Climate capability

Climate capability is highest weighted factor (40%) in the calculation of the land capability (DAFF, 2017) which is used in the Screening Tool to determine the agricultural sensitivity. The climate capability consists of 9 values, with 1 being the lowest value and 9 being the highest value (There is however no evaluation value of 1 & 2).

The climate capability is determined by factors such as moisture supply capacity, physiological capacity and climatic constraints. **The climate capability according to DAFF, 2017, is a value of . This is considered a moderate – high climate capability.**

5.8.1.2 Terrain capability

Terrain plays an important role in a plants' physiological growth requirements (sensitivity and accessibility perspective). Therefore, the two terrain modelling concerns included in the terrain capability modelling exercise were plant physiology and terrain sensitivity.

The terrain capability consists of 9 values, with 1 being the lowest value and 9 being the highest value. The terrain capability of where the proposed development area is situated, according to the DAFF, 2017, has a range from 5 (moderate) to 6 (moderate – high). **This is generally considered a moderate to high terrain capability.**

5.8.1.3 Soil capability

A land type is an area which can be demarcated at a scale of 1:250 000 with similar soil forming factors and therefore soil distribution patterns. A land type does therefore not represent uniform soil polygons, but rather information regarding the occurrence of different soils on different terrain units can be obtained from the land type inventory. Land type data was used in calculating the soil capability (DAFF, 2017), and therefore, indirectly used in the Screening Tool for estimating the agricultural sensitivity.

The study area is comprised of the Bb (127) & Fa (690) land types (Land Type Survey Staff, 1972 – 2002). Fa land types comprise of shallow soils (Mispah & Glenrosa forms) predominate; little or no limit landscape, while Bb types comprise red and yellow, dystrophic/mesotrophic, apedal soils with plinthic subsoils (plinthic soils comprise >10% of land type, red soils comprise <33% of land type).

The soil capability consists of 9 values, with 1 being the lowest value and 9 being the highest value. The main factors contributing to the soil capability consist of plant available water (80%), soil sensitivity (17%) and soil fertility (3%).**The soil capability of the development area, according to the DAFF (2017), has a value ranging between 3 (low) and 6 (moderate-high). This is considered a moderate soil capability.**

5.8.1.4 Conclusion

The new Land capability (Department of Agriculture, Forestry and Fisheries, 2017) has fifteen classes, as opposed to the eight classes described by Schoeman et al. (2002). The data is usable on a scale of 1:50 000 – 1: 100 000, therefore, not suitable for farm scale recommendations.

- Classes 1 to 7 are of low land capability and only suitable for wilderness or grazing.
- Classes 8 to 15 are considered to have arable land capability with the potential for high yields increasing with the land capability class number.

The land capability values of the study area are between 8 (moderate) and 9 (moderate to high), which is in the range of non-arable soils (1-7) and arable soils (8-15).**The majority of the study area has a land capability with values ranging from 6 (low - moderate) to 10 (moderate - high), which is generally considered an arable land capability (8-15).**

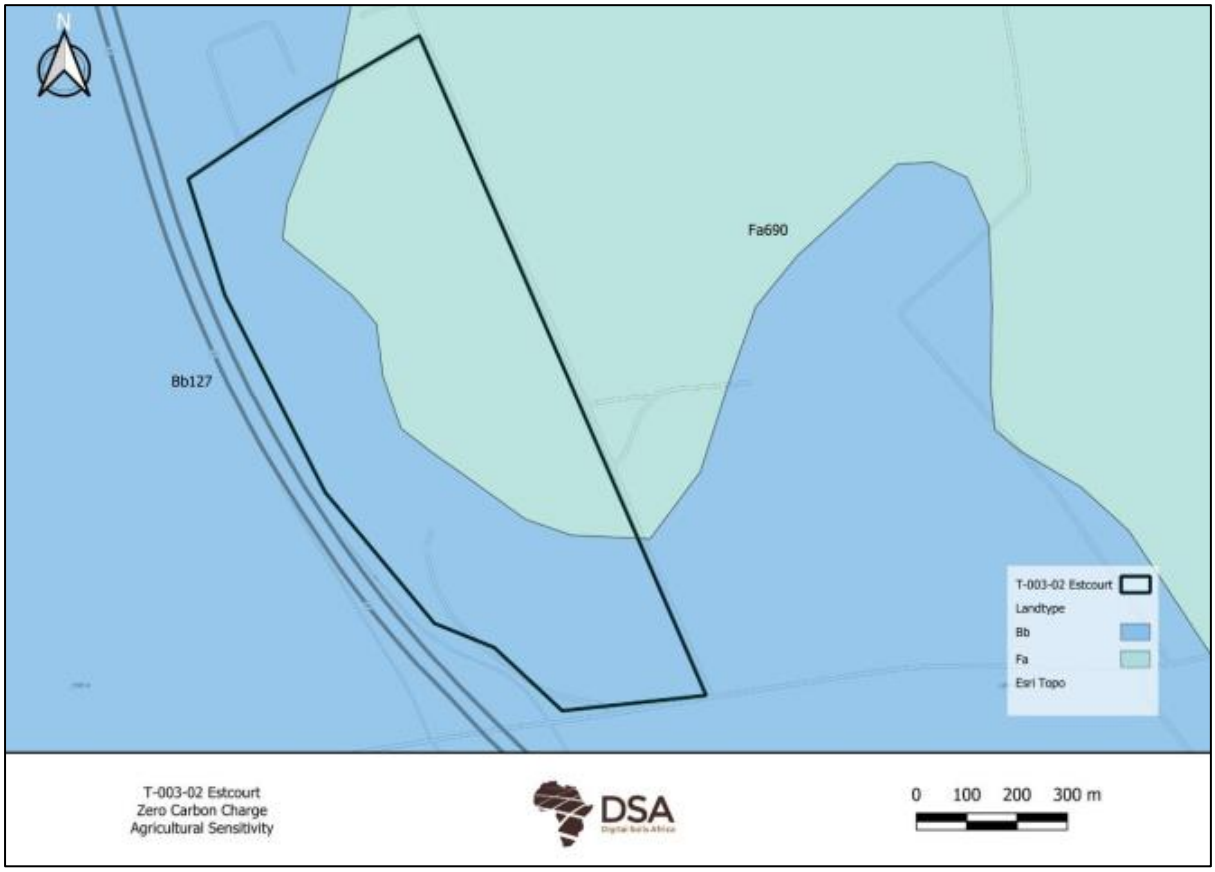


Figure 19: Land types found in the study area and the surrounding area (Land type survey staff, 1972-2002)

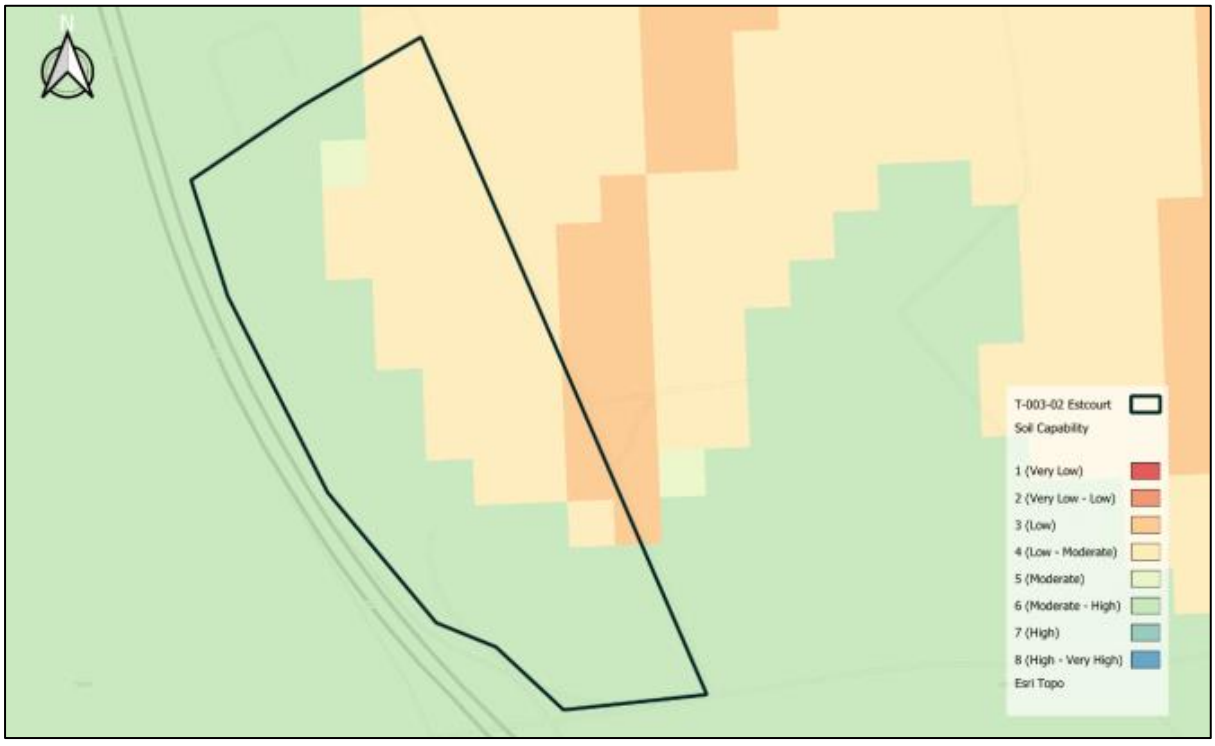


Figure 20: The soil capability of the site and surrounding area

5.8.2 Grazing capacity

The unit used in the grazing capacity is hectares per large stock unit (ha/LSU). **The site has a high grazing capacity of 6.5 ha/LSU.** A homogeneous unit of vegetation expressed as the area of land required (in hectares) to maintain a single large stock unit (LSU) over an extended number of years without deterioration to vegetation or soil. Where an LSU = an animal with a mass of 450 kg and which gains 0.5 kg per day on forage with a digestible energy of 55%. (Trollope et. Al., 1990).

5.8.3 Land use

South African National Land-Cover 2020 (SANLC 2020) (GeoTerraImage, 2020) was compared to the 2014 Land Cover to determine if there was a land use change since 2014. The SANLC 2020 classifies the area as 2 (Contiguous Low Forest & Thicket), 3 (Dense Forest & Woodland), 5 (Contiguous & Dense Planted Forest), 13 (Natural Grassland), 19 (Artificial Dams), 40 (Cultivated Commercial Annuals Non-Pivot / Non-Irrigated), 42 (Fallow Land & Old Fields (Trees)), 44 (Fallow Land & Old Fields (Grass)) and 55 (Village Scattered). Refer to Figure 21.

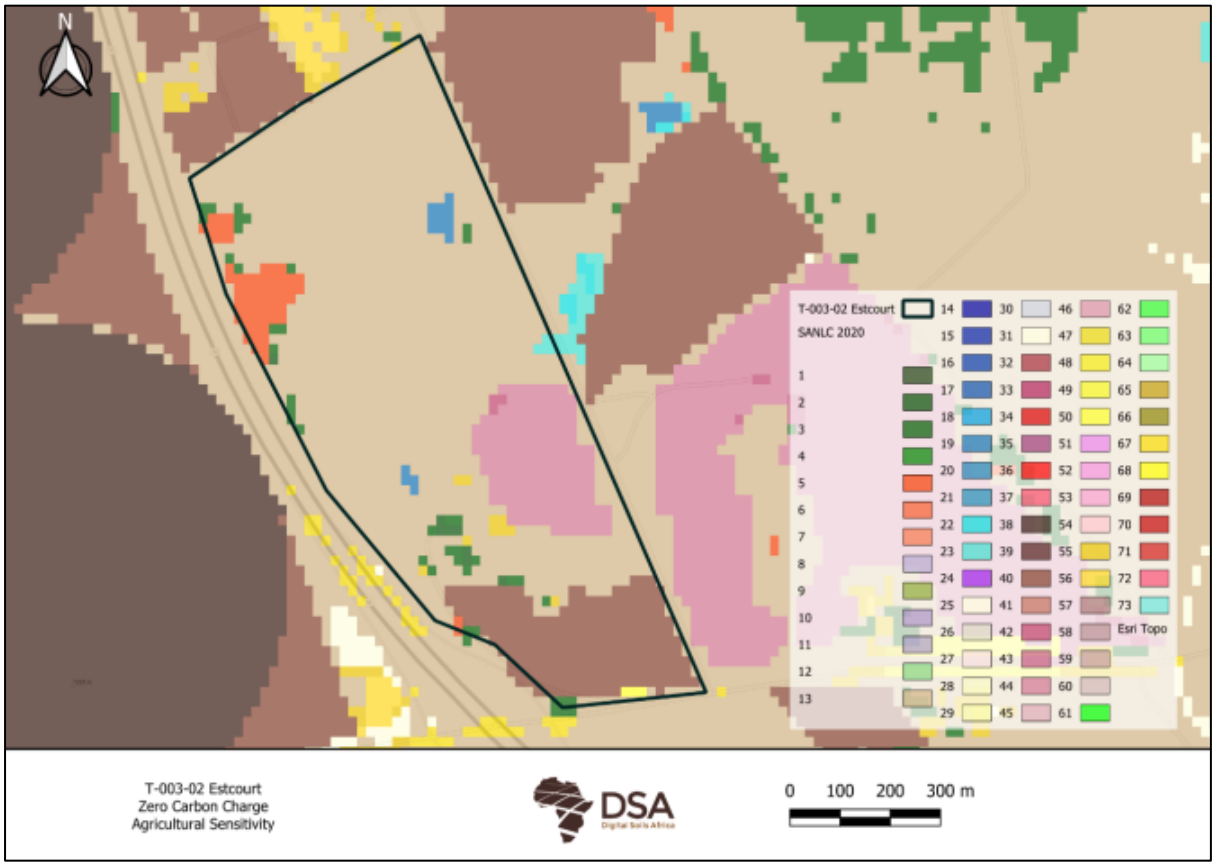


Figure 21: South African National Land-Cover 2020 (SANLC, 2020)

5.8.4 Site verification

On November 8, 2023, the specialist, Darren Bouwer conducted a field survey using a soil auger. The soils were observed, described, and classified based on the guidelines provided by the Soil Classification Working Group (2018).

The study area is characterised by two dominant soils. **Katspruit soils dominate the wetland areas and associated with long term saturation.** While the upslope soils are dominated by duplex soils ranging in depth. Bleached topsoil which overlies a strong structured subsoil. These soils are associated with erosion and not considered high potential agricultural soils.

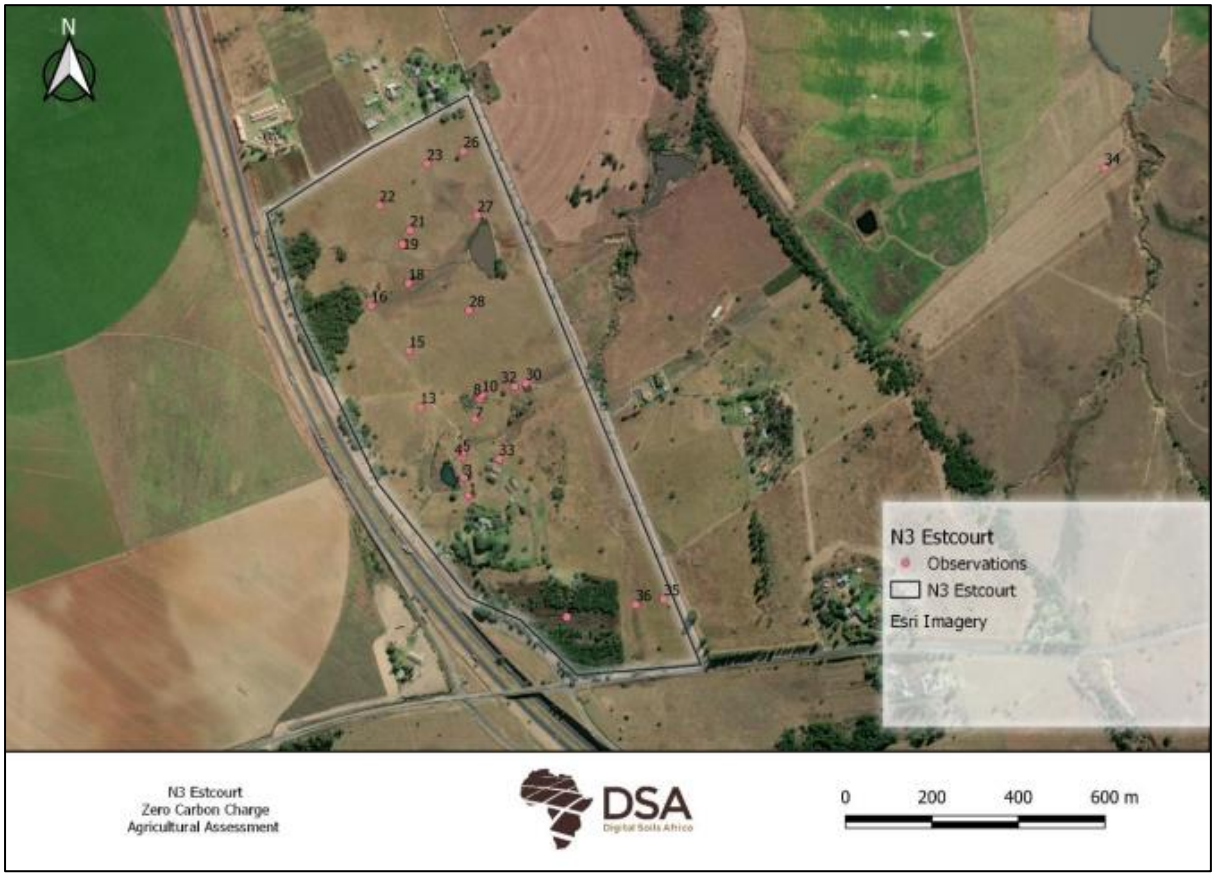


Figure 22: Observations made during the site visit

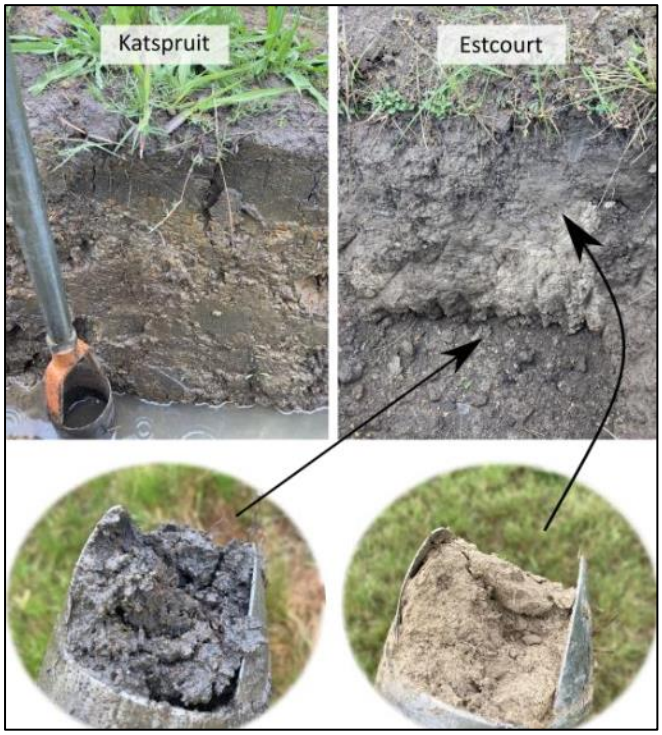


Figure 23: An example of a sample of orthic and yellow-brown apedal B soil augured in the study area during site verification

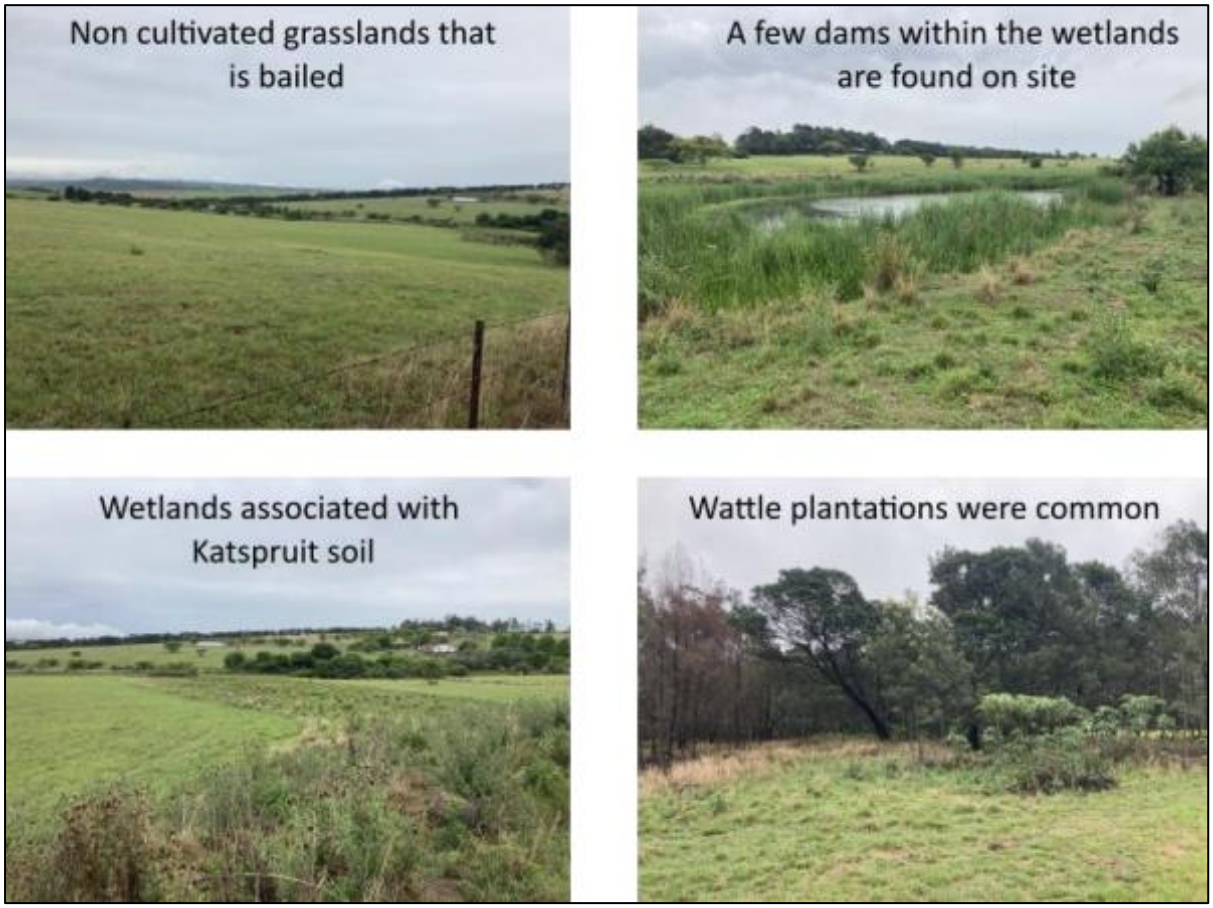


Figure 24: Land use in the study area

The final sensitivity map based on the soil observations and the land use is presented in Figure 20. The wetland areas dominated by Katspruit soils were considered as low sensitivity. This is due to the poor drainage and water saturation present in the wetlands. The grasslands are best suited fo grazing, as Estcourt is prone to erosion. These soils produce high quality grasslands and are prone to erosion when cultivated.

5.8.5 Protected Agricultural Area

Preservation and Development of Agricultural Land Framework Act (PD-ALF) is in the process of being published. The new statutory framework will replace the Subdivision of Agricultural Land Act, Act 70 of 1970.

Protected Agricultural Area, as in the draft framework, is defined as "*an agricultural land use zone, protected for purposes of food production and ensuring that high potential and best available agricultural land are protected against non-agricultural land uses in order to promote long-term agricultural production and food security."* **The study area is not situated within a Protected Agricultural Area.**

Figure 25: The agricultural sensitivity of the site

5.9 HERITAGE / ARCHAEOLOGICAL & PALAEONTOLOGICAL

An initial Heritage / Archaeological Impact Assessment has been undertaken, with the preliminary findings included in the pre-application Scoping Report; however, it will be finalised during the EIA phase.

A Heritage Assessment, like the Heritage Survey conducted for the proposed development, aims to identify and assess the heritage / archaeological and palaeontological themes associated with the proposed development area and the environmental interactions and impacts it imposes.

A Screening Tool Report was generated (see Section 0) **and classified the proposed development area's environmental sensitivity themes as the following:**

- **Archaeology and Cultural Heritage (low)**
- **Palaeontology (very high)**

The palaeontological sensitivity is very high due to the likelihood of finding significant fossils within the geologic unit associated with the site.

A Notice of Intent to Develop (NID) will also be submitted to the Heritage Authority.

5.9.1 Heritage & Archaeological findings

A desktop assessment is conducted using databases which includes information on archaeological sites, national and provincial monuments, battlefields, and cemeteries in Southern Africa. These databases aids in locating and dating heritage / archaeological sites like buildings, graves, monuments, etc. Topographical maps and aerial photographs are also utilised and consultations with local data recording centres, historical architects, palaeontologists, and historians may be necessary. Once heritage / archaeological sites have been identified the significance of each recorded site is rated. Sites are categorised into low, medium, and high significance. Depending on the significance determined, a corresponding mitigation measure is recommended based on the impact on the proposed development.

The desktop study consisted of analysing various maps for evidence of prior habitation in the study area, as well as for previous archaeological surveys. The following finds were made:

- There are no known heritage surveys near or in the study area. Some open Stone Age scatters have been noted, as well as Late Iron Age stone walling and graves.
- The farm Zaailager of Gerit Maritz (famous Voortrekker leader after whom Pietermaritzburg was partly named), is 7km to the east. The farm dates to 1836.
- The main farm building, labourer's houses, additional buildings predate 1940s and are thus automatically protected by the KZN heritage authority. This portion of the farm was originally called Melton.

During the field survey the followings findings were made:

- Parts of the main farm building, and buildings to the southwest, predate 1947. There is also a low stone wall adjacent to the current access road.
- A grave is located in the wattle woodlot. It has been demarcated with metal poles. The grave consists of a stone cairn in a north-south orientation. The graves are associated with the settlement on the 1947 topographical map. The current tenant said descendants used to visit the grave, but have not for some time. The grave dates to 1940s – 1950s.
- The cemetery is located in the southeastern corner of the study area. The cemetery consists of a stone cairn on each side of the cemetery with probably stone cairns between them. The cairns are in an east-west orientation. The cemetery is 19m x 8m in size

Figure 26: Features of heritage significance

5.9.2 Palaeontological findings

The palaeontological sensitivity is very high due to the likelihood of finding significant fossils within the geologic unit associated with the site.

This site contains the Estcourt Formation and possibly Karoo Dolerite. According to the Palaeosensitivity map this area is flagged red and would require a palaeontologist to undertake a field visit. If the foundation is shallower than 2m, this can be mitigated to a desk-top PIA because: 1) Solar Installations have very shallow footprints and 2) the area has been disturbed by previous main road installations. However should the foundation be deeper than 2m then a palaeontological field visit will be required during construction. However should the foundation be deeper than 2m then a palaeontological field visit will be required during construction. A “Chance Find Protocol” has been incorporated into this document to cover this eventuality.

Table 7: Palaeontological sensitivity rating

Colour	Sensitivity	Required action
Red	Very high	Field assessment and protocol for finds is required.
Orange / Yellow	High	Desktop study is required and based on the outcome of the desktop study; a field assessment is likely.
Green	Moderate	Desktop study is required.
Blue	Low	No palaeontological studies are required however a protocol for finds is required.
Grey	Insignificant / Zero	No palaeontological studies are required.
White / Clear	Uknown	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

Figure 27: Palaeontological sensitivity map

5.10 SOCIO-ECONOMIC CONTEXT

5.10.1 uThukela District Municipality

The uThukela District Municipality's (UTDM) Integrated Development Plan (IDP) for 2024/2025 outlines a comprehensive strategic framework designed to address the district's development needs and challenges. The IDP is developed in compliance with Chapter 5 of the Local Government Municipal Systems Act (32 of 2000), which mandates a strategic plan for the municipality's development. The document emphasises aligning the IDP with the municipality's budget, ensuring financial resources are allocated to meet strategic priorities and community needs. The IDP addresses key economic growth targets, identifies investment opportunities, and responds to financial constraints while aiming to improve service delivery, infrastructure development, and community well-being. The plan integrates various performance management systems to ensure effective implementation and accountability.

The proposed Estcourt Recharging Station aligns well with the UTDM's IDP for 2024/2025. The project supports the IDP's focus on sustainable development, economic growth, and infrastructure improvement by promoting clean energy solutions and reducing carbon emissions. By incorporating solar PV arrays for EV charging stations, the project enhances the district's commitment to green energy and aligns with the IDP's goal of addressing environmental sustainability. Additionally, the project contributes to economic opportunities by providing infrastructure that supports the logistics sector, in line with the IDP's objectives of fostering economic development and improving service delivery within the municipality. The alignment with the IDP ensures that the project not only addresses current needs but also contributes to the long-term strategic goals of the UTDM.

The total value of goods and services produced in uThukela in 2011 was R13.4 billion, contributing 5% to the provincial economy. The district's GVA contribution grew at an average of 6% per annum between 2001 and 2011, which is above the overall average for KZN of 4%. This is attributed to the high average growth in Okhahlamba, Alfred Duma and Inkosi Langalibalele municipalities.

Agriculture contributed R946 million to the district economy in 2011 and employed 7 959 people. The sector had one of the highest average annual growth rates in terms of GVA at 8% for 2001 to 2011, although employment growth was negative at -5% per annum. The number of people employed in agriculture, forestry and fishing started decreasing in 2007, which is in line with provincial trends in the sector.

The sector contributed 7% to total GVA and employment within the municipality in 2011. The municipality's agricultural sector contributed 7% to total agricultural GVA of KZN in 2011, up from 4% in 2001. Employment in uThukela's agricultural sector as a proportion of total agricultural employment in KZN was 8% in 2011, also up from 4% in 2001. Commercial agriculture occupies a large portion of the municipal land area, but subsistence farming is the dominant activity in the municipality.

According to the 2007 Census of Agriculture, there was approximately 63 000 ha of area planted to crops in the district in 2014. The main crop planted was maize followed by potatoes, with the main areas for cropping being Estcourt and Bergville. In addition, there were 1 million chickens, 56 000 pigs, 47 000 cattle and 26 000 sheep in the district in 2015. Beef ranching dominates in Alfred Duma local municipality, whilst chickens are the dominant activity in Inkosi Langalibalele local municipality. The main area of sheep and pig farming is also in Inkosi Langalibalele local municipality.

The main source of employment within the district in 2011 was wholesale and retail trade, catering and accommodation at 25%. This was followed by government at 16% and community, social and personal services at 15% Employment in the primary sector comprised around 7% of total employment in the district in 2011.

From an employment growth perspective, the agriculture; manufacturing; and electricity, gas and water sectors showed an average decrease in employment of 5%, 2% and 1% respectively between 2001 and 2011. The biggest employment gains were in mining and quarrying (6% growth); finance, insurance, real estate and business services; transport, storage and communications; and general government (all 5% growth respectively).

The unemployment rate in uThukela district municipality was sitting in 31.8% in 2016 and 32.2% in 2017.The trend is that in the uThukela district and its family of municipalities, the unemployment rate is accumulative.

Alfred Duma local municipality unemployment rate was sitting at 29.0% in 2016 and 29.4% in 2017.Inkosi Langalibalele local municipality recorded the unemployment rate of 34.5% in 2016 and 34.9% in 2017.Okhahlamba local municipality was sitting at 36.5% in 2016 and 36.8% in 2017.

Figure 28: uThukela District Municipality[9]

[9] https://municipalities.co.za/

5.10.2 Inkosi Langalibalele Local Municipality

The IDP document provides a comprehensive framework for the integrated development plan (IDP) of Inkosi Langalibalele Local Municipality (ILLM) for the period 2022/2023-2026/2027. It outlines the municipality's strategies, priorities, and actions for sustainable development. The document includes sections on public participation, sector department involvement, alignment with national and provincial policies, and the municipality's long-term vision and mission. Key development challenges and opportunities are identified, along with strategies to address these challenges and leverage opportunities for economic and social development.

The IDP for ILLM aligns well with the proposed Estcourt Recharing Station project. The IDP emphasises sustainable development, economic transformation, and job creation, which are central to the truck stop project powered by solar photovoltaic (PV) arrays. The project supports the municipality's goals of promoting economic development, improving infrastructure, and enhancing environmental sustainability. By providing EV charging stations and reducing carbon emissions, the project aligns with the IDP's focus on sustainable infrastructure and green energy initiatives. Furthermore, the involvement of community stakeholders and alignment with provincial and national policies ensure that the project contributes to the broader socio-economic objectives of the municipality, thereby enhancing the overall development and quality of life in the region.

ILLM contributes 3.5% to the province's GDP. Its economy is mainly driven by secondary and tertiary sectors, with manufacturing leading at 27%, followed by government services, finance, business services, transport, communications, wholesale, retail, and tourism, and agriculture. These sectors collectively contribute approximately 81% to the municipality's GDP, making it the second dominant economic hub in uThukela District.

The economy of ILLM is primarily driven by tourism, manufacturing, and agriculture. Tourism benefits from attractions like the Okhahlamba Drakensberg World Heritage Site, while manufacturing and agriculture are key contributors to local employment and economic activity.

Agriculture plays a significant role in the municipality's economy, contributing 17% to formal employment as of 2017. Despite its potential, the agricultural sector's share of the economy has fluctuated, contributing 6.7% to the GDP in 2018, up from 6.1% in 2009. This sector's gross value addition also grew from R213 million in 2009 to R288 million in 2018.

The fluctuation in agriculture's economic contribution is due to factors like droughts, rising oil prices, low commodity prices, and fluctuating exchange rates. These challenges highlight the sector's vulnerability to external factors beyond the municipality's control, despite its high agricultural and agri-processing potential.

Agriculture's importance extends beyond direct economic contributions. It ensures food security and supports the secondary and tertiary sectors, including manufacturing, transport, and trade. The underutilization of vast agricultural lands is a concern, given the sector's potential benefits and interconnections with other economic activities.

In summary, while agriculture is a vital part of the municipality's economy, realizing its full potential is crucial for sustainable growth and development, addressing food security, and enhancing economic linkages within the municipality.

6 ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

Environmental issues were raised through desktop analysis, site visits, informal discussions with the project team, specialists and authorities, and by Interested and Affected Parties through the initial public participation period. All issues raised will be assessed in the specialist reports and will form part of the Environmental Impact Report. Additional issues raised during the public participation will be listed in the Final Scoping Report.

The following potential issues have been identified:

6.1 BIODIVERSITY IMPACT

The following findings were made with the preliminary Terrestrial Biodiversity Assessment:

- The site is mostly cultivated and has thus low ecological importance.
- The only areas with a Medium-High sensitivity is the wetland and drainage areas that should and could be avoided at this site.

6.2 FRESHWATER IMPACT

The following potential issues were identified in the initial Freshwater Assessment:

The construction and operation of the proposed Estcourt Recharging Station is essentially a low impact undertaking. It does not carry any significant environmental risks. The drainage line is a low value aquatic habitat, even though it is in an ESA and has a small artificial NFEPA wetland.

The other aquatic features on the land are small, highly artificial and much disturbed. There is at least some aquatic ecological functioning in those habitats, even minutely and at least with some value, as all these wet patches on farmland. Because of the limited ecological and conservation significance, these were not assessed. The Risk Matrix indicates that a General Authorisation is the correct level of official approval. A License is not called for.

- Flow modification - The road, road embankments and the dam represent significant flow modifications and the proposed recharging station would add to this. Compared to the size of the sub-catchment, the addition of the current proposal is small. It would not be a significant change to the flow regime. The erosion potential would not increase.

- Permanent inundation - The proposed development will not materially change the inundation regime. The land surface and its permeability under the solar panels remain unchanged.

- Water quality modification - The soil will be loosened during the construction phase. digging, with a possibility of the sediments washing into the aquatic habitat along with storm water. This must be prevented, as it will upset ecological functioning, even though only minutely. It is best to complete the construction during the dry season.

- Sediment load modification - Soil will be disturbed during the construction phase. It is possible that storm water can wash sand and mud into the aquatic habitat, even though limited. This must be prevented

- Canalization - No roads on the proposed site and the parking area may create preferential flow paths for stormwater. Landscaped swales and holding ponds may be required to contain and

calm runoff. Runoff must not be allowed to cause erosion. The stormwater management plan makes provision for this eventuality.

- Topographic alteration - The envisaged construction is not about to alter the topography of the landscape in any way.

- Terrestrial encroachment - The construction and operation of the charging station will not be the cause of vegetation encroaching onto the aquatic habitat. The black wattle now growing in the upper reaches of the drainage lines will be removed and will be kept away permanently.

- Indigenous vegetation removal - Grassland will be lost because of the construction and operation of the charging station. The footprint must be limited to the demarcated construction area and not be allowed to spread onto the adjacent land.

- Invasive vegetation encroachment - The current substantial stands of black wattle will be removed and permanently controlled on site.

- Alien fauna - The farm is used for grazing cattle. Once under solar panels, grazing will cease.

- Over-utilization - The farm is used for grazing cattle. This will cease.

- Ground water table - The ground's permeability under the elevated solar panels will be left unchanged, as the panels are elevated on stilts. The ground water table will not be affected.

- Waste - Portable toilets will be serviced by a reputable company during the construction phase. Wastewater will be dealt with in a septic tank and soakaway system during the operational phase. The municipal wastewater facility is too far away to offer a financially viable alternative. Litter will be collected in household wheelie bins and it will be disposed of on the municipal waste disposal site. These housekeeping issues will not be allowed to have any impact on the natural environment.

6.3 AVIFAUNAL IMPACT

6.3.1 Preliminary analysis

The overall environmental impacts of solar energy developments are poorly understood globally. Unlike wind energy developments, there is presently no clear pattern in the types of birds negatively affected by solar plants, and collision casualties recorded to date include a wide variety of avian guilds (Jenkins et al., 2017). Widely accepted impacts of solar PV for all faunae include permanent habitat destruction, fragmentation, and the associated displacement of individuals (particularly for range restricted species). For birds, an issue can be collision with reflective panels as individuals mistake large panel arrays for wetlands or water bodies, otherwise known as the "lake effect" (Lovich and Ennen, 2011; Smit, 2012; DeVault et al., 2014; Visser, 2016; Kosciuch et al., 2020; Chock et al., 2021). Other general impacts documented to date include noise and disturbance caused by construction activities, attraction of novel species through the creation of artificial nest sites, burrowing sites, and shade, and chemical pollution from panel cleaning (Lovich and Ennen, 2011; DeVault et al., 2014; Chock et al., 2021). The impacts of additional infrastructure associated with solar energy developments, such as roads, power lines, and substations, must also be considered. These include, habitat destruction, fragmentation, and threat of collision, and electrocution for birds (Jenkins et al., 2017).

Possible impacts on fauna and avifauna during the construction and operational phases and their sources associated with the proposed development are provided in Table 8. The installation of the PV SEF and ancillary infrastructure will require the clearance of approximately 38 ha of vegetation during the construction phase. The main impact relating to fauna and avifauna will be loss of habitat and potential displacement of small passerines. The proposed layout shows the infrastructure covering key habitats such as parts of the natural watercourses and farm dams. Impacts these highly sensitive areas would include removal of key foraging and breeding habitat for avifauna and would result in displacement of waterfowl and other species dependent on these aquatic habitats. Impacts on highly sensitive habitats can be avoided or minimised by the project layout avoiding these areas.

Other possible direct impacts include possible collisions by birds with PV panels and power lines during the operational phase. Possible indirect impacts include spread of invasive alien vegetation due to disturbance to the soil, and contamination of the surrounding watercourses from chemicals used in cleaning of the panels or hydrocarbons from the truck stop workshop and wash bay.

Table 8: Possible impacts arising from the proposed development

Possible Impact	Source of Impact	Area and Species to be Affected	Development Phase	Nature of Impact
Loss of natural vegetation and habitat	Clearing vegetation for installation of solar panels, roads, and buildings	Natural and near-natural grassland vegetation; Small passerines; Raptors; generalist mammals	Construction	Direct
Loss of wetland and aquatic habitat	Removal of farm dams and parts of the natural watercourse for installation of solar panels	Natural watercourse and farm dams; Waterfowl, aquatic fauna	Construction	Direct
Collision of avifauna with reflective surfaces of solar panels leading to injury or death	Solar panels perceived to be a water body by avifauna	Solar PV development site; Gamebirds, waterfowl; raptors	Operation	Direct

Possible Impact	Source of Impact	Area and Species to be Affected	Development Phase	Nature of Impact
Collision and/or electrocution of avifauna with associated power lines	Existing power lines	Existing power lines; Gamebirds, waterfowl; raptors	Operation	Direct
Contamination of the environment by hazardous materials	Construction activities; Cleaning of solar panels during operation; Truck workshop, and cleaning of trucks	Watercourses downstream of the development, and soil below the panels; All species	Construction and Operation	Indirect
Spread of invasive alien plant species	Disturbance to soil and clearing of vegetation	Study area and surroundings	Construction	Indirect
Disturbance and displacement of resident species	Clearing of site and construction activities; Operational and maintenance activities; attraction of novel species	Site and immediate surroundings; Waterfowl; Small terrestrial species; Common ground-dwelling gamebirds	Construction and Operation	Indirect
Habitat fragmentation	Clearing vegetation and installation of solar panels, roads, and buildings	Study area	Operation	Indirect
Increased human disturbance; Gradual environmental degradation	• Disturbance to the study area, adding to existing pressures in the landscape (farming) • Adding to cumulative pressures in the landscape caused by other approved or proposed renewable energy projects	Study area and surrounding natural areas	Operation	Cumulative

6.3.2 Pre-construction monitoring requirements

The study area is relatively disturbed considering the proximity to the N3 highway and the current farming activities. The site is largely comprised of disturbed but natural grassland habitat that support generalist birds found in the region. It is evident that the broader landscape supports many priority bird species (i.e. bird species that may be susceptible to the impacts of solar PV development), including SCC, which have been confirmed to occur in the surrounding areas. It is therefore important to conduct the appropriate pre-construction monitoring according to the best practice guidelines for assessing the impacts of solar energy on birds (Jenkins et al., 2017).

This will take the avifaunal assessment to Stage 2 – Data Collection, which will include onsite avifaunal monitoring on which to base the impact assessment report and provide a baseline against which post-construction monitoring (if required) can be compared.

The duration and scope of data collection is guided by the size of the proposed development (in this case approximately 39.5 ha), and the results of this preliminary assessment, which verifies the sensitivity of the site from an avifaunal perspective (medium and high sensitivity). For the study area,

assessment Regime 2 (refer to Based on the key habitats present in the study area and surrounds, the following sampling must be incorporated into the data collection phase:

- Abundance estimates for small terrestrial birds through point count or walked linear transect surveys.
- Counts for large terrestrial birds and raptors, through driven road transects and vantage point monitoring.
- Searches for any nest sites of priority species such as raptor nests. All such sites should be mapped accurately and checked for any evidence of breeding.
- Flight behaviour of priority species flying over or near the proposed development area and associated risk of collision.
- Bird numbers at focal wetlands such as the farm dams and local movements between waterbodies.
- Details of any incidental sightings of priority species.

Table 9 for medium solar facilities) with sampling over a minimum of two seasons with one survey falling within the peak (summer) season is appropriate. Based on the key habitats present in the study area and surrounds, the following sampling must be incorporated into the data collection phase:

- Abundance estimates for small terrestrial birds through point count or walked linear transect surveys.
- Counts for large terrestrial birds and raptors, through driven road transects and vantage point monitoring.
- Searches for any nest sites of priority species such as raptor nests. All such sites should be mapped accurately and checked for any evidence of breeding.
- Flight behaviour of priority species flying over or near the proposed development area and associated risk of collision.
- Bird numbers at focal wetlands such as the farm dams and local movements between waterbodies.
- Details of any incidental sightings of priority species.

Table 9: Recommended avifaunal assessment regimes (Jenkins et al., 2017)

Type	Size	Avifaunal Sensitivity*		
		Low	Medium	High
All solar technologies except Concentrated Solar Power (CSP)	**Small** (<30 ha / <10 MW)	***Regime 1*** One site visit of 1-5 days	***Regime 1*** One site visit of 1-5 days	***Regime 2*** 2-3 seasonal visits of 3-5 days over 6 months Pre- & post-con monitoring mortality searches
	Medium (30-150 ha / 10-50 MW)	***Regime 1*** One site visit of 1-5 days	***Regime 2*** 2-3 seasonal visits of 3-5 days over 6 months Pre- & post-con monitoring mortality searches	***Regime 2*** 2-3 seasonal visits of 3-5 days over 6 months Pre- & post-con monitoring mortality searches
	Large (>150 ha / >50 MW)	***Regime 2*** 2-3 seasonal visits of 3-5 days over 6 months Pre- & post-con monitoring mortality searches	***Regime 2*** 2-3 seasonal visits of 3-5 days over 6 months Pre- & post-con monitoring mortality searches	***Regime 3*** 4-5 seasonal visits of 4-8 days over 12 months Pre- & post-con monitoring mortality searches
CSP	All	***Regime 3*** 4-5 seasonal visits of 4-8 days over 12 months Pre- & post-con monitoring mortality searches		

The avifaunal sensitivity is based on the number of priority species present, or potentially present, the regional, national, or global importance of the affected area for these species (both individually and collectively), and the perceived susceptibility of these species (both individually and collectively) to the anticipated impacts of development

6.3.3 Other fauna impact management

Overall, the site is relatively disturbed considering the proximity to the N3 highway and the current farming activities. The regular mowing creates a systematic disturbance to the grassland habitat, so it is unlikely to support permanent populations of mammals. These areas are of medium and low sensitivity. The site is relatively small and is unlikely to support any individuals or populations of SCC. While faunal activity on the site was generally low and no SCC were recorded on the site during the site visit, key habitats such as the watercourses, dams, and wetlands are important habitat for all fauna, are highly sensitive, and should be avoided by the proposed development. It is therefore recommended that the layout be revised to avoid the watercourses and dams by the buffers specified by the wetland and aquatic specialists.

In terms of cumulative impacts, the site is a relatively small strip of land located next to the N3 highway and the interchange with the P29 road. The site is surrounded by agricultural fields, and the towns of Estcourt and Wembesi nearby. The site is therefore relatively fragmented. Other impacts in the surrounding areas include a telecommunications tower on the interchange to the south of the site. No other proposed or approved solar PV facility occurs with a 30 km radius of the site.

The perceived impacts from the proposed development from a terrestrial faunal perspective (beside avifauna) are considered to be negligible as long as all highly sensitive areas are avoided. The following recommendations are however important for ensuring the impacts are kept to a minimum, and must be included in the Environmental Management Programme (EMPr):

1. An experienced, independent Environmental Control Officer (ECO) must be appointed to oversee the construction activities and compliance with the EMPr.
2. The layout should be revised to avoid all areas classified as high and medium-high sensitivity, such as the watercourses, wetlands, and dams, by the buffers specified by the wetland and aquatic specialists.
3. All high and medium-high sensitivity areas such the watercourses, wetlands, and farm dams must be avoided by all construction activities including construction camps and must be considered no-go areas for construction workers.
4. If any active mammal burrows are encountered during construction, where the burrow or burrow system would have to be destroyed, the ECO must evaluate whether a relocation specialist will be required to safely remove the animals before construction commences.
5. During construction, no wild bird or animal may under any circumstance be handled, removed, or be interfered with by construction workers. No wild bird or animal may under any circumstance be hunted, snared, captured, injured, or killed. This includes animals perceived to be vermin.
6. Alien plant eradication and control must be undertaken throughout the construction phase and the site must be kept clear of alien plants during the operational phase.

6.4 HERITAGE / ARCHAEOLOGICAL IMPACT

The possible impact on heritage resources (heritage / archaeological and palaeontological) has been identified as a possible environmental impact as a result of the development of the Estcourt Recharging Station.

During the field survey the followings findings were made:

- Parts of the main farm building, and buildings to the southwest, predate 1947. There is also a low stone wall adjacent to the current access road.
- A grave is located in the wattle woodlot. It has been demarcated with metal poles. The grave consists of a stone cairn in a north-south orientation. The graves are associated with the settlement on the 1947 topographical map. The current tenant said descendants used to visit the grave, but have not for some time. The grave dates to 1940s – 1950s.
- The cemetery is located in the southeastern corner of the study area. The cemetery consists of a stone cairn on each side of the cemetery with probably stone cairns between them. The cairns are in an east-west orientation. The cemetery is 19m x 8m in size

Table 10: Location and recorded finds

Name	Longitude	Latitude	Description	Significance
Melton	S29.024127	E29.825970	Main farmhouse	To be assessed
Houses	S29.024670	E29.825326	Additional houses	To be assessed
Grave 1	S29.020464	E29.82025	Grave	High
Cemetery	S29.026649	E29.830470	Graves	High

Figure 29: Features of heritage significance

The buildings will need to be assessed if they are to be altered or damaged in any manner. This assessment needs to be undertaken by a Built Environment specialist. A permit to demolish or alter some of the buildings may be required.

A palaeontological field survey will be required if excavations exceed 2m in depth.The cemetery will not be affected as it is in an environmentally sensitive area. Grave 1 may be on the border of the Solar Array. The grave should be clearly demarcated before, during and after construction. Normally there is a 20m buffer between the grave and a development. If the demarcation of the grave is very visible and maintained, then the development could request a 5m buffer. Grave relocation is an option, but not a preferred one.

The cemetery will not be affected as it is in an exclusion zone. The isolated grave may occur on the edge of the proposed solar array. The grave will need to be clearly demarcated before, during and after construction phase. The client should request a decrease of the buffer pending the exact location of the grave in relation to the solar panels. The chances of palaeontological material occurring within the study areas is high if excavations exceed 2m in depth. No further mitigation is required. However, a Chance Find Protocol will be initiated and needs to form part of the EMPr.

6.5 LANDSCAPE / VISUAL IMPACT

The Visual Impact Assessment (VIA) for this project was meticulously conducted, considering the unique attributes of the site and its surrounding areas. The assessment identified key sensitive receptors, including travellers along the N3, visitors to the Estcourt Truck Inn & Tourist Accommodation, and residents near the proposed development site. The potential visual impacts on these receptors were evaluated for both the construction and operational phases.

Mitigation measures have been recommended to minimize visual impacts. These measures include the strategic use of vegetation screening, landscaping techniques, and barriers. The primary objectives are to lessen the landscape's visual intrusion, incorporate strategic planning and scheduling for the development, engage with the community and stakeholders, and protect tourism and cultural heritage features where feasible. These mitigation strategies are aligned with best practices in visual impact assessment, ensuring that the project blends harmoniously with the existing landscape.

The approach adopted allows for further refinements as more information becomes available, including adjustments based on agreements with landowners or regulatory requirements. The detailed consideration of visual impacts, coupled with strategic mitigation measures and the inclusion of landowners' requests, promotes responsible development that integrates well with the existing environment. No fatal flaws were identified during the assessment.

Research indicates that the visibility of a PV facility and thus the severity of visual impact decrease with increasing distance between the observer and the facility. The project's location, with its varying topography and existing vegetation, helps mitigate potential visual impacts. The project aligns with South Africa's renewable energy objectives and is expected to provide economic benefits to the local community.

Visual receptors within 0 - 1 km from the buildable area are anticipated to experience the highest degree of visual intrusion, considered the zone of highest visibility. Beyond this range, the degree of visual intrusion decreases significantly. The proposed Estcourt Recharging Station utilising renewable energy sources, is expected to be perceived positively by visual receptors due to its lack of harmful emissions or pollutants, presenting no health risks to observers.

With mitigation measures in place, the residual visual impacts will be minimal. The project will contribute positively to the local community and the broader region. Engagement with local stakeholders and communities ensures that their concerns are addressed, fostering a positive relationship and support for the project.

This project aligns with South Africa's commitment to renewable energy and sustainable development, offering environmental, economic, and social benefits. The proposed Estcourt Recharging Station represents a significant step towards cleaner energy and a more sustainable future.

6.6 AGRICULTURAL IMPACT

The proposed site is located on a property zoned for agricultural use. Currently, large parts of the property are used for agricultural purposes (grazing). Due to the size and nature of the proposed development, a small amount of agricultural land will be lost.

6.6.1 Compliance Statement

An Agricultural Compliance Statement for the proposed development was undertaken as part of the pre-application Scoping Report. The following findings were made as per the Agricultural Compliance Statement report:

- The study area is characterized by Katspruit soils in the wetlands, associated with longterm saturation, and duplex soils upslope, which are prone to erosion and not considered high potential for agriculture. This is in contrast to the land type data.
- Old cultivated field are overgrown by wattle and abandoned.
- Majority of the property is being used for grazing and cutting of grasslands.

Therefore, the lower lying areas are considered low sensitivity and the upslope area moderate sensitivity and very well suited for grazing. The area previously used as lands was overgrown with wattle. There is evidence of old lands and but no evidence of recent cultivation.

Therefore, the site assessment does not align with the screening tool for high agricultural sensitivity. No evidence of cultivation was found on-site, and the soils classified on site were not suitable for cultivation. Due to the low impact on existing agricultural activities and the site being classified as medium sensitivity, it is the specialist's opinion that the development continues.

The development will not have a significant impact on agricultural activities in the area and poses no threat to food security. In terms of agricultural sensitivity, the development should thus be allowed to proceed.

6.6.2 Financial incentive for agriculture

An agreement structure with financial incentives for agriculture between the applicant and the landowner(s), farmers by profession, should be considered. If the loss of agricultural land does not significantly impact food security or reduce arable land, diversifying income sources should be seen as positive for agriculture. Such an agreement could give landowners a share of the profit from the recharging facility, providing an income source independent of farm activities.

6.6.3 Permit requirements

The proposed development requires approval from the National Department of Agriculture, Land Reform and Rural Development (DALRRD) if the facility is on agriculturally zoned land. There are two approvals that apply:

1. A **No Objection Letter** for the change in land use. This letter is one of the requirements for receiving municipal rezoning. It is advisable to apply for this as early in the renewable development process as possible because not receiving this DALRRD approval is a fatal flaw for a project. Note that a positive Environmental Authorisation (EA) does not assure DALRRD's approval of this. This application requires a motivation backed by good evidence that the development is acceptable in terms of its impact on the agricultural production potential of the development site. An assessment report (Agricultural Compliance Statement) will serve that purpose.
2. A **Consent for long-term lease** in terms of the Subdivision of Agricultural Land Act (Act 70 of 1970) (SALA). If DALRRD approval for the development has already been

obtained in the form of the No Objection letter, then SALA approval should not present any difficulties. Note that SALA approval is not required if the lease is over the entire farm portion. SALA approval (if required) can only be applied for once the Municipal Rezoning Certificate and Environmental Authorisation has been obtained.

6.7 SOCIO-ECONOMIC IMPACT

6.7.1 Socio-economic Impact Statement and Conclusion

South Africa's socio-economic landscape faces challenges like unemployment and infrastructural gaps. The Estcourt Recharging Station aims to address these by integrating renewable energy into transportation, establishing solar-powered electric truck charging stations in regions like Kwa-Zulu Natal.

This initiative can create jobs, support sustainable development, and reduce carbon footprints, aligning with South Africa's sustainability goals. It can boost local economies through improved infrastructure and tourism. Although potential environmental impacts and disruptions require careful planning, no fatal flaws were identified. With proper mitigation and community engagement, the project can provide long-term benefits and contribute to South Africa's green transportation future.

6.7.2 Recommendations

Recommendations for the project include prioritizing local labour for unskilled and semi-skilled roles to boost employment and mitigate socio-economic challenges from non-local workers. Collaboration with local educational institutions for tailored training programs is also advised. Local suppliers should be prioritized in procurement processes to stimulate the local economy. Construction impacts like noise, dust, and traffic disturbances should be addressed with regular monitoring and interventions. A comprehensive safety and security plan should be implemented for construction and operation phases, addressing potential risks and emergency protocols. Open communication with the local community through a dedicated liaison officer is essential, providing updates, feedback sessions, and grievance mechanisms.

The project should align with best practices in socio-economic development, ensuring equitable benefit distribution, gender equality, and support for vulnerable groups. Partnerships with local businesses are encouraged to integrate project infrastructure, promoting local tourism and economic growth. These recommendations will help the project positively impact the local community and economy while minimizing negative effects.

7 DETAILS OF THE PUBLIC PARTICIPATION PROCESS

Interested and Affected Parties (I&APs) have been and will be identified throughout the process. Landowners adjacent to the proposed site, relevant organs of state, organisations, ward councillors and the Local and District Municipality were added to this database. A complete list of organisations and individual groups identified to date is shown in Appendix 4.

Public Participation will be conducted for the proposed development in accordance with the requirements outlined in Regulation 41 of the NEMA EIA Regulations 2014. The issues and concerns raised during the scoping phase will be dealt with in the EIA phase of this application.

As such each subsection of Regulation 41 contained in Chapter 6 of the NEMA EIA Regulations 2014 will be addressed separately to thereby demonstrate that all potential Interested and Affected Parties (I&AP's) were notified of the proposed development.

Table 11: Public participation process Regulations as per NEMA EIA Regulations, 2014 (as amended 2021)

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
Regulation 39 - Activity on land owned by person other than proponent		
1.	If the proponent is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorisation in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake such activity on that land.	Written consent of the landowner or person in control of the land to undertake the proposed activities on the land has been obtained through an established agreement.
2.	Subregulation (1) does not apply in respect of— a) linear activities; and	Noted. Not applicable to this proposed development.
	b) strategic integrated projects as contemplated in the Infrastructure Development Act, 2014.	Noted. Not applicable to this proposed development.
Regulation 40 - Purpose of public participation		
1.	The public participation process to which the— a) basic assessment report and EMPr, and the closure plan in the case of a closure activity, submitted in terms of regulation 19; and	As part of the pre-application Scoping phase, a 30-day commenting period occurred between 10 November 2023 and 14 December 2023. All potential or registered interested and affected parties, including the competent authority were invited and allowed to submit comments regarding the proposed development.
	b) scoping report submitted in terms of regulation 21, the environmental impact assessment report, EMPr, and the closure plan in the case of a closure activity, submitted in terms of regulation 23; was subjected to must give all potential or registered interested and affected parties, including the competent authority, a period of at least 30 days to submit comments on each of the basic assessment report, EMPr, scoping report and environmental impact assessment report, and the closure plan in the case of a closure activity, as well as the report contemplated in regulation 32, if such reports or plans are submitted at different times.	
2.	The public participation process contemplated in this regulation must provide access to all information that reasonably has or may have the potential to influence any decision with regard to an application unless access to that information is protected by law and must include consultation with — a) the competent authority;	As part of the pre-application Scoping phase, initial notification letter were sent to — a) The KwaZulu-Natal Department of Economic Development and Environmental Affairs (KZN EDTEA), identified as the competent authority.
	b) every State department that administers a law relating to a matter affecting the environment relevant to an application for an environmental authorisation;	

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
	c) all organs of state which have jurisdiction in respect of the activity to which the application relates; and	b & c) The following state departments that administers a law relating to a matter affecting the environment relevant to an application and organs of state that have jurisdiction in respect of the activity to which the application relates: - Department of Agriculture and Rural Development - Co-operative Governance and Traditional Affairs - Eskom - Department of Energy - Department of Water and Sanitation - KZN AMAFA and Research Institute - Department of Public Works - Department of Transport - N3 Toll concession - SANRAL - Transnet - Ezemvelo KZN Wildlife d) All potential, or, where relevant, registered interested and affected parties. These initial notification letters were sent to inform the parties described above about the proposed activity/development and to invite their input.
	d) all potential, or, where relevant, registered interested and affected parties.	

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
3.	Potential or registered interested and affected parties, including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in subregulation (1) prior to submission of an application but must be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority.	During the pre-application Scoping phase, potential or registered interested and affected parties, including the competent authority were notified and given the opportunity to comment on the proposed development. However, no reports or plans, as outlined in subregulation (1), were available at that time Nevertheless, an opportunity for potential or registered interested and affected parties, including the competent authority to comment on such reports and plans will be given once an application has been submitted to the competent authority.
Regulation 41 – Public participation process		
1.	This regulation only applies in instances where adherence to the provisions of this regulation is specifically required.	Noted.
2.	The person conducting a public participation process must take into account any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of an application or proposed application which is subjected to public participation by— a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of — i. the site where the activity to which the application or proposed application relates is or is to be undertaken; and	During the pre-application Scoping phase an English and an isiZulu A2 sized notice board was fixed on the boundary / fence of the site where the activity to which the proposed application relates is to be undertaken. Additionally, multiple English and isiZulu A3 sized notice boards were placed at various locations around the site.
	ii. any alternative site	There is no alternative site.
	b) giving written notice, in any of the manners provided for in section 47D of the Act, to— i. the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken	As part of the pre-application Scoping phase, initial notification letters were sent to occupiers and persons in control of the site via email and/or mail drops conducted during the site visit.
	ii. owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken	As part of the pre-application Scoping phase, initial notification letters were sent to occupiers of land adjacent to the site via email and/or mail drops conducted during the site visit.

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
	iii. the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area	As part of the pre-application Scoping phase, an initial notification letter was sent to the relevant municipal ward councillor at the Inkosi Langaibalele Local Municipality. No ratepayer organisation were identified for the community in the area.
	iv. the municipality which has jurisdiction in the area	As part of the pre-application Scoping phase, an initial notification letter was sent to a representative of the Inkosi Langaibalele Local Municipality and the uThukela District Municipality.
	v. any organ of state having jurisdiction in respect of any aspect of the activity; and	As part of the pre-application Scoping phase, initial notification letters were sent to the following organs of state having jurisdiction in respect of any aspect of the activity: - Department of Agriculture and Rural Development - Co-operative Governance and Traditional Affairs - Eskom - Department of Energy - Department of Water and Sanitation - KZN AMAFA and Research Institute - Department of Public Works - Department of Transport - N3 Toll concession - SANRAL - Transnet - Ezemvelo KZN Wildlife
	vi. any other party as required by the competent authority	Noted. Should the competent authority require any other party to receive written notice, then this will be duly carried out.
	c) placing an advertisement in— i. one local newspaper; or	An English and isiZulu advertisement was placed in the Estcourt News, a local newspaper, on 10 November 2023.

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
	ii. any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;	Noted. Not applicable to this proposed development.
	d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in paragraph (c) (ii); and	Noted. Not applicable to this proposed development.
	e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to — i. illiteracy;	Noted. In instances where a person desires to participate in the process but is unable to do so due to illiteracy, disability, or any other disadvantage, and make such a desire known to the EAP, then reasonable alternative methods will be used, as agreed upon by the competent authority.
	ii. disability; or	
	iii. any other disadvantage	
3.	A notice, notice board or advertisement referred to in subregulation (2) must— a) give details of the application or proposed application which is subjected to public participation; and	The written notices — specifically, notification letters, notice boards, and advertisements — that form part of the pre-application Scoping phase's 30-day commenting period, contain details of the proposed application, which is subject to public participation.
	b) state — i. whether basic assessment or S&EIR procedures are being applied to the application;	
	ii. the nature and location of the activity to which the application relates;	
	iii. where further information on the application or proposed application can be obtained; and	
	iv. the manner in which and the person to whom representations in respect of the application or proposed application may be made.	
4.	A notice board referred to in subregulation (2) must— a) be of a size of at least 60cm by 42cm; and	The notice boards measured 60cm by 42cm is size and displayed the required information in a legible format.
	b) display the required information in lettering and in a format as may be determined by the competent authority.	

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
5.	Where public participation is conducted in terms of this regulation for an application or proposed application, subregulation (2) (a), (b), (c) and (d) need not be complied with again during the additional public participation process contemplated in regulations 19 (1) (b) or 23 (1) (b) or the public participation process contemplated in regulation 21 (2) (d), on condition that— a) such process has been preceded by a public participation process which included compliance with subregulation (2) (a), (b), (c) and (d); and	Noted.
	b) written notice is given to registered interested and affected parties regarding where the— i. revised documents as contemplated in regulation 19 (1) (b);	Noted.
	ii. revised documents as contemplated in regulation 23 (1) (b); or	Noted.
	iii. environmental impact assessment report and documents as contemplated in regulation 21 (2) (d); may be obtained, the manner in which and the person to whom representations on these reports or plans may be made and the date on which such representations are due.	Noted.
6.	When complying with this regulation, the person conducting the public participation process must ensure that— a) information containing all relevant facts in respect of the application or proposed application is made available to potential interested and affected parties; and	Noted.
	b) participation by potential or registered interested and affected parties is facilitated in such a manner that all potential or registered interested and affected parties are provided with a reasonable opportunity to comment on the application or proposed application.	Noted.
7.	Where an environmental authorisation is required in terms of these Regulations and an authorisation, permit or licence is required in terms of a specific environmental management Act, the public participation process contemplated in this Chapter may be combined with any public participation processes prescribed in terms of a specific environmental management Act, on condition that all relevant authorities agree to such combination of processes.	Noted.

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
Regulation 42 - Register of interested and affected parties		
1.	A proponent or applicant must ensure the opening and maintenance of a register of interested and affected parties and submit such a register to the competent authority, which register must contain the names, contact details and addresses of— a) all persons who, as a consequence of the public participation process conducted in respect of that application, have submitted written comments or attended meetings with the proponent, applicant or EAP;	A register of interested and affected parties was opened and is maintained.
	b) all persons who have requested the proponent or applicant, in writing, for their names to be placed on the register; and	
	c) all organs of state which have jurisdiction in respect of the activity to which the application relates.	
Regulation 43 - Registered interested and affected parties entitled to comment on reports and plans		
1.	A registered interested and affected party is entitled to comment, in writing, on all reports or plans submitted to such party during the public participation process contemplated in these Regulations and to bring to the attention of the proponent or applicant any issues which that party believes may be of significance to the consideration of the application, provided that the interested and affected party discloses any direct business, financial, personal or other interest which that party may have in the approval or refusal of the application.	This subregulation is communicated to registered interested and affected parties during the public participation process.
2.	In order to give effect to section 24O of the Act, any State department that administers a law relating to a matter affecting the environment must be requested, subject to regulation 7 (2), to comment within 30 days.	State departments that administer laws relating to environmental matters relevant to the application, as well as organs of state with jurisdiction over the activity, were notified of the proposed application and invited to comment within 30 days. However, should comments not be received within the prescribed timeframes, it would be assumed that no comments are forthcoming.
Regulation 44 - Comments of interested and affected parties to be recorded in reports and plans		

Sub	Regulations of Chapter 6 of NEMA EIA Regulations, 2014 (as amended 2021)	Applicability to the development
1.	The applicant must ensure that the comments of interested and affected parties are recorded in reports and plans and that such written comments, including responses to such comments and records of meetings are attached to the reports and plans that are submitted to the competent authority in terms of these Regulations.	Comments of interested and affected parties are recorded together with the responses in a Comment and Response report (CRR) and where applicable, incorporated into reports and plans.
2.	Where a person desires but is unable to access written comments as contemplated in subregulation due to— a) a lack of skills to read or write; b) disability; or c) any other disadvantage; reasonable alternative methods of recording comments must be provided for.	Noted. Where a person desires to but is unable to access written comments due to illiteracy, disability, or any other disadvantage, and make such a desire known to the EAP, then reasonable alternative methods of recording comments will be provided for.

8 PLAN OF STUDY FOR THE EIA

8.1 TASKS TO BE UNDERTAKEN

Due to the nature of the proposed development, there are a number of activities that will still need to be undertaken during the next phase of the project. The proposed process is as described as follows (this follows from a Scoping process to be accepted by the KwaZulu-Natal Department of Economic Development and Environmental Affairs (KZNEDTEA)):

The NEMA application form will be submitted to KZNEDTEA along with the Draft Scoping Report which will also be made available for viewing and comment for a 30-day comment period. Comments received during the Public Participation Process will be incorporated into the Final Scoping Report, to be submitted to KZNEDTEA for a decision.

The following is a list of tasks to be performed as part of the EIA Process. Should the process be modified significantly, changes will be copied to KZNEDTEA.

Table 12: EIA process – Timeline*

EIA Process	
Task	**Timeframes**
Submit NEMA Application and Draft Scoping Report (DSR) and Plan of Study for EIA to KZNEDTEA and distribute to registered I&APs for comment.	February 2025
Submit Final Scoping Report (FSR) and Plan of Study to KZNEDTEA for a decision.	March 2025
Receive approval for the FSR and the Plan of Study for EIA.	April 2025
Undertake/further specialist studies and compile the Draft Environmental Impact Report (EIR) for public comment based on specialist information.	May 2025
Submit Draft EIR for public comment.	June 2025
Receive responses to the Draft EIR.	July 2025
Preparation of a FINAL EIR and submission to KZNEDTEA	June 2025

**Timeframes provided are estimates and are subject to change. They serve as a tentative indication and may be adjusted as the process progresses.*

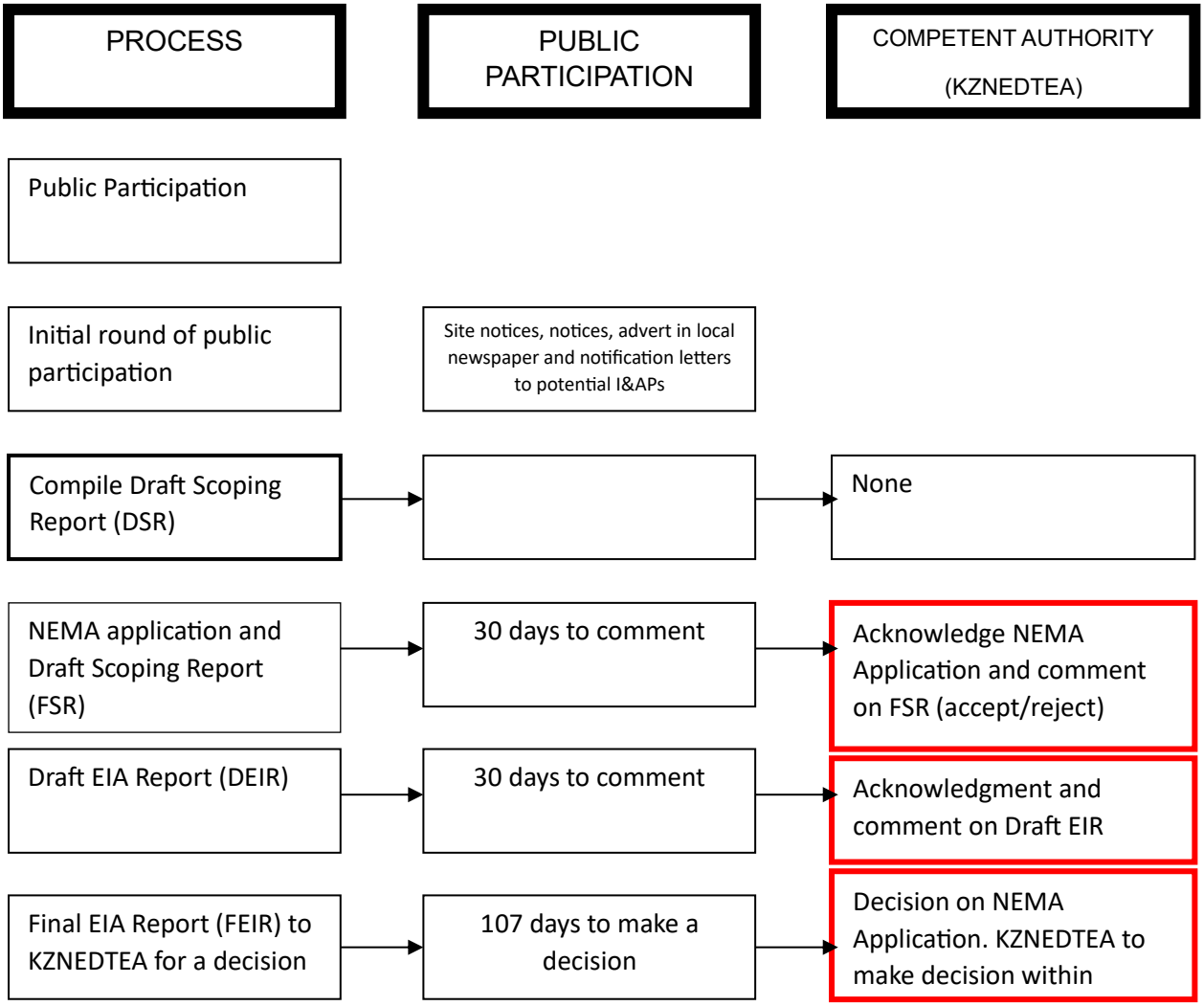


Figure 30: Summary of the EIA process and public participation process. The red indicates the stages where the competent authority will be consulted during the process

8.2 PUBLIC PARTICIPATION AND INTERESTED AND AFFECTED PARTIES

Please refer to Figure 30 to see where the public participation process is present in the environmental impact assessment. The Interested and Affected Parties will have a chance to view and comment on all the reports that are submitted. The figures also indicated what timeframes are applicable to what stage in the process. If required, meetings with key stakeholders will be held.

At the end of the comment period, the EIR will be revised in response to feedback received from I&APs. All comments received and responses to the comments will be incorporated into the Final Environmental Impact Report (EIR). The Final EIR will then be submitted to KZNEDTEA for consideration and decision-making.

Correspondence with I&APs will be via post, fax, telephone, email and/or newspaper advertisements. Should it be required, this process may be adapted depending on input received during the on-going process and as a result of public input. KZNEDTEA will be informed of any changes in the process.

8.3 CRITERIA FOR SPECIALIST ASSESSMENT OF IMPACTS

As a result of the environmental issues and potential impacts identified in Section 6, the need for the following specialist studies has been identified:

- Biodiversity Assessment
- Freshwater Assessment
- Heritage Impact Assessment
- Socio-economic Impact Assessment
- Visual Impact Assessment
- Agricultural Potential Assessment
- Avifauna Impact Assessment

These specialist studies have been conducted and some have been concluded. The findings of some the studies have already been included in this report, however, the studies will be finalised and the findings included during the EIA phase.

The impacts of the proposed activity on the various components of the receiving environment will be evaluated in terms of duration (time scale), extent (spatial scale), magnitude and significance as outlined in Table 13. These impacts could either be positive or negative. This includes an assessment of the alternatives, including the option of not proceeding with the proposed development (see Section 4).

The magnitude of an impact is a judgment value that rests with the individual assessor while the determination of significance rests on a combination of the criteria for duration, extent and magnitude. Significance thus is also a judgment value made by the individual assessor.

In addition to determining the individual impacts against the various criteria, the element of mitigation, where relevant, will also be brought into the assessment. In such instances the impact will be assessed with a statement on the mitigation measure that could/should be applied. An indication of the certainty of a mitigation measure considered, achieving the end result to the extent indicated, is given on a scale of 1-5 (1 being totally uncertain and 5 being absolutely certain), taking into consideration uncertainties, assumptions and gaps in knowledge. Cognisance of the minimum report content requirements of the various specialist assessment as per the Assessment Protocols (Government Notice 320, Government Gazette No. 43110 of 20 March 2020).

Table 13: Criteria used for evaluating impacts

Criteria	Category
Nature of impact	This is an evaluation of the effect that the construction, operation and maintenance of a proposed dam would have on the affected environment. This description should include what is to be affected and how.
Duration (Predict whether the lifetime of the Impact will be temporary (less than 1 year) short term (0 to 5 years); medium term (5 to 15 years); long term (more than 15 years, with the Impact ceasing after full implementation of all development	**Temporary:** < 1 year (not including construction) **Short-term:** 1 – 5 years **Medium term:** 5 – 15 years **Long-term:** >15 years (Impact will stop after the operational or running life of the activity, either due to natural course or by human interference) **Permanent:** Impact will be where mitigation or moderation by natural course or by human interference will not occur in a particular means or in a particular time period that the impact can be considered temporary

Criteria	Category
components with mitigations); or permanent.	
Extent (Describe whether the impact occurs on a scale limited to the site area; limited to broader area; or on a wider scale)	**Site Specific:** Expanding only as far as the activity itself *(onsite)* **Small:** restricted to the site's immediate environment within 1 km of the site *(limited)* **Medium:** Within 5 km of the site *(local)* **Large:** Beyond 5 km of the site *(regional)*
Intensity (Describe whether the magnitude (scale/size) of the Impact is high; medium; low; or negligible. The specialist study must attempt to quantify the magnitude of impacts, with the rationale used explained)	**Very low:** Affects the environment in such a way that natural and/or social functions/processes are not affected **Low:** Natural and/or social functions/processes are slightly altered **Medium:** Natural and/or social functions/processes are notably altered in a modified way **High:** Natural and/or social functions/processes are severely altered and may temporarily or permanently cease
Probability of occurrence Describe the probability of the Impact actually occurring as definite (Impact will occur regardless of mitigations	**Improbable:** Not at all likely **Probable:** Distinctive possibility **Highly probable:** Most likely to happen **Definite:** Impact will occur regardless of any prevention measures
Status of the Impact Describe whether the Impact is positive, negative (or neutral).	**Positive:** The activity will have a social/ economical/ environmental benefit **Neutral:** The activity will have no affect **Negative:** The activity will be socially/ economically/ environmentally harmful
Degree of Confidence in predictions State the degree of confidence in predictions based on availability of information and specialist knowledge	**Unsure/Low:** Little confidence regarding information available (<40%) **Probable/Med:** Moderate confidence regarding information available (40-80%) **Definite/High:** Great confidence regarding information available (>80%)
Significance (The impact on each component is determined by a combination of the above criteria and defined as follows) The significance of impacts shall be assessed with and without mitigations. The significance of identified impacts on components of the affected biophysical or socio-economic environment (and, where relevant, with respect to potential legal requirement/s) shall be described as follows:	**No change:** A potential concern which was found to have no impact when evaluated **Very low:** Impacts will be site specific and temporary with no mitigation necessary. **Low:** The impacts will have a minor influence on the proposed development and/or environment. These impacts require some thought to adjustment of the project design where achievable, or alternative mitigation measures **Moderate:** Impacts will be experienced in the local and surrounding areas for the life span of the development and may result in long term changes. The impact can be lessened or improved by an amendment in the project design or implementation of effective mitigation measures. **High:** Impacts have a high magnitude and will be experienced regionally for at least the life span of the development, or will be irreversible. The impacts could have the no-go proposition on portions of the development in spite of any mitigation measures that could be implemented.

Table 14: The stated assessment and information will be determined for each individual issue or related groups of issues and presented in descriptive format in the following table example or a close replica thereof

Impact Statement:		
Mitigation:		
Ratings	Duration	
	Extent	
	Intensity	
	Probability of impact	
	Status of Impact (Positive/negative)	
	Degree of confidence	
Significances	Significance **without** Mitigation	
	Significance ***WITH*** Mitigation	
Indication of the certainty of a mitigation measure considered, achieving the end result to the extent indicated, is given on a scale of 1-5 (1 being totally uncertain and 5 being absolutely certain), taking into consideration uncertainties, assumptions and gaps in knowledge:		
Legal Requirements (Identify and list the specific legislation and permit requirements which are relevant to this development):		

9 CONCLUSION AND RECOMMENDATIONS

A scoping exercise is being undertaken to present the proposed activities to the I&APs and to identify environmental issues discussed in this report and concerns raised as a result of the proposed development alternatives to date. The issues and concerns were raised by I&APs, authorities, the project team as well as specialist input, based on baseline studies undertaken.

This pre-application Draft Scoping Report, being undertaken in terms of NEMA, summarises the process undertaken, the alternatives presented, and the issues and concerns raised.

As a result of the above, the need for the following specialist studies, have been identified:

- Biodiversity Assessment
- Freshwater Assessment
- Heritage Impact Assessment
- Socio-economic Impact Assessment
- Visual Impact Assessment
- Agricultural Potential Assessment
- Avifauna Impact Assessment

These specialist studies have been conducted and some have been concluded. The findings of some the studies have already been included in this report, however, the studies will be finalised and the findings included during the EIA phase.

Any further issues raised as a result of the Public Participation Process will be dealt with during the EIA phase. The significance of the impacts associated with the alternatives proposed will be assessed in these specialist studies, as part of the EIA. Once the specialist studies have been completed, they will be summarised in an Environmental Impact Report (EIR), which integrates the findings of the assessment phase of the EIA.

Based on the significance of the issues raised during the ongoing Public Participation Process and Scoping Phase, it is evident that an Environmental Impact Assessment (EIA) is required. ***It is therefore recommended that authorisation for the commencement of an EIA for the proposed development is granted.*** Should the EIA process be authorised, the issues raised in the process to date will be addressed and the specialist studies noted in this report, will be undertaken.

9.1 PRELIMINARY RECOMMENDATIONS / CONDITIONS FOR AUTHORISATION

- In cases where there is not a significant impact on agricultural land, a diversification of income sources should be considered by the landowner(s). Through establishing an agreement between the applicant and the landowner(s); landowner(s) will be enabled to share in the profit generated from the facility, thereby offsetting their probable financial loss sustained through the loss of agricultural land (utilised or grazing mainly) over the development area.

10 DETAILS AND EXPERTISE OF THE EAP

Author / Compiler	Lian Roos
Qualifications	BSc Hons (App Sci) Water Utilisation (UP) BSc Environmental Science (UP)
Registrations	EAPASA Candidate EAP (2022/4550) SACNASP Pr. Sci. Nat (151023)
Expertise	Lian Roos has over 5 years of experience as an Environmental Consultant and Assessment Practitioner in environmental monitoring, management and assessment in various industries ranging from mining and industrial to agricultural and renewable. His expertise includes, but are not limited to: - Environmental Authorisation applications - Water Use Licence applications - Waste Management Licence applications - Prospecting Right, Mining Permit & Right applications - Integrated Water and Waste Management plans - Rehabilitation, Decommissioning and Mine Closure plans - Environmental Due Diligence & Gap Analyses - Environmental Monitoring & Compliance

Reviewer / Supervisor	Clinton Geyser
Qualifications	MSc. Geography and Environmental Management (2002) (UJ) BSc. (hons): Geography and Environmental Management (2001) (UJ) BSc. Earth Sciences, Majors in Geology and Geography and Environmental Management (1998 – 2000) (UJ)
Registrations	EAPASA Reg no. 2021/3287
Expertise	Clinton Geyser has over fifteen years' experience in the environmental management field as an Environmental Assessment Practitioner and as an Environmental Control Officer, having worked on a variety of projects in the Western, Eastern and Northern Cape. Previous completed applications include, but not limited to: - Civil engineering infrastructure including pipelines, Waste Water Treatment Works, and roads in the Western and Northern Cape. - Solar PV facilities in the Free State and Western Cape - Agricultural developments, including reservoirs and dams, in the Western, Eastern and Northern Cape. - Telecommunications masts in the Western and Eastern Cape - Housing Developments in the Western and Northern Cape. - Resort developments in the Western and Northern Cape. - Cemeteries in the Western Cape - Waste Management Licences in the Western Cape

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