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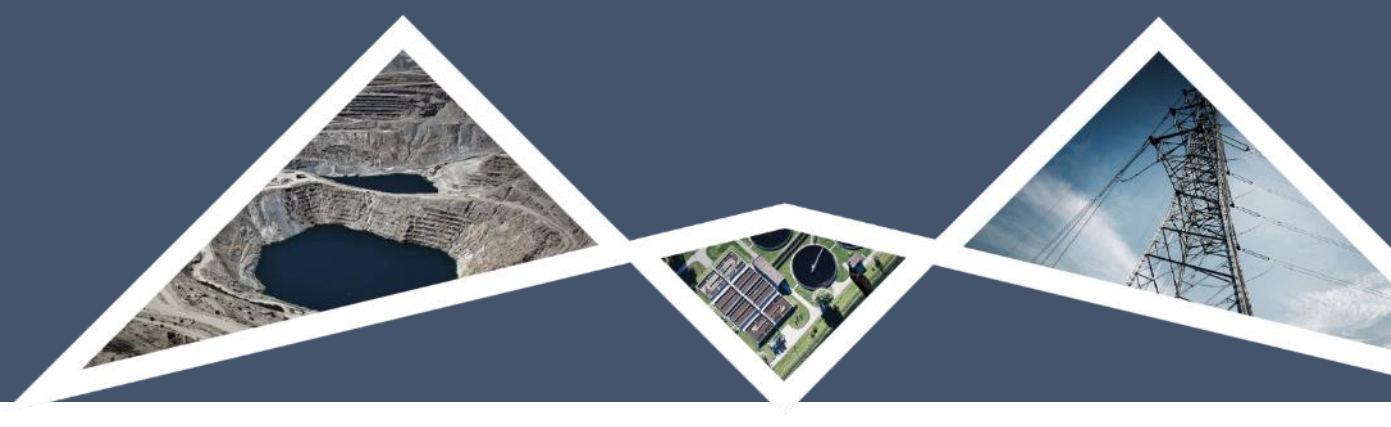
T 011 789 7170 E info@eims.co.za W www.eims.co.za

BASIC ASSESSMENT REPORT

NTCSA DELPHI 400/132KV SUBSTATION EXPANSION, NEAR KOMANI IN THE ENOCH MGIJIMA LOCAL MUNICIPALITY, EASTERN CAPE

APPLICANT: NATIONAL TRANSMISSION COMPANY SOUTH AFRICA (NTCSA)

DFFE REFERENCE NO: *(TO BE CONFIRMED)*



DOCUMENT DETAILS

EIMS REFERENCE:	1627
DOCUMENT TITLE:	NTCSA Delphi 400/132kV Substation Expansion, near Komani in the Enoch Mgijima Local Municipality, Eastern Cape – Basic Assessment Report

DOCUMENT CONTROL

	NAME	SIGNATURE	DATE
COMPILED:	Qaphela Magaqa		2024/07/30
CHECKED:	Brian Whitfield		2024/07/30
AUTHORIZED:	Liam Whitlow		2024/07/30

REVISION AND AMENDMENTS

REVISION DATE:	REV #	DESCRIPTION
2024/07/30	ORIGINAL DOCUMENT	Basic Assessment Report for Public Review

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LIST OF ACRONYMS

AIP	Alien Invasive Plant
BA	Basic Assessment
BAR	Basic Assessment Report
BW	Bid Window
CBA	Critical Biodiversity Area
CBO	Community Based Organisation
CI	Cumulative Impact
CR	Critically Endangered
CRM	Cultural Resource Management
CSIR	Council for Scientific and Industrial Research
CV	Curriculum Vitae
DFA	Development Facilitation Act
DFFE	Department of Forestry, Fisheries and the Environment
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practioners Association of South Africa
ECA	Environmental Conservation Act
ECBCSAP	Eastern Cape Biodiversity Conservation Strategy and Action Plan
ECO	Environmental Control Officer
EGI	Electric Grid Infrastructure
EIA	Environmental Impact Assessment
EIMS	Environmental Impact Management Services
EIR	Environmental Impact Report
ELWU	Existing Lawful Water User
EMPr	Environmental Management Programme
EN	Endangered
ER	Environmental Risk
ESA	Ecological Support Areas
ESO	Environmental Site Officer
GA	General Authorisation
GEMP	Generic Environmental Management Programme
GIS	Geographical Information System
GN	Government Notice
GPS	Geographic Positioning System
HIA	Heritage Impact Assessment
HIV	Human Immunodeficiency Virus
I&AP	Interested and Affected Parties
IDP	Industrial Development Plan
IEM	Integrated Environmental Management
IFC	International Finance Corporation
IUCN	International Union for Conservation of Nature
JET	Just Energy Transition
LC	Least Concern
LED	Local Economic Development Plan
LR	Irreplaceable Loss of Resources

MP	Moderately Protected
MPRDA	Mineral and Petroleum Resources Development Act
MVA	Megavolt-Amperes
MW	Megawatts
NEMA	National Environmental Management Act
NEMBA	National Environmental Management: Biodiversity Act
NFEPA	National Freshwater Ecosystem Priority Areas
NGO	Non-Governmental Organisation
NHRA	National Heritage Resources Act
NNR	Natural Habitat Remaining
NP	Not Protected
NT	Not Threatened
NTCSA	National Transmission Company of South Africa
NWA	National Water Act
ONA	Other Natural Areas
PA	Protected Areas
PAOI	Project Area of Influence
PF	Priority Factor
PIA	Palaeontology Impact Assessment
PP	Poorly Protected
PPP	Public Participation Process
PV	Photovoltaic
RE	Renewable Energy
REDZ	Renewable Energy Development Zone
SACNASP	South African Council for Natural Scientific Professions
SAHRA	South African Heritage Resource Act
SAIIAE	South African Inventory of Inland Aquatic Ecosystems
SANBI	South African National Biodiversity Institute
SCC	Species of Conservation Concern
SDF	Spatial Development Framework
SEA	Strategic Environmental Assessment
SIP	Strategic Infrastructure Project
TBC	The Biodiversity Company (Pty) Ltd
TDP	Transmission Development Plan
VU	Vulnerable
WP	Well Protected
WUL	Water Use License
WULA	Water Use License Authorisation

PART A: SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1 INTRODUCTION

The National Transmission Company of South Africa SOC Limited (NTCSA) (hereafter referred to as the Applicant) has appointed Environmental Impact Management Services (Pty) Ltd (EIMS) as the Environmental Assessment Practitioner (EAP) to assist with undertaking the required authorisation processes (including the statutory public participation), and to compile and submit the required documentation in support of application for:

- Environmental Authorisation (EA) in accordance with the National Environmental Management Act - Act 107 of (NEMA) of - Listed activities detailed in subsection 2.2 of this report.
- Water Use Licence (WUL) in accordance with the National Water Act – NWA (Act 36 of 1998) - Listed activity/ies:
    - Section 21 (c) and (i);
    - Section 21 (g)

The Applicant wishes to expand the existing NTCSA Delphi Substation to make provision to connect an additional 300 MW to the 100 MW which has already been approved up to Bid Window 5 (BW5). As such, an expansion of the 400kV and 132kV bays are required. The project will involve the extension of the existing 400 kV yard by one bay, installation of a 400/132 kV 500 MVA transformer, extension of 132kV yard by seven bays, equipment of one 132kV transformer bay, relocation of the existing oil dam, and access road extension. This project forms part of an initiative to unlock grid capacity by connecting renewable energy generation by year 2027. The Eskom 2022 Transmission Development Plan (TDP) generation assumptions forecasts that 31 095 MW of PV and wind generation will be required nationally by 2030 of which 16 604 MW will be required as early as 2027. Currently there is limited or no capacity available in many of the Transmission supply areas.

The proposed project is located on Portion 3 of the farm Carthcarts Gift 311, within the Enoch Mgijima Local Municipality, Eastern Cape Province. The site is approximately 14km southwest of Komani along the R67. The centre point of the site is 32° 0'41.18"S and 26°48'30.22"E. Please refer to attached project locality map.

The Public Participation Process (PPP) as required by Regulation 41(2) of the EIA Regulations, 2014 as amended has commenced. To date the following PPP has been conducted:

- Initial call to register:
    - Newspaper Advertisement: Placement of advertisement in English and isiXhosa in the Daily Dispatch;
    - Placement of site notices: Placement of 4 A1 Correx site notices in English and IsiXhosa at locations along, within and surrounding the perimeter of the proposed project study area;
    - Notification of landowners, occupiers and other key I&APs: Notification letters, were distributed to pre-identified I&APs through either email, fax, and/or registered mail where contacts were available.

The BAR will be made available to Interested and Affected Parties (I&APs) for comment for a minimum period of 30 days from the 02nd of August 2024. All comments received during this period will be included in the BAR for submission to the Department of Forestry, Fisheries and the Environment for their decision-making process.

1.1 REPORT STRUCTURE

This report has been compiled in accordance with the EIA Regulations, 2014 (Government Notice (GN) R982). A summary of the report structure, and the specific sections that correspond to the applicable regulations, is provided in Table 1 below.

Table 1: Report Structure

Environmental Regulation NEMA EIA Regulations, 2014	Description	Section in Report
Appendix 1(3)(1)(a):	Details of – i) The EAP who prepared the report; and ii) The expertise of the EAP, including a curriculum vitae;	Section 1.2 Section 1.3
Appendix 1(3)(1)(b):	The location of the activity, including: i) The 21-digit Surveyor General code of each cadastral land parcel; ii) Where available, the physical address and farm name; and iii) Where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section 1.4
Appendix 1(3)(1)(c):	A plan which locates the proposed activity, or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is – i) A linear activity, a description, and coordinates of the corridor in which the proposed activity or activities is to be undertaken; ii) On land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Section 1.4
Appendix 1(3)(1)(d):	A description of the scope of the proposed activity, including – i) All listed and specified activities triggered and being applied for; and ii) A description of the activities to be undertaken including associated structures and infrastructure;	Section 2
Appendix 1(3)(1)(e):	A description of the policy and legislative context within which the development is proposed including –	Section 3

Environmental Regulation NEMA EIA Regulations, 2014	Description	Section in Report
	i) An identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and ii) How the proposed activity complies with and responds to the legislation and policy context plans, guidelines, tools frameworks, and instruments;	
Appendix 1(3)(1)(f):	A motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred location;	Section 4
Appendix 1(3)(1)(g):	A motivation for the preferred site, activity, and technology alternative;	Section 5
Appendix 1(3)(1)(h):	A full description of the process followed to reach the proposed alternative within the site, including: i) Details of all the alternatives considered; ii) Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; iii) A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; iv) The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage, and cultural aspects; v) The impacts and risks identified for each alternative including the nature, significance, consequence, extent, duration, and probability of the impacts, including the degree to which these impacts – aa) Can be reversed; bb) May cause irreplaceable loss of resources; and cc) Can be avoided, managed, or mitigated; The methodology used in determining and ranking the nature, significance, consequences, extent duration and probability of potential environmental impacts and risks associated with the alternatives; Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological social, economic, heritage and cultural aspects; The possible mitigation measures that could be applied and level of residual risk; The outcome of the site selection matrix;	Section 5 Section 6 Section 6.2 Section 7 Section 9

Environmental Regulation NEMA EIA Regulations, 2014	Description	Section in Report
	If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and A concluding statement indicating the preferred alternatives, including preferred location of the activity;	
Appendix 1(3)(1)(i):	A full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including – i) A description of all environmental issues and risks that were identified during the environmental impact assessment process; and ii) An assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	Section 9 Appendix F
Appendix 1(3)(1)(j):	An assessment of each identified potentially significant impact and risk, including – i) Cumulative impacts; ii) The nature, significance and consequence of the impact and risk; iii) The extent and duration of the impact and risk; iv) The probability of the impact and risk occurring; v) The degree to which the impact and risk can be reversed; vi) The degree to which the impact and risk may cause irreplaceable loss of resources; and vii) The degree to which the impact and risk can be mitigated;	Section 9
Appendix 1(3)(1)(k):	Where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	Section 8
Appendix 1(3)(1)(l):	An environmental impact statement which contains – i) A summary of the key findings of the environmental impact assessment; ii) A map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicting any areas that should be avoided, including buffers; and	Section 10 Section 10.8

Environmental Regulation NEMA EIA Regulations, 2014	Description	Section in Report
	iii) A summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	
Appendix 1(3)(1)(m):	Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr;	Section 10
Appendix 1(3)(1)(n):	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	Section 10.7
Appendix 1(3)(1)(o):	A description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section 11
Appendix 1(3)(1)(p):	A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Section 10
Appendix 1(3)(1)(q):	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, and the date on which the activity will be concluded, and the monitoring requirements finalised;	Section N/A
Appendix 1(3)(1)(r):	An undertaking under oath or affirmation by the EAP in relation to: i) The correctness of the information provided in the reports; ii) The inclusion of comments and inputs from stakeholders and I&Ps; iii) The inclusion of inputs and recommendations from the specialist reports where relevant; and iv) Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties;	Section 12
Appendix 1(3)(1)(s):	Where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A
Appendix 1(3)(1)(t):	Any specific information that may be required by the competent authority; and	Section N/A
Appendix 1(3)(1)(u):	Any other matters required in terms of section 24(4)(a) and (b) of the Act.	Section N/A

1.2 DEATAILS OF EIMS AND THE EAP

EIMS was appointed by the Applicant to fulfil the role of Environmental Assessment Practitioner (EAP) to compile this report. EIMS is a private and independent environmental management-consulting firm that was founded in 1993. EIMS has in excess of 30 years' experience in conducting EIAs, including many EIAs for electric infrastructure related projects.

In terms of Regulation 13 of the EIA Regulations, 2014, an independent EAP, must be appointed by the applicant to manage the application. EIMS has been appointed by the Applicant to fulfil the role of the EAP and the relevant consultants at EIMS are compliant with the definition of an EAP as defined in Regulations 1 and 13 of the EIA Regulations and Section 1 of the NEMA. This includes, inter alia, the requirement that the EAP is:

- Objective and independent;
- Has expertise in conducting EIA's;
- Comply with the NEMA, the Regulations and all other applicable legislation;
- Takes into account all relevant factors relating to the application; and
- Provides full disclosure to the applicant and the relevant environmental authority.

The contact details of the EAP's who compiled the report are as follows:

Table 2: EAP Details

Name of Practitioner	**Mr Brian Whitfield (Project Manager/EAP)**	**Mr Qaphela Magaqa (Report Compilation/Candidate EAP)**
Tel No.:	011 789 7170	011 789 7170
Fax No.:	086 571 9047	086 571 9047
E-mail:	delphi@eims.co.za	delphi@eims.co.za

1.3 EXPERTISE OF THE EAP

1.3.1 QUALIFICATIONS AND EXPERIENCE OF THE EAP

Mr Brian Whitfield is a senior project manager at EIMS and has over 19 years of experience in environmental consulting. He holds a BSc (Botany and Zoology) and a BSc Honours degree in Botany from the University of the Witwatersrand. Brian's broad range of experience includes managing and/or undertaking projects in various sectors, including Energy, Electric Infrastructure, Water and Infrastructure. He is conversant with the South African environmental legislation as well as sustainability auditing, including Equator Principles, International Finance Corporation (IFC) Performance Standards and World Bank Environmental Health and Safety guidelines. Brian's other experience includes Site Assessments, Water-use licensing, Environmental Monitoring and Auditing, Due Diligence Assessments, Competent Persons Reporting, Environmental Management Plans and Strategic Environmental Assessments.

Mr Qaphela Magaqa holds a BSc (Honours) degree in Geographical Information Systems and a BSc (majors in Geology and Geography). He is an Environmental Consultant with 4 years' experience. His expertise lies in environmental management, reporting, GIS, compliance auditing, public participation, and waste management. Mr. Magaqa is currently involved in various projects which include undertaking and managing various ongoing projects, GIS mapping, environmental compliance monitoring, Water Use License Applications (WULA) and environmental authorisation projects. He is an EAPASA registered candidate Environmental Assessment Practitioner (2022/6016) and SACNASP Registered Certificated Natural Scientist (148967).

The declaration of independence of the EAP and the Curriculum Vitae (indicating the experience with environmental impact assessment and relevant application processes) of the consultants that were involved in the BAR process and the compilation of this report are attached as Appendix A.

1.4 LOCATION OF THE OVERALL ACTIVITY

Table 3 below provides details on the location of the proposed development area. The proposed expansion area is located on an Eskom/NTCSA owned property/ farm, portion 3 of Carthcarts Gift (Farm 311). The Delphi substation will be expanded by an estimated 15 600 m^2 (1.56 Ha).

Table 3: Locality Details

Farm Name (s)	Portion 3 of Carthcarts Gift 311
Application Area (Ha)	1.56 Ha
Province	Eastern Cape
Local Municipality	Enoch Mgijima Local Municipality
Magisterial District	Chris Hani Magisterial District
Distance and direction from nearest town	The proposed expansion area is located 14km Southwest of Komani, along the R67.
21-digit Surveyor General Code for each Portion	C06200000000031100003

Refer to

Figure 3 for a map showing the location of the proposed expansion area.

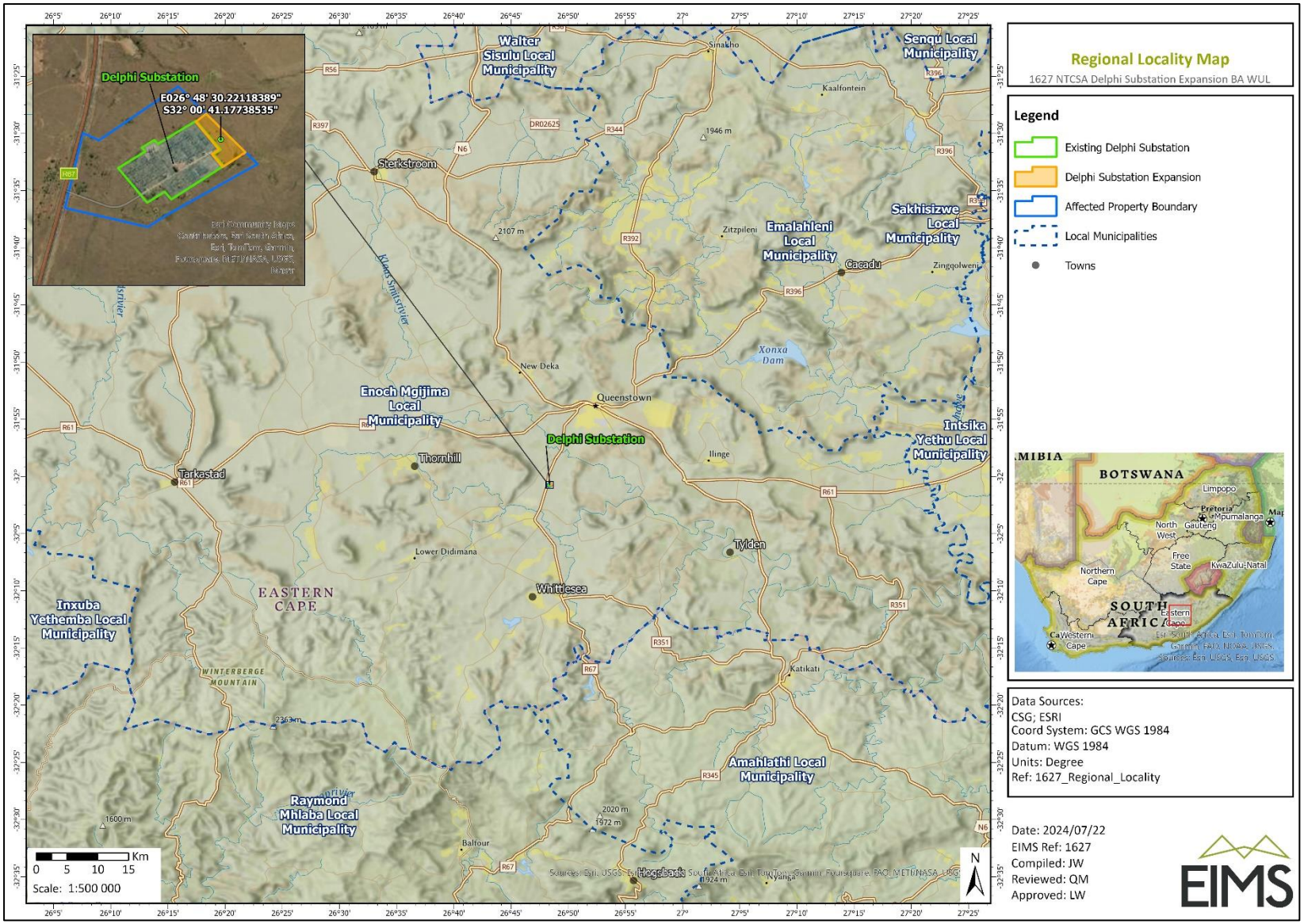

Figure 1: Regional Locality Map

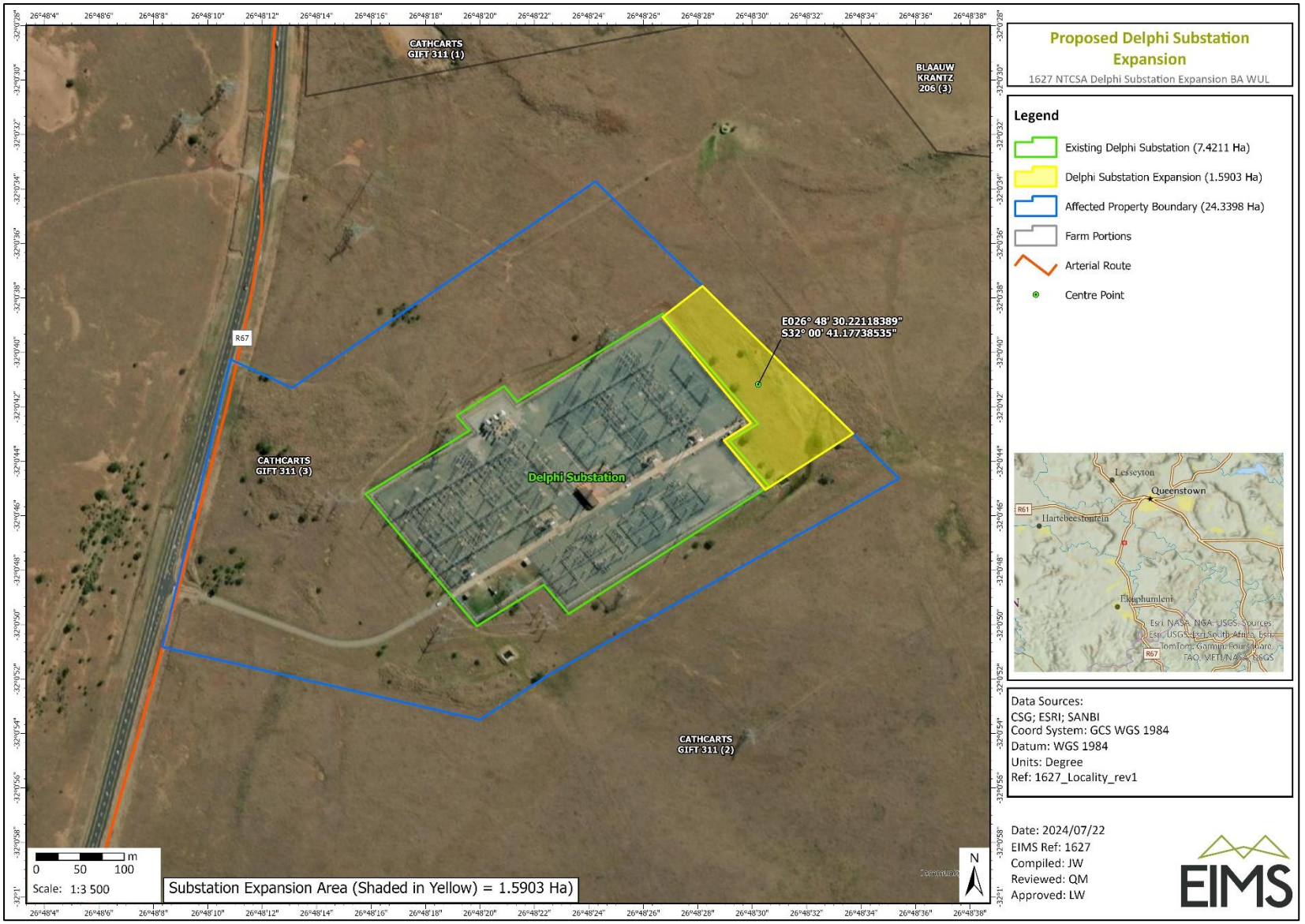

Figure 2: Site Locality Map

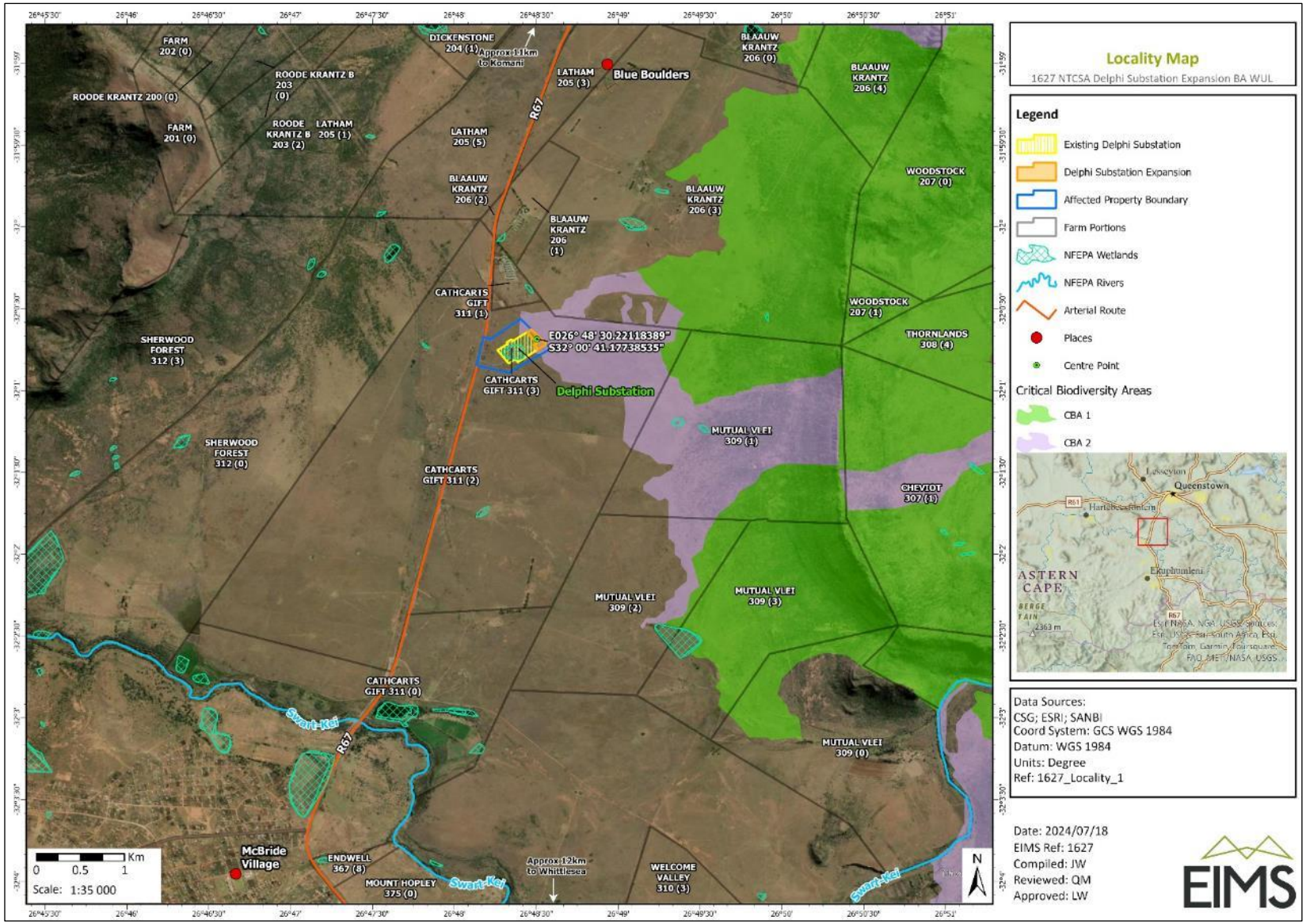

Figure 3: DFFE Compliant Locality Map

2 SCOPE OF THE PROPOSED ACTIVITY

This section provides details on the proposed activities and the listed activities triggered. Refer to the subsequent subsections for details.

2.1 DETAILED PROJECT DESCRIPTION

The proposed expansion of the NTCSA Delphi 400/132kV Substation is aimed at enhancing the grid capacity to facilitate the connection of renewable energy generation by the year 2027. The project aligns with the 2022 Transmission Development Plan (TDP), which forecasts a requirement of 31,095 MW of photovoltaic (PV) and wind generation by 2030, with 16,604 MW needed as early as 2027. This expansion is critical due to the current limited capacity in many transmission supply areas, especially those identified in bid windows 5 and 6, and through an industry survey among various renewable energy (RE) associations. The Delphi Substation has been earmarked for this initiative due to its strategic location and existing infrastructure.

Key Components of the Proposed NTCSA 400/132kV Substation Expansion

1. 400kV Yard Extension:
    - Extend the 400kV yard in the north-easterly direction by one bay.
    - Equip the 400kV yard with one 400/132kV, 500 MVA transformer bay.
    - Install one 400/132kV, 500 MVA transformer.
    - Equip the 400kV busbar (B/B) and bus section (B/S).
    - Equip the 400kV bus coupler bay (B/C).
2. 132kV Yard Extension:
    - Extend the 132kV busbar in the north-easterly direction by seven bays.
    - Equip one 132kV transformer bay.
    - Equip the 132kV busbar (B/B) and bus section (B/S).
    - Equip the 132kV bus coupler bay (B/C) in a new position.
3. Civil and Structural Requirements:
    - Fence the yard and extend the terrace and road.
    - Relocate the existing oil dam.
    - Undertake special earthworks and deviate the existing stormwater drainage.
4. Oil Holding Dam:
    - Construction of an oil holding dam with a capacity of 120 cubic meters and a surface area of approximately 190 square meters.
    - The proposed location for the oil holding dam is towards the northeast of the property boundary, within a wetland and 32 meters of a wetland (artificial).
5. Substation Expansion:
    - The expansion area extends into the regulated area of a watercourse (artificial wetland) and will exceed 100 square meters.
    - Earthworks for the development are estimated at 12,000 cubic meters, predominantly within a wetland and the regulated area of a wetland.

- Clearance of grassland vegetation will be necessary for the expansion, affecting an area of approximately 15,600 square meters (1.56 hectares).

Refer to Appendix C 2 for the Conceptual Engineering Designs for the proposed infrastructure.

2.2 LISTED AND SPECIFIED ACTIVITIES

The planned NTCSA Delphi expansion project requires Environmental Authorisation in accordance with the NEMA prior to the commencement of construction and operation of the planned facilities. Table below outlines the anticipated listed activities applied for in terms of NEMA for the proposed NTCSA Delphi Expansion project.

Table 4: NEMA Listed Activities to be Authorised.

Activity No(s):	Relevant Basic Assessment Activity(ies) as set out in Listing Notice 1 of the EIA Regulations, 2014 as amended.	Description of the portion of the proposed project to which the applicable listed activity relates.
12 (i) (ii)	The development of— (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or (ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs— (a) within a watercourse; (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; — excluding— (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; (ee) where such development occurs within existing roads, road reserves or railway line reserves; or (ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of the development and where indigenous vegetation will not be cleared.	The applicant wishes to construct an oil holding dam with a capacity of 120 cubic metres and an approximate surface area of 188m^{2}m. The proposed development area for the oil holding dam is towards the northeast direction of the property boundary, within 32m of a wetland. The proposed expansion area of the substation extends into the regulated area of a watercourse and will exceed 100m^2.
14	The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.	The applicant intends to construct an oil holding dam with a capacity of 120 cubic metres. The oil holding dam would be used in cases of emergency if any transformer oil reservoirs spill within the substation itself. The dam would prevent an oil spill to the environment and in the event of such spill, the oil contained in the

		dam would be removed by a registered waste transport supplier.
19	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; 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.	Approximate earthworks for the proposed development 12000 cubic metres, mostly within a wetland area and the regulated area of a wetland.
27	The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except 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 will require clearance of grassland vegetation. The proposed site area is approximately 15 600 square metres (1.56 ha).
47	The expansion of facilities or infrastructure for the transmission and distribution of electricity where the expanded capacity will exceed 275 kilovolts and the development footprint will increase.	A 400kV transformer will be added, the substation will be expanded by seven 132kv Bays and one 400kV bay, thereby increasing the footprint.
48 (i) (a) and (c)	The expansion of— (i) infrastructure or structures where the physical footprint is expanded by 100 square metres or more; where such expansion occurs— (a) within a watercourse; (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding— (aa) the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such expansion activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 23 in Listing Notice 3 of 2014, in which case that activity applies;	The applicant wishes to expand the existing Delphi substation by approximately 15500 m^2. The southern section of the proposed development will require the infilling of the artificial wetland and the construction of an oil holding dam.

	(dd) where such expansion occurs within an urban area; or (ee) where such expansion occurs within existing roads, road reserves or railway line reserves.	
Activity No(s):	Provide the relevant Scoping and EIA Activity(ies) as set out in Listing Notice 2 of the EIA Regulations, 2014 as amended	Describe the portion of the proposed project to which the applicable listed activity relates. Ensure to include thresholds/area/footprint applicable.
Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3 of the EIA Regulations, 2014 as amended	Describe the portion of the proposed project to which the applicable listed activity relates. Ensure to include thresholds/area/footprint applicable.
12 (a) (ii)	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. a. Eastern Cape ii. Within critical biodiversity areas identified in bioregional plans;	The development is located within a Critical Biodiversity Area (CBA 2) and will require the clearance of grassland vegetation. The proposed site area is approximate 15 600 m^2 (1.56 ha).
14 (i) (ii) (a) and (c) (a.) (i) (ff)	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; (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. **a. Eastern Cape** i. Outside urban areas: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;	The applicant wishes to construct an oil holding dam with a capacity of 120 cubic metres and an approximate surface area of 188 m^2. The proposed development area for the oil holding dam is towards the northeast direction of the property boundary, within 32m of a wetland. The proposed expansion area of the substation extends into the regulated area of a watercourse and will exceed 10m.
23 (ii) (a) & (c)	The expansion of— (ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more; where such expansion occurs— (a) within a watercourse; (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding the expansion of infrastructure or structures within existing ports or harbours that	Expansion is over 10m^2 within a CBA area. The substation will be expanded by approximately 15600m^2 within 32m of a wetland and within a wetland area.

	will not increase the development footprint of the port or harbour.	

3 POLICY AND LEGISLATIVE CONTEXT

This section provides an overview of the governing legislation identified which relates to the proposed project. Additional legislation and other guidelines and policies are discussed in Section 3.6.

3.1 CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA

The constitution of any country is the supreme law of that country. The Bill of Rights in chapter 2 section 24 of the Constitution of South Africa Act (Act No. 108 of 1996) makes provisions for environmental issues and declares that: *"Everyone has the right -*

a) to an environment that is not harmful to their health or well-being; and

b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:

i. prevent pollution and ecological degradation;

ii. promote conservation; and

iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development"

The Basic Assessment and associated impact mitigation actions are conducted to fulfil the requirement of the Bill of Rights.

3.2 THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT

The main aim of the NEMA is to provide for co-operative governance by establishing decision-making principles on matters affecting the environment. In terms of the NEMA EIA Regulations, the applicant is required to appoint an EAP to undertake the EIA process, as well as conduct the public participation process towards an application for EA. In South Africa, EIA's became a legal requirement in 1997 with the promulgation of regulations under the Environment Conservation Act (ECA). Subsequently, NEMA was passed in 1998. Section 24(2) of NEMA empowers the Minister and any MEC, with the concurrence of the Minister, to identify activities which must be considered, investigated, assessed and reported on to the competent authority responsible for granting the relevant EA. On 21 April 2006, the Minister of Environmental Affairs and Tourism (now Department of Forestry, Fisheries and the Environment – DFFE) promulgated regulations in terms of Chapter 5 of the NEMA. These regulations, in terms of NEMA, were amended in June 2010, December 2014, April 2017, and again in 2022.

The objective of the EIA Regulations is to establish the procedures that must be followed in the consideration, investigation, assessment and reporting of the listed activities that are triggered by the proposed project. The purpose of these procedures is to provide the competent authority with adequate information to make informed decisions which ensure that activities which may impact negatively on the environment to an unacceptable degree are not authorised, and that activities which are authorised are undertaken in such a manner that the environmental impacts are managed to acceptable levels.

In accordance with the provisions of Sections 24(5) and Section 44 of the NEMA the Minister has published Regulations (GN R. 982) pertaining to the required process for conducting EIAs in order to apply for, and be considered for, the issuing of an EA. These EIA Regulations provide a detailed description of the EIA process to be followed when applying for EA for any listed activity.

An environmental Scoping and Impact Assessment process is reserved for activities which have the potential to result in significant impacts which are complex to assess. Basic Assessment studies accordingly provide a mechanism for the comprehensive assessment of activities that are likely to have less significant environmental impacts (as is the case for this application). Figure 4 below provides a graphic representation of all the

components of a Basic Assessment process that is followed for this application. Table 4 above identifies the listed activities the proposed project triggers and consequently requires authorisation prior to commencement.

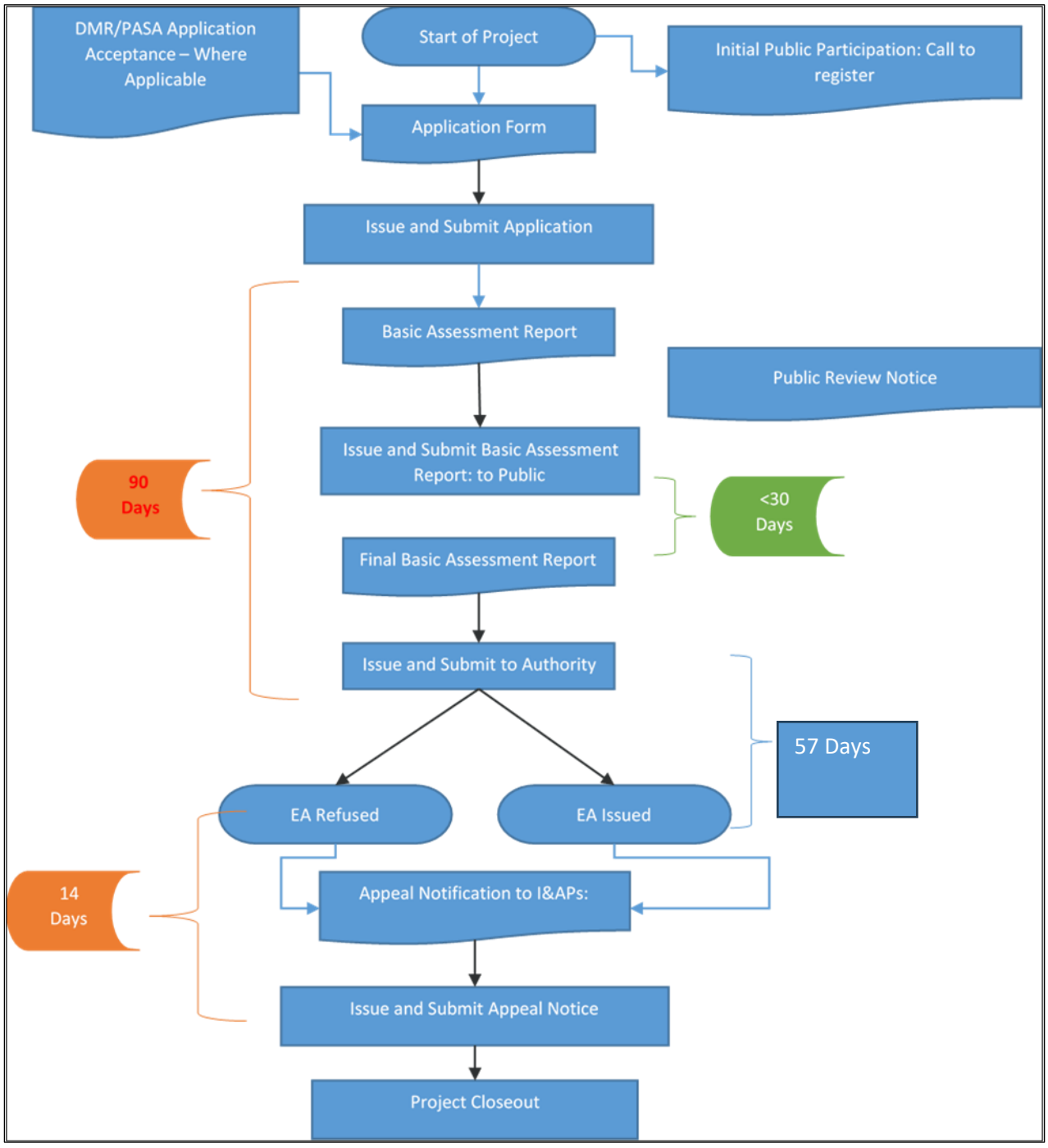

Figure 4: NEMA Basic Assessment Process

3.2.1 THE STRATEGIC TRANSMISSION CORRIDORS

In 2016, the Department of Forestry, Fisheries and the Environment (DFFE) appointed the Council for Scientific and Industrial Research (CSIR) and the South African National Biodiversity Institute (SANBI) to complete a series of Strategic Environmental Assessments ("SEAs") to determine the environmental implications of the Government's renewable energy policies and plans. Through the SEAs, the CSIR identified eight Renewable Energy Development Zones ("REDZs") across South Africa that are of strategic importance for large-scale wind

and solar PV energy development as well as five Strategic Transmission Corridors that are important for the rollout of the large-scale electricity infrastructure required for the energy projects within these areas. The corridors are representative of South Africa's future transmission backbone up to 2040. The corridors were identified to support Strategic Integrated Project 10 (SIP 10), which pertains to electricity transmission and distribution. Given the strategic importance of these corridors in balancing the country's future generation and load requirements, the SEA was advocating that electricity grid infrastructure development inside of the corridors benefit from improved regulatory treatment in the form of faster and more efficient environmental authorisation and permitting procedures.

In order to encourage the development of large-scale wind and solar PV projects and the associated large-scale electricity infrastructure, DFFE published Government Notices 113 and 114 on 16 February 2018 which provide that wind and solar PV projects that take place within a REDZ and electricity infrastructure that takes place within a Strategic Transmission Corridor only require a Basic Assessment ("BA") and do not need to undergo the longer and more comprehensive Scoping and Environmental Impact Reporting ("S&EIR") process in order to obtain an EA. This is because these areas have already been scoped for environmental risks as part of the SEA process. In addition, DFFE reduced the timeframe for the processing of these applications from 107 days to 57 days to help fast-track EA applications. It must be noted that any large-scale wind and solar PV or electricity infrastructure development activities that take place outside these specified areas are subject to the normal NEMA EIA Regulations.

The SEA processes identified geographical areas which are of strategic importance for the rollout of electricity transmission and distribution infrastructure in terms of SIP 10. These geographical areas consist of seven (7) strategic transmission corridors for the development of transmission and distribution infrastructure (Figure 5) that have been pre-assessed for environmental sensitivities.

- 2016 EGI SEA:
    - Central Corridor;
    - Eastern Corridor;
    - International Corridor;
    - Northern Corridor; and
    - Western Corridor
- 2019 Expanded EGI SEA:
    - Expanded Eastern Corridor; and
    - Expanded Western Corridor

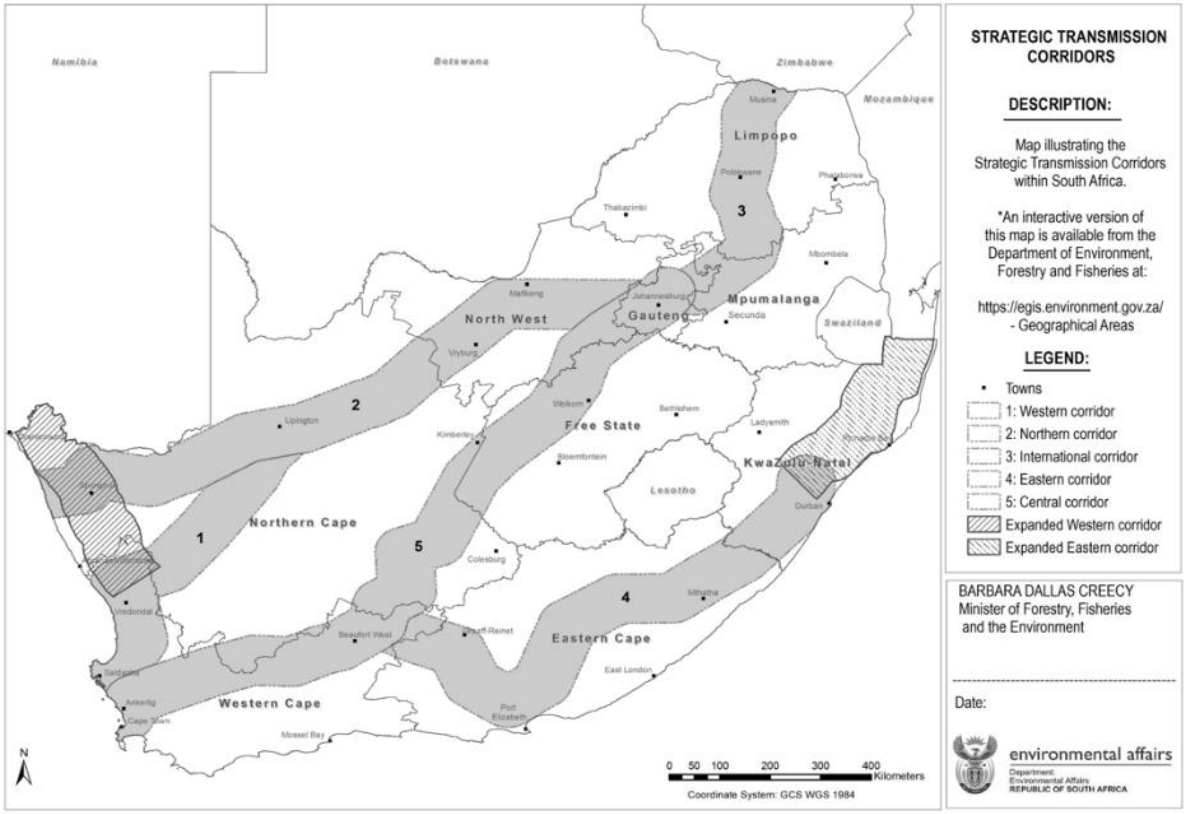

Figure 5: SA Strategic Transmission Corridors (DFFE, 2022)

A review of the strategic corridors map found that the proposed NTCSA Delphi Substation Expansion project is located within the Eastern corridor (refer to Figure 6 for a map showing the location of the NTCSA Delphi Substation location withing EGI corridor and REDZ). As the proposed development is an electrical infrastructure project and falls within the Eastern Corridor, the proposed development would only require a Basic Assessment process and the timeframe for the processing of these applications would only be up to a maximum of 57 days in terms of DFFE Government Notices 113 and 114. In July 2020, however, DFFE published draft Government Notice 835 which provided that where 90% or more of the electricity transmission and distribution infrastructure or the expansion of such infrastructure is to take place within a Strategic Transmission Corridor, an EA will not be required. This ultimately led to the adoption of the "Standard for the Development of Powerlines and Substations within Identified Geographical Areas" adopted in terms of section 24(10)(a) of NEMA in June 2022, discussed below.

3.2.2 THE STANDARD FOR DEVELOPMENT OF POWERLINES AND SUBSTATIONS WITHIN IDENTIFIED GEOGRAPHICAL AREAS

In a media statement issued on 25 August 2020, the DFFE explained that the reason for excluding electricity infrastructure activities that take place within a Strategic Transmission Corridor from the requirement to obtain an EA is because South Africa has been "developing grid infrastructure for many years and the impacts and mitigation measures are well-known" (https://www.fasken.com/en/knowledge/2021/03/17-minister-of-environment-forestry-and-fisheries). The DFFE has accordingly developed a standard known as the Standard for Electricity Transmission and Distribution Power Line Development within Identified Geographical Areas (the "Standard") which will set out the activities that will not require an EA and the applicable procedures. Although these activities will not require an EA, they were still subject to public participation and will be subjected to relevant appeal procedures. The Standard aims to reduce the timeframe between conceptualising a grid expansion project to its implementation and means that energy can be provided to the user faster or on time in the case of new renewable energy developments. If more than 10% of the proposed electricity transmission and

distribution infrastructure fall outside the Strategic Transmission Corridors, the relevant procedure in terms of the EIA Regulations must be followed to obtain an EA (which may be the S&EIR process).

The registration process through the Standard is subject to the proposed development meeting the following requirements:

- The development is situated in areas identified by the DFFE Screening Tool Report as being of medium or low environmental sensitivity and confirmed to be such by the EAP or the relevant specialist for the identified environmental theme;
- for the following activities, including the associated activities necessary for the realisation of the infrastructure, as identified in the EIA Regulations:
    - Listing Notice 1: Activity 11 and 47; and
    - Listing Notice 2: Activity 9;

Other important supporting documents required as part of the registration process and which must be appended to the Environmental Sensitivity Report include the following:

- A Generic Environmental Management Programme (EMPr) compiled for the development and expansion of: (a) overhead electricity transmission and distribution infrastructure and (b) substation infrastructure for the transmission and distribution of electricity;
- Proof of public participation process required in terms of Chapter 6 of the EIA Regulations for a linear development during the route determination process, especially consultation with relevant Non-Governmental Organisations (NGOs) and Community-Based Organisations (CBOs);
- Proof of the initial servitude negotiations with landowners;
- Specialist studies and/or Compliances Statements verifying the environmental sensitivity of the site; and
- Project Team details and expertise (CV's, qualifications and registrations).

It must be noted that the Standard and exclusions do not apply in the following instances:

- Where any part of the infrastructure occurs on an area for which the environmental sensitivity for a relevant environmental theme is identified as being very high or high by the screening tool and confirmed to be such by the EAP or the relevant specialist for the identified environmental theme;
- Where the site verification for a specific theme identifies that the low or medium sensitivity rating of the screening tool is in fact high or very high; or
- Where the greater part of the proposed infrastructure falls outside of any strategic transmission corridor.

Where this Standard does not apply, either the requirements of the EIA Regulations, or the requirements of Government Notice No. 113 in Government *Gazette* No. 41445 of 16 February 2018, read with the NEMA EIA Regulations, where relevant, apply to the relevant environmental theme for which the very high or high sensitivity has been identified, in respect of the portion of the development which occurs on the area where the environmental sensitivity is confirmed to be very high or high, or to the entire development where the greater part of the infrastructure falls outside of the strategic transmission corridor.

A review of the Standard (requirements, applicability, and exclusions) found that the proposed NTCSA Delphi Substation Expansion project does not meets the requirements for a registration process through the standard and therefore, needs to go through the EA process. Although the proposed development is wholly located within Eastern Transmission Corridor and the REDZ4 – Stormberg, the national web-based screening tool had identified the Palaeontology theme as "Very High" and following a site visit by the relevant Palaeontology specialist, it was confirmed the Palaeontology theme was "High". The project is thus excluded from eligibility to be registered

under the standard, as such this Basic Assessment Report has been prepared to comply with the requirement of obtaining an EA for the proposed activity.

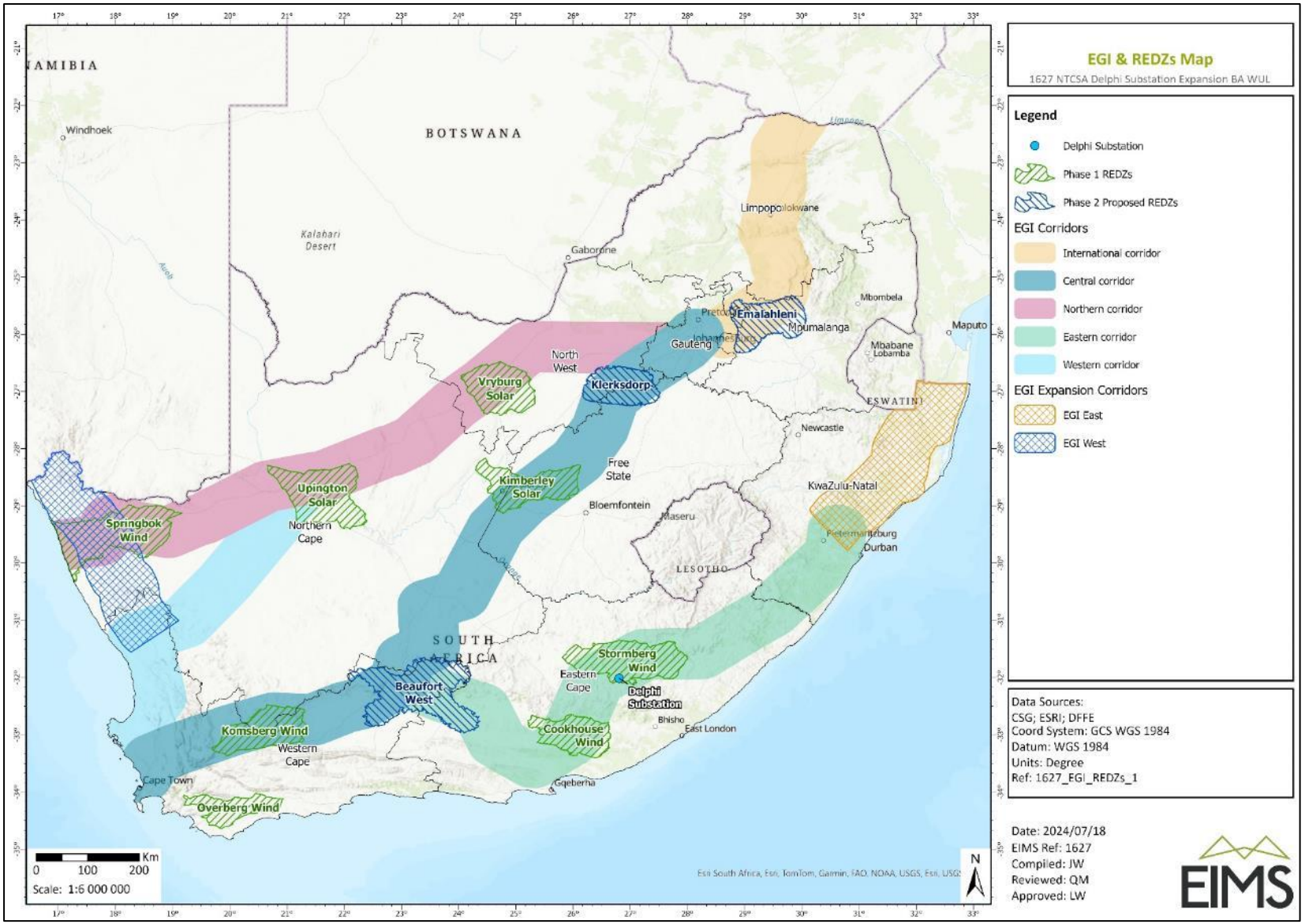

Figure 6: Location of Delphi Substation in EGI corridor and REDZ

3.3 THE NATIONAL WATER ACT

The National Water Act (Act No. 36 of 1998 – NWA) makes provision for two types of applications for water use licences, namely individual applications and compulsory applications. The NWA also provides that the responsible authority may require an assessment by the applicant of the likely effect of the proposed licence on the resource quality, and that such assessment be subject to the EIA regulations. A person may use water, if the use is-

- Permissible as a continuation of an existing lawful water use (ELWU);
- Permissible in terms of a general authorisation (GA);
- Permissible under Schedule 1; or
- Authorised by a licence.

These processes are described in Figure 7.

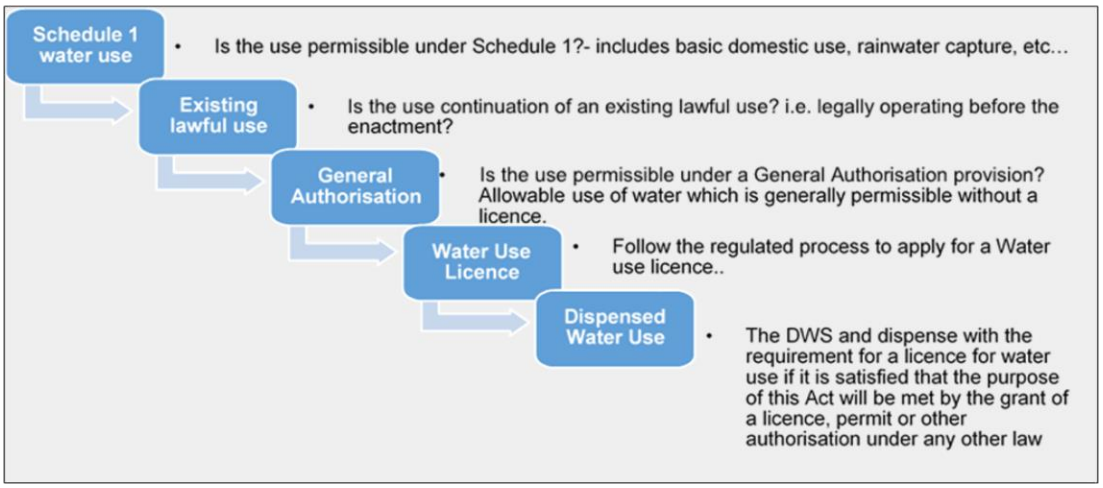

Figure 7: Authorization Process for new water uses.

A WUL application process is currently being undertaken in consultation with the DWS for Section 21 of the NWA listed water uses. The applicable water uses are as follows:

(c) Impeding or Diverting the flow of water in a watercourse

(g) Disposing of waste in a manner which may detrimentally impact a water resource; and

(i) Altering the bed, banks, course, or characteristics of a watercourse.

During the course of this application process, the required water use authorisation, or registrations will be confirmed with the Department of Water and Sanitation.

3.4 THE NATIONAL HERITAGE RESOURCES ACT

The National Heritage Resources Act (Act No. 25 of 1999 – NHRA) stipulates that cultural heritage resources may not be disturbed without authorisation from the relevant heritage authority. Section 34(1) of the NHRA states that, "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 relevant provincial heritage resources authority…" The NHRA is utilised as the basis for the identification, evaluation and management of heritage resources and in the case of Cultural Resource Management (CRM) those resources specifically impacted on by development as stipulated in Section 38 of NHRA, and those developments administered through the NEMA, Mineral and Petroleum Resources Development Act (Act No. 28 of 2002 – MPRDA) and the Development Facilitation Act (DFA) legislation. In the latter cases the feedback from the relevant heritage resources authority is required by the State and Provincial Departments managing these Acts before any authorisations are granted for a development.

The NHRA provides for the protection of South Africa's natural heritage. Section 2.1.4 states that the South African Heritage Resources Agency (SAHRA) is the statutory organisation responsible for the protection of South Africa's cultural heritage. According to Section 35 of the NHRA, any person who discovers archaeological objects or material in the course of a development must immediately report the find to SAHRA. No person may, without a permit issued by SAHRA, destroy, damage, excavate, alter, deface or otherwise disturb any archaeological site.

3.5 THE NATIONAL ENVIRONMENTAL MANAGEMENT BIODIVERSITY ACT

The National Environmental Management Biodiversity Act (Act No. 10 of 2004 – NEMBA) provides for the management and conservation of South Africa's biodiversity within the framework of the NEMA as well as the protection of species and ecosystems that warrant national protection. Within the framework of this Act, various regulations are promulgated which provide specific requirements and management measures relating to protecting threatened ecosystems, threatened or protected species as well as the control of alien and invasive species. A summary of these regulations is presented below.

3.5.1 THE REVISED NATIONAL LIST OF ECOSYSTEMS THAT ARE THREATENED AND IN NEED OF PROTECTION (GN 2747)

The NEMBA provides for listing of threatened or protected ecosystems in one of the following categories:

- Critically Endangered (CR) ecosystems, being ecosystems that have undergone severe degradation of ecological structure, function or composition as a result of human intervention and are subject to an extremely high risk of irreversible transformation;
- Endangered (EN) ecosystems, being ecosystems that have undergone degradation of ecological structure, function or composition as a result of human intervention, although they are not critically endangered ecosystems;
- Vulnerable (VU) ecosystems, being ecosystems that have a high risk of undergoing significant degradation of ecological structure, function or composition as a result of human intervention, although they are not critically endangered ecosystems or endangered ecosystems; and
- Protected ecosystems, being ecosystems that are of high conservation value or of high national or provincial importance, although they are not listed as critically endangered, endangered or vulnerable.

The Biodiversity Specialist has assessed whether any of these threatened or protected ecosystems occur within the study area and provided recommendations on how the development should or should not proceed based on the findings of the assessment.

3.5.2 ALIEN AND INVASIVE SPECIES LIST

This Act is applicable since it protects the quality and quantity of arable land in South Africa. Loss of arable land should be avoided and declared Weeds and Invaders in South Africa are categorised according to one of the following categories, and require control or removal:

- Category 1a Listed Invasive Species: Category 1a Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be combated or eradicated;
- Category 1b Listed Invasive Species: Category 1b Listed Invasive Species are those species listed as such by notice in terms of section 70(1)(a) of the Act as species which must be controlled;
- Category 2 Listed Invasive Species: Category 2 Listed Invasive Species are those species listed by notice in terms of section 70(1)(a) of the Act as species which require a permit to carry out a restricted activity within an area specified in the Notice or an area specified in the permit, as the case may be; and
- Category 3 Listed Invasive Species: Category 3 Listed Invasive Species are species that are listed by notice in terms of section 70(1)(a) of the Act, as species which are subject to exemptions in terms of section 71(3) and prohibitions in terms of section 71A of Act, as specified in the Notice.

The provisions of this Act will be considered and where relevant incorporated into the proposed mitigation measures and requirements of the EMPr.

3.6 ADDITIONAL SOUTH AFRICAN LEGISLATION

Additional legislation may be applicable to the activities proposed for this project. These are presented in Table 5.

Table 5: Applicable legislation, guidelines and policies overview.

Legislation / Guidelines	Description
Potentially Applicable Legislation	
Environment Conservation Act (Act No. 73 of 1989)	The Environment Conservation Act (Act No. 73 of 1989 – ECA) was, prior to the promulgation of the NEMA, the backbone of environmental legislation in South Africa. To date the majority of the ECA has been repealed by various other Acts, however Section 25 of the Act and the Noise Regulations (GN R. 154 of 1992) promulgated under this section are still in effect. These Regulations serve to control noise and general prohibitions relating to noise impact and nuisance.
Hazardous Substances Act (Act No. 85 of 1983)	This Act provides for the control of substances which may cause injury or ill-health to or death of human. No person may, without a licence: (1) sell any Group I Hazardous Substance; (2) use, operate or apply any Group III Hazardous Substance (listed electronic products); and (3) install or keep any Group III Hazardous Substance.
Applicable Guidelines	
Integrated Environmental Management Information Guidelines Series	The various guidelines will be considered throughout this Basic Assessment process. This series of guidelines was published by the Department of Environmental Affairs (DEA – now DFFE) and refers to various environmental aspects. Applicable guidelines in the series for the project include: Guideline 5: Companion to NEMA EIA Regulations (October 2012); Guideline 7: Public participation (October 2012); and Guideline 9: Need and desirability (October 2014). Additional guidelines published in terms of the NEMA EIA Regulations, 2014 (as amended), in particular: Guideline 3: General Guide to Environmental Impact Assessment Regulations, 2006; Guideline 4: Public Participation in support of the EIA Regulations, 2006; and Guideline 5: Assessment of alternatives and impacts in support of the EIA Regulations, 2006.
Policies	
The Eastern Cape Biodiversity Conservation Strategy and Action Plan (ECBCSAP)	The Eastern Cape Department of Economic Development, Environmental Affairs and Tourism has developed the ECBCSAP which gives notice for Protection of Threatened or Protected Ecosystems in the Eastern Cape province and identifies biodiversity priority areas for the province, called CBAs, and Ecological Support Areas (ESAs). These biodiversity priority areas, together with protected areas, are important for the persistence of a viable representative sample of all ecosystem types and species as well as the long-term ecological functioning of the landscape as a whole.

4 NEED AND DESIRABILITY OF THE PROPOSED ACTIVITY

The needs and desirability analysis component of the "Guideline on need and desirability in terms of the EIA Regulations (Notice 819 of 2014)" includes, but is not limited to, describing the linkages and dependencies between human well-being, livelihoods and ecosystem services applicable to the area in question, and how the proposed development's ecological impacts will result in socio-economic impacts (e.g. on livelihoods, loss of heritage site, opportunity costs, etc.).

The NTCSA Delphi 400/132kV Substation Expansion project is part of a broader initiative to unlock grid capacity for renewable energy generation, supporting the national goal of increasing renewable energy supply. The installation of a 500 MVA 400/132kV transformer at the Delphi Substation will enable the connection of an additional 300 MW of renewable energy, bringing the total to 400 MW, ensuring an N-1 level of network redundancy. Refer to Table 6 presents the needs and desirability analysis undertaken for the project.

Table 6: Need and desirability analysis for the proposed grid connection infrastructure.

Ref No.	Question	Answer
1	Securing ecological sustainable development and use of natural resources	
1.1	How were the ecological integrity considerations taken into account in terms of: Threatened Ecosystems, Sensitive and vulnerable ecosystems, Critical Biodiversity Areas, Ecological Support Systems, Conservation Targets, Ecological drivers of the ecosystem, Environmental Management Framework, Spatial Development Framework (SDF) and global and international responsibilities.	A number of specialist studies have informed this application and include: • Terrestrial Ecological Impact Assessment; • Avifaunal Impact Assessment; • Aquatic / Wetland Assessment • Soils / Agriculture Assessment • Heritage Impact Assessment; and • Palaeontologic Impact Assessment. The findings, recommendations and conclusions of these studies are included in this report.
1.2	How will this project disturb or enhance ecosystems and / or result in the loss or protection of biological diversity? What measures were explored to avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy the impacts? What measures were explored to enhance positive impacts?	Refer to baseline ecological statement in Section 7, and the impact assessment in Section 9 of this report.
1.3	How will this development pollute and / or degrade the biophysical environment? What measures were explored to either avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy the impacts? What measures were explored to enhance positive impacts?	
1.4	What waste will be generated by this development? What measures were explored to avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise, reuse and / or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?	Waste will be generated during the construction phase. The types of waste generated include sewage and solid waste. Waste has been identified as an impact and assessed in Section 9. However, it is anticipated that the following measures can be utilised to reduce the impact of the waste on the receiving environment: • Visual inspection. • Waste must be securely stored.

Ref No.	Question	Answer
		• All hazardous waste such as oil must be stored separately and disposed of at a registered facility. • Proof of disposal must be kept by the Applicant.
1.5	How will this project disturb or enhance landscapes and / or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy the impacts? What measures were explored to enhance positive impacts?	Refer to Sections 8, 9 and Appendix D. As per the findings of the HIA and PIA, the development will not lead to detrimental impacts on the cultural / heritage / palaeontological resources of the area, if the recommended mitigations are adhered to.
1.6	How will this project use and / or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy the impacts? What measures were explored to enhance positive impacts?	Refer to the impact assessment in Section 9 of this report. The Applicant is in the process of extending the Delphi Substation as it has been earmarked due to its location and proximity to infrastructure for enhancing the grid capacity to facilitate the connection of renewable energy generation by the year 2027. As such, this development will support the development of renewable energy developments. It is anticipated that the project will have a low impact on the non-renewable natural resources.
1.7	How will this project use and / or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and / or impacts on the ecosystem jeopardise the integrity of the resource and / or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts?	Refer to the impact assessment in Section 9 of this report. The Applicant is in the process of extending the Delphi Substation as it has been earmarked due to its location and proximity to infrastructure for enhancing the grid capacity to facilitate the connection of renewable energy generation by the year 2027. As such, this development will support the development of renewable energy developments. It is anticipated that the project will have a low impact on the renewable natural resources.
1.7.1	Does the proposed project exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e. de-materialised growth)?	The Applicant is in the process of extending the Delphi Substation as it has been earmarked due to its location and proximity to infrastructure for enhancing the grid capacity to facilitate the connection of renewable energy generation by the year 2027. As such, this development will support the development of renewable energy developments.
1.7.2	Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used?	The Applicant is in the process of extending the Delphi Substation as it has been earmarked due to its location and proximity to infrastructure for enhancing the grid capacity to facilitate the connection of renewable energy generation by the year 2027. As such, this development will support the development of renewable energy developments.

Ref No.	Question	Answer
1.7.3	Do the proposed location, type and scale of development promote a reduced dependency on resources?	The Applicant is in the process of extending the Delphi Substation as it has been earmarked due to its location and proximity to infrastructure for enhancing the grid capacity to facilitate the connection of renewable energy generation by the year 2027. As such, this development will support the development of renewable energy developments. It will further support renewable energy developments that aim to reduce dependency on non-renewable forms of energy.
1.8	How were a risk-averse and cautious approach applied in terms of ecological impacts:	
1.8.1	What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?	The limitations and/or gaps in knowledge are presented in Section 11.
1.8.2	What is the level of risk associated with the limits of current knowledge?	Refer to the impact assessment in Section 9 of this report. The level of risk is considered low.
1.8.3	Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	Refer to the impact assessment in Section 9 of this report. The level of risk is considered low. Detailed specialist investigations included a site inspection to ascertain the site conditions and projects associated risks.
1.9	How will the ecological impacts resulting from this development impact on people's environmental right in terms following?	
1.9.1	Negative impacts: e.g. access to resources, opportunity costs, loss of amenity (e.g. open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?	The proposed activities are anticipated to have low negative ecological impacts Refer to the impact assessment in Section 9 of this report.
1.9.2	Positive impacts: e.g. improved access to resources, improved amenity, improved air or water quality, etc. What measures were taken to enhance positive impacts?	
1.10	Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g. on livelihoods, loss of heritage site, opportunity costs, etc.)?	A low impact on third party wellbeing, livelihoods and ecosystem services is foreseen at this stage of this application. Refer to the impact assessment in Section 9 of this report.

Ref No.	Question	Answer
1.11	Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives / targets / considerations of the area?	The proposed activities are anticipated to have limited low negative ecological impacts as the project is situated in a disturbed area and is not anticipated to have any significant impacts to the ecological integrity as detailed by the Terrestrial Ecology, Avifauna and Aquatic specialist reports included in this report. Refer to the impact assessment in Section 9 in this report.
1.12	Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations?	Refer to Section 5 for details of the alternatives considered.
1.13	Describe the positive and negative cumulative ecological / biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area?	Refer to the impact assessment in Section 9 in this report.
2	Promoting justifiable economic and social development	
2.1	What is the socio-economic context of the area, based on, amongst other considerations, the following:	
2.1.1	The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks or policies applicable to the area,	Enoch Mgijima 2024/25 Integrated Development plan that the municipality faces challenges such as high unemployment and poverty rates, though it has potential in sectors like agriculture, retail, and tourism. Key economic activities include livestock farming, crop production, and small-scale manufacturing. The employment rate stands at around 34%, with an alarming unemployment rate of about 47%, reflecting the pressing need for economic interventions. The local government's focus on integrated development aims to address these challenges through sustainable projects and community empowerment initiatives. Infrastructure development, particularly in transportation and public services, is crucial for stimulating economic growth. The municipality's 2024/25 Integrated Development Plan highlights relevant statistics: Komani hosts the majority of the population with a density of around 65 people per square kilometre, with the dominant racial group being Black African, comprising over 90% of the population. The plan outlines strategic priorities such as upgrading infrastructure, enhancing service delivery, and fostering sustainable economic development. Key goals include improving access to water, sanitation, and electricity, as well as promoting education and health services to enhance the quality of life for residents

Ref No.	Question	Answer
2.1.2	Spatial priorities and desired spatial patterns (e.g. need for integrated of segregated communities, need to upgrade informal settlements, need for densification, etc.),	Where feasible, it is anticipated that local labour could be utilised however much of the electrical infrastructure installation will be undertaken by qualified and experienced electrical contractors.
2.1.3	Spatial characteristics (e.g. existing land uses, planned land uses, cultural landscapes, etc.), and	Refer to the baseline environment in Section 7 of this report.
2.1.4	Municipal Economic Development Strategy ("LED Strategy").	Considering the limited scope and extent of the proposed development, it is not anticipated to significantly promote or facilitate spatial transformation and sustainable urban development. However, considering that the proposed development is part of a bigger scale project to enhance energy availability and transmission of electricity from solar and wind energy, the project ties into the municipal plans for increased public service infrastructure.
2.2	Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area?	Refer to the impact assessment in Section 9 in this report.
2.2.1	Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?	Considering the limited scope and extent of the proposed development, it is not anticipated to significantly promote or facilitate spatial transformation and sustainable urban development. However, considering that the proposed development is part of a bigger scale project to enhance energy availability and transmission of electricity from solar and wind energy, the project ties into the municipal plans for increased public service infrastructure
2.3	How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?	Refer to the public participation process and feedback contained Appendix E.
2.4	Will the development result in equitable (intra- and inter-generational) impact distribution, in the short- and long-term? Will the impact be socially and economically sustainable in the short- and long-term?	Refer to the impact assessment and mitigation measures in Section 9 of this report.
2.5	In terms of location, describe how the placement of the proposed development will:	
2.5.1	Result in the creation of residential and employment opportunities in close proximity to or integrated with each other.	Where feasible, it is anticipated that local labour could be utilised.

Ref No.	Question	Answer
2.5.2	Reduce the need for transport of people and goods.	The proposed development is not anticipated to have an impact on the transportation of goods and people.
2.5.3	Result in access to public transport or enable non-motorised and pedestrian transport (e.g. will the development result in densification and the achievement of thresholds in terms of public transport),	The proposed development is not anticipated to have an impact on the public transport.
2.5.4	Compliment other uses in the area,	The proposed development is located within an identified Renewable Energy Development zone and is within a Transmission Corridor. The Delphi substation has been selected for expansion to carry additional capacity to be generated in other projects planned within this area and this project serves to support additional grid strengthening, located as it is located strategically to existing infrastructure.
2.5.5	Be in line with the planning for the area.	Refer to item 2.1.1 of this table (above).
2.5.6	For urban related development, make use of underutilised land available with the urban edge.	Not applicable. The proposed project is not located in an urban area.
2.5.7	Optimise the use of existing resources and infrastructure,	Refer to Section 9 of this report.
2.5.8	Opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g. not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement),	
2.5.9	Discourage "urban sprawl" and contribute to compaction / densification.	Not applicable. The proposed project is not located in an urban area.
2.5.10	Contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs,	Refer to items 2.5.7 – 2.5.9 of this table (above).
2.5.11	Encourage environmentally sustainable land development practices and processes	As a result of the fact that this project entails the expansion of an existing substation infrastructure with a limited footprint, and that it will be located within a property on which there is an existing substation and existing transmission infrastructure, it is anticipated that this project will not lead to a significant impact on the receiving environment.

Ref No.	Question	Answer
2.5.12	Take into account special locational factors that might favour the specific location (e.g. the location of a strategic mineral resource, access to the port, access to rail, etc.),	This project entails the expansion of an existing transmission substation with a limited footprint, and it will be located on a property that consists of a substation.
2.5.13	The investment in the settlement or area in question will generate the highest socio-economic returns (i.e. an area with high economic potential).	It is not anticipated that the proposed development will contribute significantly to the settlements or areas in question in terms of socio-economic returns.
2.5.14	Impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and	Refer to impact assessment in Section 9 of this report.
2.5.15	In terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?	It is not anticipated that the proposed development will contribute significantly to the settlements or areas in question in terms of socio-economic returns.
2.6	How was a risk-averse and cautious approach applied in terms of socio-economic impacts:	
2.6.1	What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?	Refer to impact assessment in Section 9 of this report.
2.6.2	What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge?	The level of risk is low as the project is not expected to have far reaching negative impacts on socio-economic conditions.
2.6.3	Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	The level of risk is low as the project is not expected to have far reaching negative impacts on socio-economic conditions. A risk averse and cautious approach has been implemented to limit the impact on the surrounding environment.
2.7	How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following:	
2.7.1	Negative impacts: e.g. health (e.g. HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?	Refer to impact assessment in Section 9 of this report.
2.7.2	Positive impacts. What measures were taken to enhance positive impacts?	Refer to impact assessment in Section 9 of this report.

Ref No.	Question	Answer
2.8	Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socioeconomic impacts will result in ecological impacts (e.g. over utilisation of natural resources, etc.)?	Refer to impact assessment in Section 9 of this report.
2.9	What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?	Refer to impact assessment in Section 9 of this report.
2.10	What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?	Refer to the impact assessment in Section 9 of this report.
2.11	What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?	By conducting a BA Process, the applicant ensures that equitable access has been considered however based on the nature and small footprint of this proposed substation expansion, it is not foreseen that the project will have a significant impact on equitable access to environmental resources. Refer to the impact assessment in Section 9 of this report.
2.12	What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?	Refer to the impact assessment in Section 9 of this report. The BA and EMPr will specify timeframes within which mitigation measures must be implemented.
2.13	What measures were taken to:	
2.13.1	Ensure the participation of all interested and affected parties.	Refer to Section 6 and Appendix E of this report, describing the public participation process undertaken for the proposed project.
2.13.2	Provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation,	Refer to Section 6 of this report, describing the public participation process undertaken for the proposed project. The advertisement and site notice have been made available in English and IsiXhosa to assist in understanding of the project.
2.13.3	Ensure participation by vulnerable and disadvantaged persons,	

Ref No.	Question	Answer
2.13.4	Promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means,	
2.13.5	Ensure openness and transparency, and access to information in terms of the process,	
2.13.6	Ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge,	
2.13.7	Ensure that the vital role of women and youth in environmental management and development were recognised and their full participation therein will be promoted?	
2.14	Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g. a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)?	Refer to Section 6 of this report, describing the public participation process undertaken for the proposed project.
2.15	What measures have been taken to ensure that current and / or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?	Potential future workers will have to be educated on a regular basis as to the environmental and safety risks that may occur within their work environment. Furthermore, adequate measures will have to be taken to ensure that the appropriate personal protective equipment is issued to workers based on the conditions that they work in and the requirements of their job.
2.16	Describe how the development will impact on job creation in terms of, amongst other aspects:	
2.16.1	The number of temporary versus permanent jobs that will be created.	The proposed development will typically require highly skilled employment. However, where feasible, it is anticipated that local labour could be utilised.
2.16.2	Whether the labour available in the area will be able to take up the job opportunities (i.e. do the required skills match the skills available in the area).	
2.16.3	The distance from where labourers will have to travel.	

Ref No.	Question	Answer
2.16.4	The location of jobs opportunities versus the location of impacts.	
2.16.5	The opportunity costs in terms of job creation.	
2.17	What measures were taken to ensure:	
2.17.1	That there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment.	The BA Process requires governmental departments to communicate regarding any application. In addition, all relevant departments are notified at various phases of the project by the EAP.
2.17.2	That actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures.	
2.18	What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?	Refer to Section 6 of this report, describing the public participation process undertaken for the proposed project.
2.19	Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?	Refer to the impact assessment and mitigation measures in Section 9 of this report.
2.20	What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment?	The proposed activities are not anticipated to produce significant pollution, environmental damage or adverse health effects.
2.21	Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?	Refer to Section 5, description of the process followed to reach the proposed preferred site.
2.22	Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area?	Refer to the impact assessment and mitigation measures in Section 9 of the Basic Assessment Report.

5 PROJECT ALTERNATIVES

The identification of alternatives is a key aspect of the success of the BA process. All reasonable and feasible alternatives must be identified and screened to determine the most suitable alternatives to consider and assess. There are however some significant constraints that have to be taken into account when identifying alternatives for a project of this scope. Such constraints include technical, social, financial and environmental issues. Alternatives can typically be identified according to:

- Location/layout/design alternatives;
- Technological alternatives; and
- Activity alternatives (including the No-go option).

For any alternative to be considered feasible such an alternative must meet the need and purpose of the development proposal without presenting significantly high associated impacts. The alternatives are described, and the advantages and disadvantages are presented. It is further indicated which alternatives are considered feasible from a technical as well as environmental perspective.

Alternatives can also be distinguished into discrete or incremental alternatives. Discrete alternatives are overall development options, which are typically identified during the pre-feasibility, feasibility and or scoping phases of the EIA process (DEAT; 2004). Incremental alternatives typically arise during the BA process and are usually suggested as a means of addressing identified impacts. These alternatives are closely linked to the identification of mitigation measures and are not specifically identified as distinct alternatives. This section provides information on the development footprint alternatives, the properties considered, as well as the type of activity, activity layout, technological and operational aspects of the activity.

5.1 LOCATION/ LAYOUT/ DESIGN ALTERNATIVES

The proposed Delphi substation expansion is proposed on Portion 3 of Carthcarts Gift (Farm 311) owned by the Applicant. The above-mentioned property has an existing operational substation, and the proposed development seeks to expand the substation to unlock more grid capacity for future planned Renewable Energy Developments (solar and wind) planned within the region. The Delphi substation has been selected due to its proximity to the planned developments and existing infrastructure and as such, no further location/property alternatives were considered.

The proposed layout considered the available space within the selected property, current design and available infrastructure within the Delphi Substation, and it was considered as the viable layout as the substation currently has transmission infrastructure such as transmission lines and pylons located in the north, west, and southern portions of the property and the only available land for expansion is located in the north east portion of the property. This supports the design philosophy of substations whilst also considering future transmission lines into the substation and as such no further layout alternatives were deemed possible for the proposed expansion project.

The proposed 500MVA 400/132 kV transformer to be installed at the Delphi Substation as part of the proposed expansion has been designed to assist the Applicant to achieve their strategic objectives of unlocking grid capacity, producing and distributing renewable energy from solar and wind energy developments planned within close proximity to the substation to be expanded. As mentioned above, this substation has been selected due to its strategic location and proximity to existing distribution infrastructure and the 500MVA transformer design caters for the amount of additional capacity to be installed. The design philosophy of oil dams is that in the event of any emergency or failure of a transformer, the oil inside the transformer gets released through an underground system into the oil dam. From the oil dam, the oil gets pumped by an external service provider for offsite disposal. The existing oil dam has a capacity of 80 m^3. Upon relocation, the new dam will have a new capacity of 120 m^3, sufficient to cater for the bigger 500MVA transformer to be installed on site. No further design/technological alternatives were considered.

5.2 ACTIVITY ALTERNATIVE AND THE NO-GO ALTERNATIVE

The proposed expansion project entails the installation of a 500 MVA 400/132kV transformer at the Delphi Substation will enable the connection of an additional 300 MW of renewable energy, bringing the total to 400 MW, ensuring an N-1 level of network redundancy. This is in line with Eskom's strategic objectives and supports Eskom's Just Energy Transition (JET) strategy which focuses on the transition of South Africa's energy sector as the country navigates the shift away from coal towards cleaner sources of energy. Eskom/NTCSA's responsibilities entails the production, transmission and distribution of electricity and the expansion of the Delphi expansion allows for the realisation of these, representing the preferred activity alternative.

The No-Go alternative would imply that the Delphi expansion project is not carried out and the status quo remains. The option of not proceeding with the development would mean that the environmental impact associated with the proposed development would not occur and both positive and negative impacts would not take place. This implies that Eskom and the NTCSA would not be able to meet their JET objectives and would result in the continued dependency on coal (non-renewable resource) and would not realise the potential positive benefits of the identified Strategic Transmission Corridors and Renewable Energy Development zones. As such, the No-Go alternative is not preferred.

6 STAKEHOLDER ENGAGEMENT

The Public Participation Process (PPP) is a requirement of several pieces of South African legislation and aims to ensure that all relevant Interested and Affected Parties (I&APs) are consulted, involved and their comments are considered, and a record included in the reports submitted to the Authorities. The process ensures that all stakeholders are provided this opportunity as part of a transparent process which allows for a robust and comprehensive environmental study. The PPP for the proposed project needs to be managed sensitively and according to best practises to ensure and promote:

- Compliance with international best practice options;
- Compliance with national legislation;
- Establishment and management of relationships with key stakeholder groups; and
- Involvement and participation in the environmental study and authorisation/approval process.

As such, the purpose of the PPP and stakeholder engagement process is to:

- Introduce the proposed project;
- Explain the authorisations required;
- Explain the environmental studies already completed and yet to be undertaken (where applicable);
- Solicit and record any issues, concerns, suggestions, and objections to the project;
- Provide opportunity for input and gathering of local knowledge;
- Establish and formalise lines of communication between the I&APs and the project team;
- Identify all significant issues for the project; and
- Identify possible mitigation measures or environmental management plans to minimise and/or prevent negative environmental impacts and maximize and/or promote positive environmental impacts associated with the project.

The PPP for the proposed project has been undertaken in accordance with the requirements of the NEMA EIA Regulations (2014), and in line with the principles of Integrated Environmental Management (IEM). IEM implies an open and transparent participatory process, whereby stakeholders and other I&APs are afforded an opportunity to comment on the project and have their views considered and included as part of project planning. Please refer to the attached Public Participation Report included in Appendix E for details of the public participation conducted for this project to date.

6.1 NOTIFICATION OF I&APS

All I&APs were notified of the EA Application via the following one or more of the following methods:

- Initial call to register:
    - Newspaper Advertisement: Placement of advertisement in English and IsiXhosa in the Local Daily Dispatch Newspaper;
    - Placement of site notices: Placement of 4 A1 Cortex site notices in English and IsiXhosa at various locations along, within and surrounding the perimeter of the proposed project study area;
    - Notification of landowners, occupiers and other key I&APs: Notification letters, were distributed to pre-identified I&APs through either email, fax, and/or registered mail where contacts were available.

Refer to Appendix E for proof of notification sent to I&APs and for proof of correspondence with I&APs. The following will still be conducted:

Table 7: PPP still to be conducted.

Notification of I&APs of Reports for Public Review	Notification of pre-identified I&APs via either email, fax, SMS and registered mail where contacts are available. Contact details were included in the notification should I&APs require assistance accessing the information or require copies of reports.
Availability of BAR for public review Reports (Basic Assessment Report) **The BAR will be made available for public review and comment for a period of at least 30-days from the 02nd of August 2024.**	One (1) hard copy of report has been submitted to the local public library where members of the public could access the report.
	One (1) hard copy of the report has been submitted to Portion 1 of Farm Carthcarts Gift (The Pines Poultry Komani) – Property adjacent to the Substation where members of the public could access the report.
	One (1) hard copy of the report has been submitted to the Chris Hani District Municipality (56 Tylden Str, Komani).
	An electronic copy of the report was placed on the EIMS website. A data free service was made available to anyone who has limitations with respect to data downloads.
	The project team has made themselves available to I&AP meeting requests to discuss the project.
Notification of Decision	Notification of registered I&APs via either email, fax, SMS and registered mail where contacts are available. Contact details are to be included in the notification if I&APs require assistance accessing the decision.

I&APs were provided an opportunity to register for the proposed project from the 29th of May 2024. I&APs will also be notified of the availability of the BAR which is to be made available for 30 days from the 02nd of August 2024, for review and comment. Comments obtained during the BAR public review and comment period and the responses will be included in the final submission to the DFFE.

6.2 SUMMARY OF ISSUES RAISED BY I&APS

Any comments received during the PPP to date have been included in Appendix E of this report refer to of this report for the table of correspondence. Refer to the I&AP database in Appendix E for a full list of pre-identified and registered interested and affected parties. To date, the following issues have been raised and addressed:

- The DFFE Biodiversity and Conservation Directorate allocated case officers to the project and requested a map and a kml file/shapefile of the proposed development which was provided as requested;
- A comment from the Civil Aviation Authority stating that a formal obstacle application may be required to determine whether the proposed development may affect the safety of flights; and
- The Eastern Cape Heritage Provincial Heritage Resources Authority (ECPHRA) requested that a Notice of Intent to Develop be submitted through the SAHRA platform and that they are notified once the submission is made. The NID form was filled and submitted on the SAHRA platform, EIMS informed the ECPHRA of the submission made and the SAHRIS case number. Furthermore, EIMS informed the ECPHRA that the relevant HIA and PIA will be placed on the SAHRIS platform when the BAR is placed for public review, and they will be informed of the availability of the reports.

7 DESCRIPTION OF THE RECEIVING ENVIRONMENT

This section of the Report provides a description of the environment that may be affected by the proposed project. Aspects of the biophysical, social and economic environment that could be directly or indirectly affected by, or could affect, the proposed development have been described. This information has been sourced from existing information available for the area, specialist baseline assessments, as well as previous reports undertaken for within the area.

7.1 CLIMATE

Komani has a warm and temperate climate with significant rainfall. The average climate data is shown in Table 8 below. It can be observed that the average temperatures in Komani range from 9.4°C in July to 20.4°C in January. Komani receives the highest rainfall in January and the lowest in June.

Table 8: Average temperatures and rainfall data for Komani (Climate-data.org, 2024)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Temp. (°C)	20.4	20.1	18.8	15.4	12.7	9.8	9.4	11.6	14.4	16.3	17.8	19.5
Min. Temp. (°C)	14.6	14.7	13.2	9.5	6.4	3.2	2.5	4.4	6.9	9.3	11.1	13.3
Max. Temp. (°C)	27.6 °C	27 °C	25.7	22.3	20.1	17.2	17.2	19.6	22.7	24.5	25.8	27.3
Rainfall (mm)	104	100	83	50	16	14	15	23	35	60	74	95
Humidity (%)	63%	66%	64%	60%	54%	50%	46%	42%	43%	51%	55%	60%
Rainy days (d)	11	10	9	6	3	2	2	3	5	8	9	11
Avg. Sun hours	8.3	7.8	7.8	7.9	8.2	8.0	8.2	8.4	8.6	8.5	8.8	8.6

7.2 TOPOGRAPHY

With reference to Figure 8, the elevation of the proposed NTCSA Delphi Substation Expansion is located at 1080 metres above mean sea level (mamsl) at its centre point. The topography of the site is flat/very gentle with a maximum slope of 1.6% across the site from a northwest direction through to a southeast direction refer to Figure 9 for the elevation profile of the proposed site.

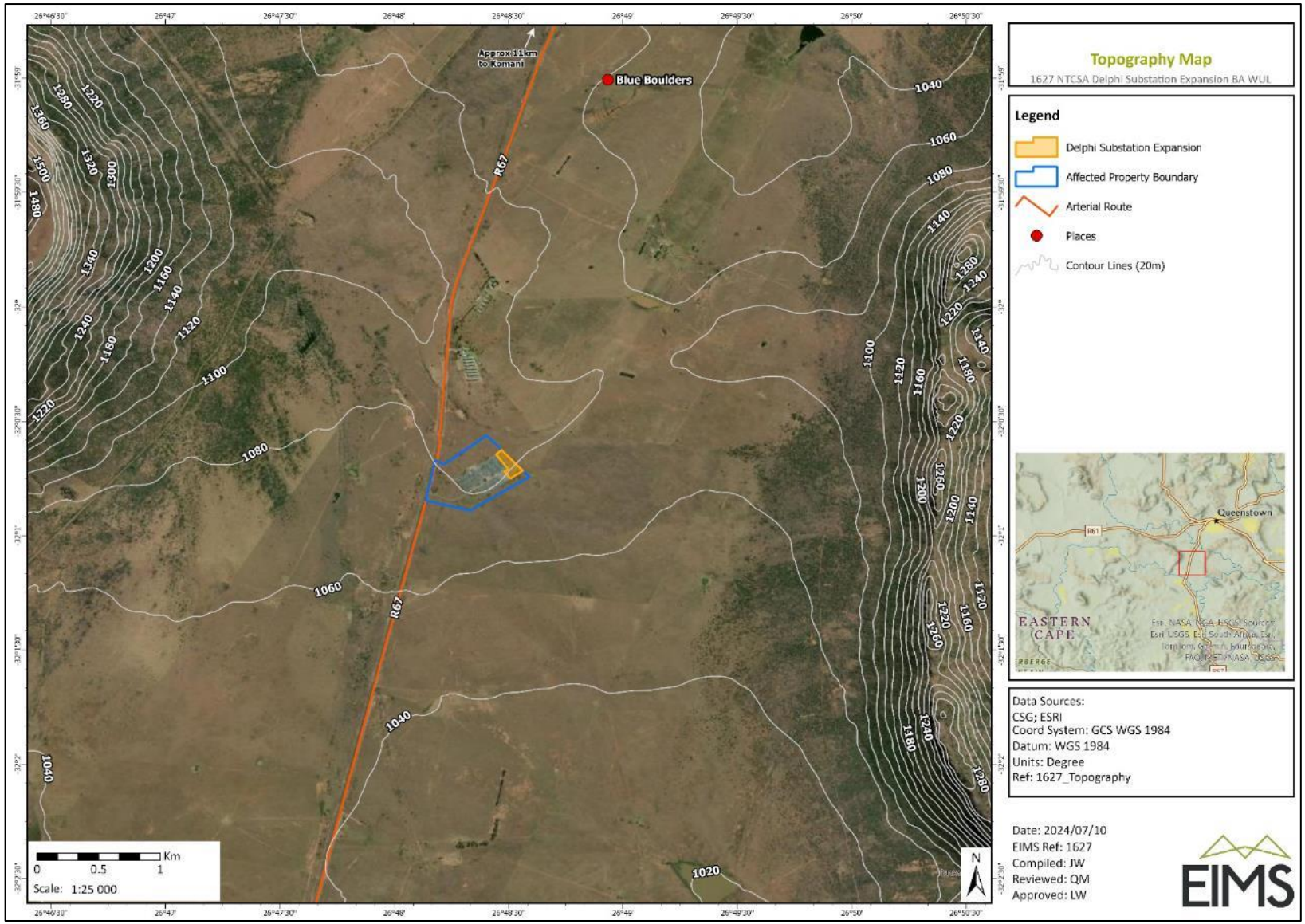

Figure 8: Map showing Topography of the NTCSA Delphi Substation Expansion site.

Figure 9: Elevation profile of the NTCSA Delphi Substation Expansion site.

7.3 CURRENT LANDUSES

The proposed Delphi Substation Expansion site is located on a property that is currently being utilised for public service infrastructure with an existing substation. The surrounding land uses include an open veld and a chicken farm located approximately 500m from the proposed site area.

7.4 FLORA

7.4.1 ECOSYSTEM THREAT STATUS

The Ecosystem Threat Status is an indicator of an ecosystem's wellbeing, based on the level of change in structure, function or composition. Ecosystem types are categorised as Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT) or Least Concern (LC), based on the proportion of the original extent of each ecosystem type that remains in good ecological condition. According to the spatial dataset the proposed project overlaps with a LC ecosystem (Figure 10).

Figure 10

Figure 10 : Map illustrating the ecosystem threat status associated with the project area.

7.4.2 ECOSYSTEM PROTECTION LEVEL

This is an indicator of the extent to which ecosystems are adequately protected or under-protected. Ecosystem types are categorised as Well Protected (WP), Moderately Protected (MP), Poorly Protected (PP), or Not Protected (NP), based on the proportion of the biodiversity target for each ecosystem type that is included within one or more protected areas. NP, PP or MP ecosystem types are collectively referred to as under-protected ecosystems. The Project Area overlaps with a 'NP' ecosystem (Figure 11).

Figure 11: Map illustrating the ecosystem threat status associated with the project area.

7.4.3 CRITICAL BIODIVERSITY AREAS AND ECOLOGICAL SUPPORT AREAS

The key output of a systematic biodiversity plan is a map of biodiversity priority areas. The CBA map delineates CBAs, Ecological Support Areas (ESAs), Other Natural Areas (ONAs), Protected Areas (PAs), and areas that have been irreversibly modified from their natural state.

The conservation of CBAs is crucial, in that if these areas are not maintained in a natural or near-natural state, biodiversity conservation targets cannot be met. Maintaining an area in a natural state can include a variety of biodiversity compatible land uses and resource uses (SANBI-BGIS, 2017).

The purpose of the Eastern Cape Biodiversity Conservation Plan (2018) is to inform land-use planning and development on a provincial scale and to aid in natural resource management. One of the outputs is a map of CBAs and ESAs. These are classified into different categories, namely Protected Areas, CBA1 areas, CBA2 areas, ESA1 areas, ESA2 areas, ONAs and areas with No Natural Habitat Remaining (NNR) based on biodiversity characteristics, spatial configuration, and requirements for meeting targets for both biodiversity patterns and ecological processes.

Figure 12 shows the Project Area superimposed on the Eastern Cape Biodiversity Conservation Plan. The Project Area overlaps with a CBA 2 and Other areas (which are transformed by the existing substation).

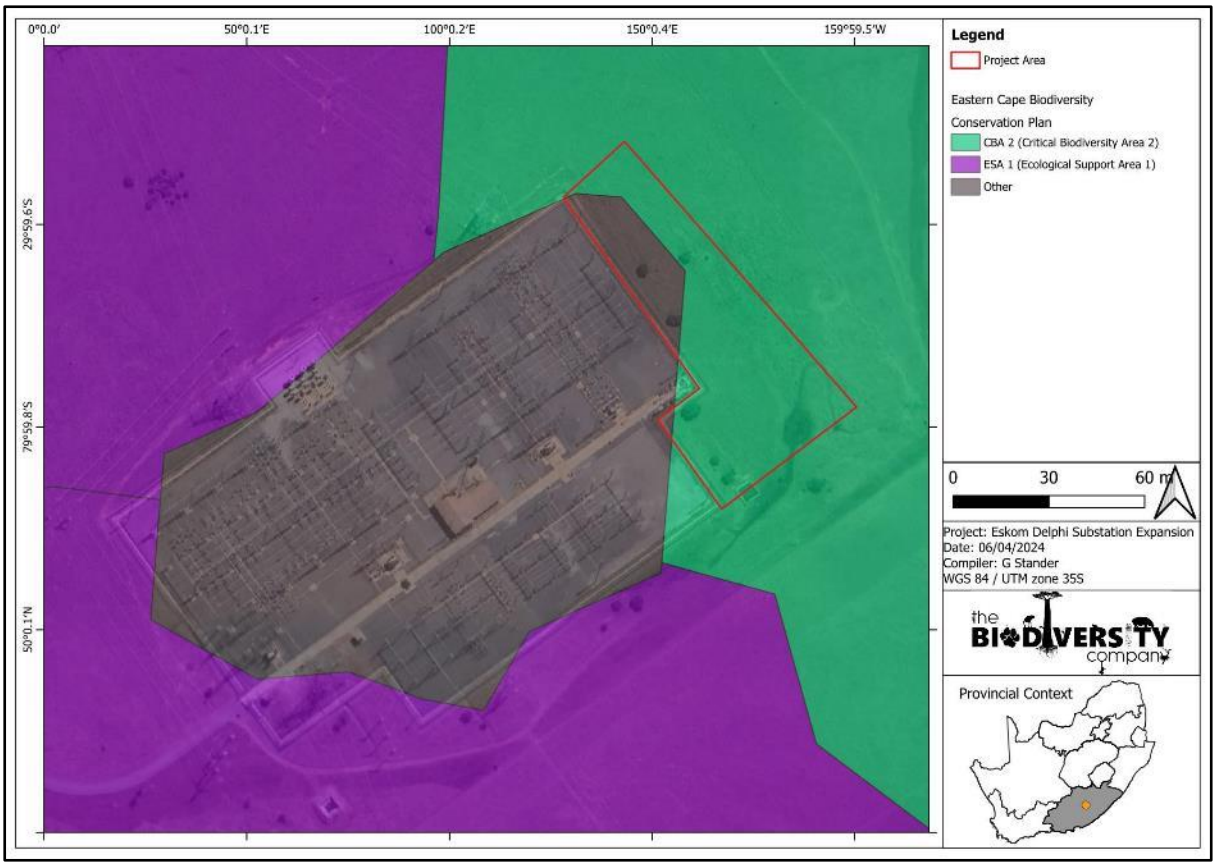

Figure 12: Delphi Substation Expansion Area Superimposed on the Eastern Cape Biodiversity Conservation Plan.

7.4.4 EXPECTED FLORA SPECIES

The Screening Tool indicates that two (2) flora SCC are predicted to occur in the general area refer to Table 9 for details of the species expected. The likelihood of occurrence within the Project Area are included here, none have been confirmed for the site during the site assessment and likelihood of occurrence is considered low due to a lack of suitable habitat within the Project Area.

Table 9: Threatened flora species expected to occur within the project area.

Scientific name	Treat Status	Habitat	Screening Tool Sensitivity	Likelihood of Occurrence
Indigofera ovina	VU	It occurs on summits of rocky hills.	Medium	Low
Sensitive species 1248[1]	VU		Medium	Low

7.4.5 HABITAT ASSESSMENT

Three (3) habitat types were identified by the biodiversity specialist across the proposed area and include Degraded Grassland, Artificial Wetland and Modified.

[1] Due to the sensitivity of certain species, the name of the species is not permitted to be published and therefore the designation number assigned by the DFFE has been provided.

Table 10: Delineated habitat type descriptions

Figure 13: View of Degraded Grassland Habitat

This grassland habitat is disturbed due to human infringement, as it is located adjacent to the existing and active substation. This habitat is dominated by grasses and herbs, such as *Hyparrhenia hirta, Aristida* sp. and *Nidorella podocephala*.

No fauna or flora SCC were observed, and none are expected for the habitat unit.

Figure 14: View of Artificial Wetland Habitat

This wetland habitat has been identified as artificial by the wetland specialist (TBC, 2024). Additional information regarding this habitat unit may be found in the accompanying freshwater assessment (TBC, 2024).

No fauna or flora SCC were observed, and none are expected for the habitat unit.

Figure 15: View of Modified Habitat

Areas that have little to no remaining natural vegetation due to land transformation. The modified area identified within the Project Area consist of an oil holding dam.

No SCC were recorded or are expected.

7.5 FAUNA AND AVIFAUNA

SABAP2 data indicate that 250 avifauna species are expected for the Project Area of Influence (PAOI)and surrounding areas. Whilst the Screening Tool indicates that one (1) avifauna SCC is predicted to occur in the general area. Refer to Table 11 for a list of the 16 avifauna species that were considered SCC. The likelihood of occurrence within the proposed development area is included in Table 11 below. There is not sufficient habitat, or the adjacent disturbance is too extensive for the species to nest in the PAOI, they can however still forage in

the development area. No SCC were recorded in the proposed development area during the assessment only general species were recorded.

Table 11: Threatened avifauna species that are expected in the project area and surrounding areas (Taylor et al. 2015) and (IUCN 2021)

Common Name	Scientific Name	Family Name	Regional[2]	Global[3]	Likelihood of occurrence	Screening tool
African Finfoot	*Podica senegalensis*	Heliornithidae	VU	LC	Low	
Black Harrier	*Circus maurus*	Accipitridae	EN	EN	Low	
Blue Bustard	*Eupodotis caerulescens*	Otididae	LC	NT	Moderate	
Cape Vulture	*Gyps coprotheres*	Accipitridae	EN	VU	Moderate	
Denham's Bustard	*Neotis denhami*	Otididae	VU	NT	Moderate	High
Grey Crowned Crane	*Balearica regulorum*	Gruidae	EN	EN	Low	
Ground Woodpecker	*Geocolaptes olivaceus*	Picidae	LC	NT	Low	
Knysna Woodpecker	*Campethera notata*	Picidae	NT	NT	Low	
Lanner Falcon	*Falco biarmicus*	Falconidae	VU	LC	Moderate	
Martial Eagle	*Polemaetus bellicosus*	Accipitridae	EN	EN	Low	
Mountain Pipit	*Anthus hoeschi*	Motacillidae	NT	NT	Low	
Secretarybird	*Sagittarius serpentarius*	Sagittariidae	VU	EN	Moderate	
Tawny Eagle	*Aquila rapax*	Accipitridae	EN	VU	Low	
Verreaux's Eagle	*Aquila verreauxii*	Accipitridae	NA	LC	Low	
White-bellied Korhaan	*Eupodotis senegalensis*	Otididae	VU	LC	Moderate	
Yellow-tufted Pipit	*Anthus crenatus*	Motacillidae	NT	NT	Low	

[2] Regional: Red Data regional (Taylor et al, 2015). CR- Critically Endangered; EN-Endangered; VU-Vulnerable; NT-Near-threatened; LC-Least concern

[3] Global: IUCN, 2021

7.6 AQUATIC ECOLOGY

The South African Inventory of Inland Aquatic Ecosystems (SAIIAE) wetland dataset is a recent outcome of the National Biodiversity Assessment (NBA, 2018) and, was a collaborative project by the South African National Biodiversity Institute (SANBI) and the Council for Scientific and Industrial Research (CSIR). The SAIIAE dataset provides further insight into wetland occurrences and extents building on the information from the National Freshwater Ecosystem Priority Areas (NFEPA), as well as other datasets. No Inland Aquatic Ecosystems were identified within the proposed development area and project areas of influence.

The National Freshwater Ecosystem Priority Areas (NFEPA) database forms part of a comprehensive approach to the sustainable and equitable development of South Africa's scarce water resources. This database provides guidance on how many rivers, wetlands and estuaries, and which ones, should remain in a natural or near-natural condition to support the water resource protection goals of the National Water Act (Act 36 of 1998) (NWA). This directly applies to the NWA, which feeds into Catchment Management Strategies, water resource classification, reserve determination, and the setting and monitoring of resource quality objectives (Nel et al., 2011). The NFEPAs are intended to be conservation support tools and envisioned to guide the effective implementation of measures to achieve the biodiversity goals of the National Environment Management Biodiversity Act (NEM:BA) (Act 10 of 2004), informing both the listing of threatened freshwater ecosystems and the process of bioregional planning provided for by this Act (Nel et al., 2011). Refer to Figure 16 for NFEPA wetland identified by the GIS dataset within the project area. The GIS dataset shows that a NFEPA wetland is to be anticipated on site, however this was not deemed to be true as the area anticipated to be a wetland is the existing substation.

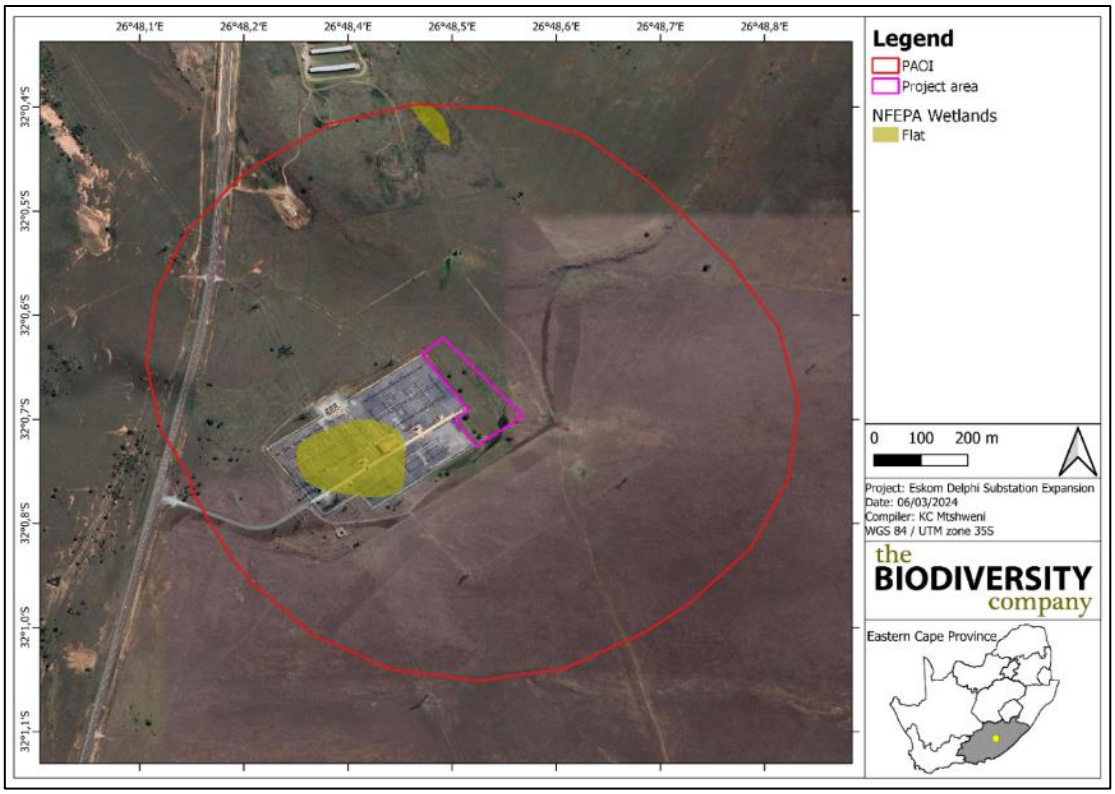

Figure 16: NFEPA wetlands in relation to the project area.

The wetland specialist identified an artificial wetland, along with three non-wetland watercourses, namely a canal, oil dams and a reservoir within the proposed development area, further stating that although these systems do not classify as natural wetland systems, it is important to note where these systems are for any planned development in the area. Refer to Figure 17 for the delineated wetlands/watercourses by the Wetland specialist Refer to Figure 18 for progression of wetland development due to rainwater discharge from the existing substation.

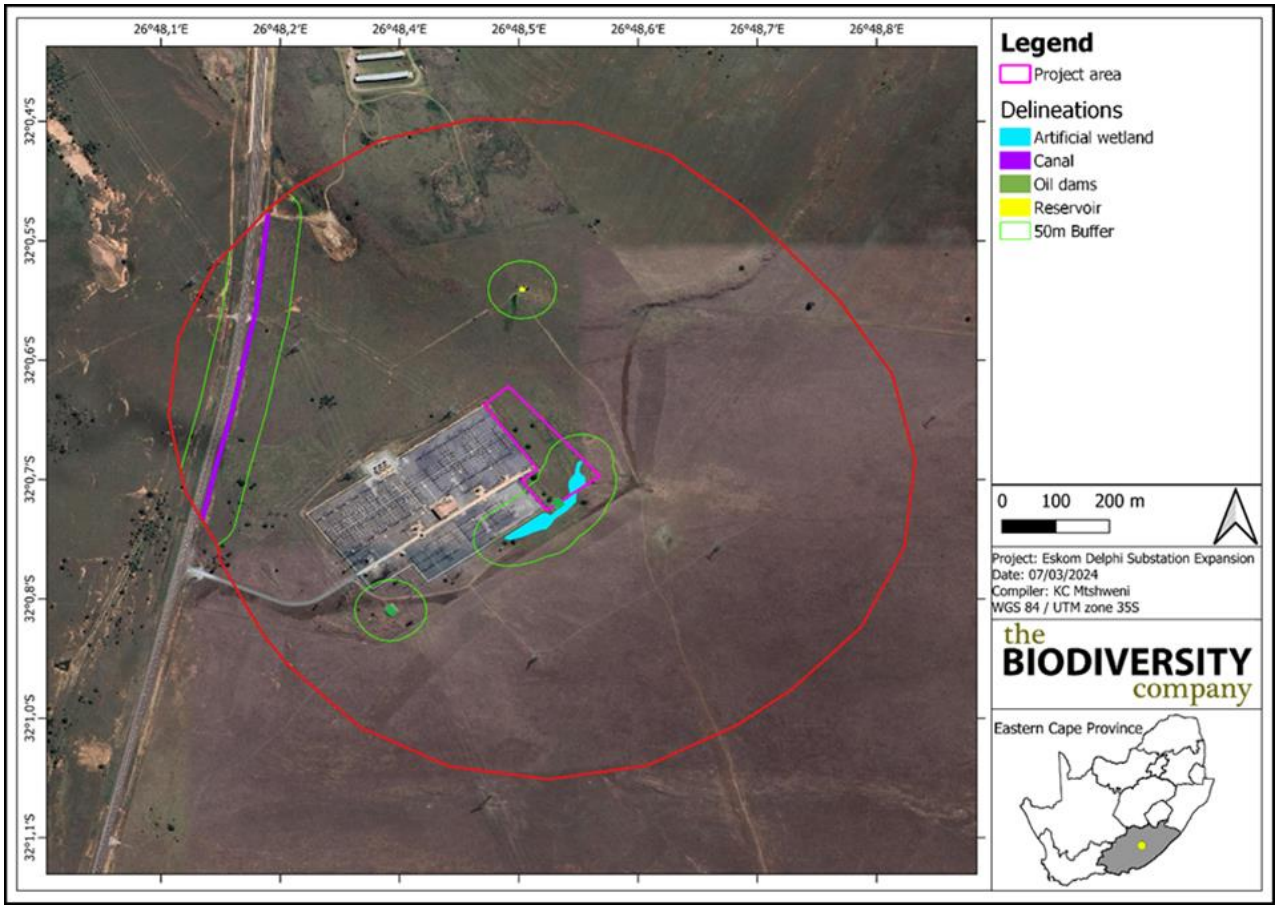

Figure 17: Delineation of watercourses on site.

Figure 18: Delphi Substation Google Earth Image 2005 (A) and Delphi Substation Google Earth Image 2008 (B)

7.7 CULTURAL AND HERITAGE RESOURCES

A site visit was conducted by archaeologists from PGS Heritage during May 2024. During the site visit a single heritage resource was identified. The stone age lithic exposure site (DE001) is of a total of 26 lithic artefacts seen in a 3x3m radius. The heritage specialist describes the site on which the heritage exposure occurs as a footpath and a cutting in the soil profile (probably through the original building and levelling of the substation) have led to the exposure of stone tools mostly made of basalt. The stone tools appear to have been mostly edge-rolled (indicating transport by water/rivers) but some have fresher edges. The site may, in fact, be an alluvial gravel deposit from occupation of the landscape some 300,000-30,000 years ago, and the assemblage could possibly be attributed to the Middle Stone Age techno-complex, but further research is necessary. Due to the site's quantity and possible subterranean context, it was given a low local significance.

Figure 19: Footpath where tools eroded from

Figure 20: Cutting where tools eroded from

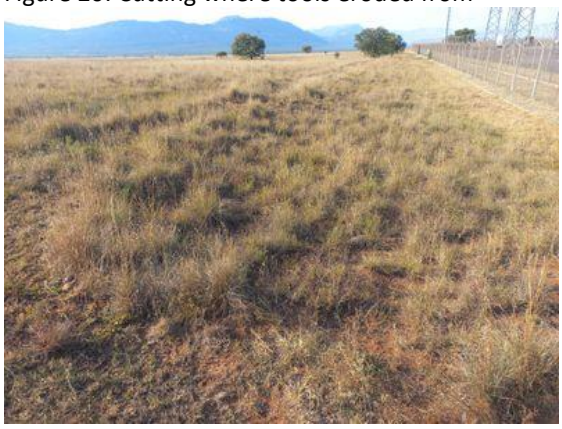

Figure 21: View of cut from which Delphi Substation was levelled.

Figure 22: Dorsal side of the 26 artefacts.

Figure 23: Ventral side of the 26 artefacts.

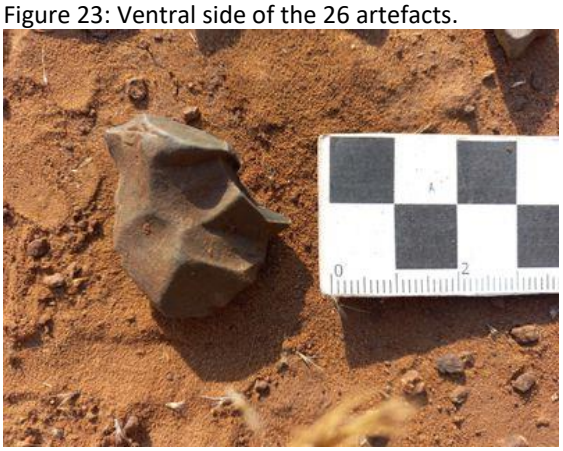

Figure 24: Rounded edges from alluvial transport.

Figure 25: Fresher edges of a scraper

7.8 PALAEONTOLOGICAL RESOURCES

According to the Council for Geoscience's geological map data, the project area is located within the Karoo Supergroup. The proposed project is underlain by the Burgersdorp Formation of the Beaufort Group, with the Jurassic Dolerite in close proximity. As confirmed by the Palaeontology specialist, the Burgersdorp Formation was identified by the screening tool to have a "Very High" sensitivity rating and the specialist confirmed the site sensitivity as "High".

A site visit was undertaken by the Palaeontological team in May 2024. During the site visit several ex-situ trace fossils were detected in the north-eastern corner of the proposed development. All fossils were located within a meter from each other. Several weathered plant and trace fossils were detected in the proposed development area, and it is possible that better preserved specimens are located outside the development. Based on the site investigation as well as desktop research it was concluded that fossil heritage of scientific and conservational interest in the study area is relatively rare. A High Palaeontological Significance has been allocated for the construction phase of the development pre-mitigation and a low significance post mitigation. Refer to Figure 26 - Figure 29 for images of ex-situ fossils noted by the Palaeontology specialist during the site visit.

Figure 26: Leaf imprints (-32.011828, 26.808989)

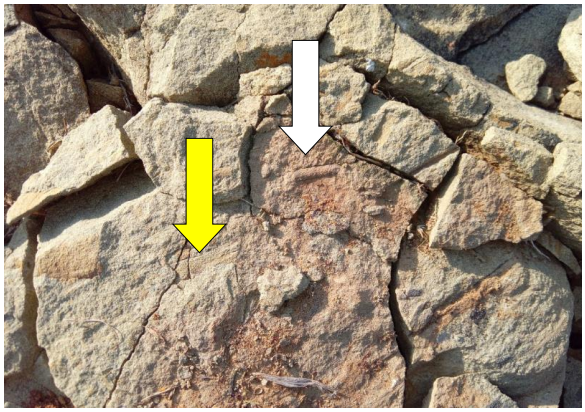

Figure 27: Fossilized leaf and infilled stem or trace fossil/tunnel

Figure 28: Fossil slab is very weathered

Figure 29: Plant fossils (-32.011828, 26.808989)

7.9 SOCIO-ECONOMIC CONTEXT

The Enoch Mgijima Local Municipality, situated in the Chris Hani District of the Eastern Cape, South Africa, encompasses urban and rural areas, with Komani (formerly Queenstown) as its administrative hub. The region's landscape is marked by rolling hills, valleys, and agricultural lands. It spans approximately 13,500 square kilometres and includes towns such as Komani, Tarkastad and Whittlesea. The area is predominantly inhabited by the Xhosa-speaking population, which constitutes about 87% of the demographic, followed by Afrikaans and English speakers.

Enoch Mgijima 2024/25 Integrated Development plan faces challenges such as high unemployment and poverty rates, though it has potential in sectors like agriculture, retail, and tourism. Key economic activities include livestock farming, crop production, and small-scale manufacturing. The employment rate stands at around 34%, with an alarming unemployment rate of about 47%, reflecting the pressing need for economic interventions. The local government's focus on integrated development aims to address these challenges through sustainable projects and community empowerment initiatives. Infrastructure development, particularly in transportation and public services, is crucial for stimulating economic growth.

The municipality's 2024/25 Integrated Development Plan highlights significant statistics: Komani hosts the majority of the population with a density of around 65 people per square kilometre, with the dominant racial group being Black African, comprising over 90% of the population. The plan outlines strategic priorities such as upgrading infrastructure, enhancing service delivery, and fostering sustainable economic development. Key goals include improving access to water, sanitation, and electricity, as well as promoting education and health services to enhance the quality of life for residents.

8 SPECIALIST STUDIES

This section provides a summary of the findings of the specialist studies undertaken as part of this BA process. The DFFE web based national screening tool identified a Geotechnical Survey as one of the specialist studies to be undertaken. The Applicant has commissioned a geotechnical survey; however, the geotechnical report will only be submitted as an appendix to the Final Basic Assessment Report once it has been completed.

The detailed specialist reports are included in Appendix D. The following specialist studies were undertaken:

Specialist Study	Specialist Consultant
Terrestrial Biodiversity Compliance Statement **Avifaunal Compliance Statement** **Aquatic Compliance Statement** **Soils / Agricultural Compliance Statement**	the BIODIVERSITY company CONSULTING • COMPLIANCE • CONTROL
Heritage Impact Assessment	PGS HERITAGE
Palaeontological Impact Assessment	banzai environmental

8.1 TERRESTRIAL BIODIVERSITY ASSESSMENT

The completion of a comprehensive desktop study, in conjunction with the results from the field survey, suggest there is a good confidence in the information provided. The survey ensured that there was a suitable ground truth coverage of the assessment area, and most habitats and ecosystems were assessed to obtain a general species (fauna and flora) overview and the major current impacts were observed. The ecosystem threat status is classified as Least Concern albeit the protection level is regarded as 'Not Protected' Ecosystem. Moreover, the proposed activity overlaps a CBA 2 and is directly adjacent to ESA 1.

The proposed development area is located on three habitat types, as identified by the specialist, namely:

- Degraded Grassland;
- Artificial wetland; and
- Modified habitats.

The above-mentioned degraded grassland habitat unit has been subjected human infringement, as it is located adjacent to an existing and active substation. With the artificial wetland also having been as a result of the development of the substation, refer to subsection 8.3 for details. As such the terrestrial ecologists concluded that the project area exists in a predominantly disturbed state, having been subjected to anthropogenic impacts such as human and vehicle ingress and the edge effects associated with the existing Delphi substation.

The completion of a Terrestrial Biodiversity Assessment has led to the disputing of the "Very High" Terrestrial biodiversity theme, "Medium" plant species theme, and "High" animal species theme identified / allocated by the National Environmental Screening Tool. The project area has been assigned "Low" sensitivities across the above-mentioned themes by the specialist.

The Project Area is classified as having a 'Very High' terrestrial biodiversity theme sensitivity as allocated by the National Environmental Screening Tool. This sensitivity is based on the Project Area overlapping a CBA 2 area. However, historic and current anthropogenic activities have disturbed and modified the Project Area with disturbances observed. Completion of the terrestrial biodiversity assessment led to the dispute of the 'Very High' classification. The Project Area is instead assigned an overall terrestrial sensitivity of 'Low'.

No significant impacts from a terrestrial ecology perspective are expected, subject to the implementation of the recommended mitigation measures. As such, it is the opinion of the specialist that the proposed development is favourable only if all mitigation measures provided in this and freshwater assessment report are implemented. It is recommended that care be taken during construction to adhere to mitigation measures. An AIP management plan must be implemented as a priority to prevent the spread and proliferation of AIP species to the surrounding natural areas.

8.2 AVIFAUNAL BIODIVERSITY ASSESSMENT

An avifaunal field survey was conducted following the assignment of a "High" sensitivity by the national web based Environmental Screening Tool with one species of conservation concern having been identified to be likely to occur in the project area. Desktop study undertaken by the Ecologist indicated that from the SABAP2 data, 250 avifauna species are expected for in the development area and surrounding areas. Of these, 16 are considered Species of Conservation Concern. However, the ecologist stated that there is not sufficient habitat, or the adjacent disturbance is too extensive for the species to nest in the development area, they can however still forage in the surrounding areas. No Species of Conservation Concern were recorded in the project area during the assessment only general species were recorded.

The specialist has disputed the "High" sensitivity assigned by the screening tool based on the proximity to the existing substation is unlikely to support and Species of Conservation Concern apart from species that could forage there and as such with adherence to the recommended mitigation measures, the specialist has assigned a "Low" sensitivity. Furthermore, the quantitative impact of the proposed project in isolation on avifauna is anticipated to be "medium" due to the expected adherence to mitigation. The cumulative impact of the

proposed project on avifauna is anticipated to be “low”. The project area has undergone historic and current disturbance, like the disturbances that the local area has undergone.

The avifauna specialist concluded that mitigation measures included in the Avifaunal Compliance Statement must be implemented to reduce the significance of the risk, but impacts are still possible. This is especially pertinent to electrocutions with the infrastructure. However, the specialist believes that the development can be favourably considered if the mitigation measures and management actions are implemented.

8.3 AQUATIC BIODIVERSITY ASSESSMENT

During the site assessment, one (1) artificial wetland unit along with three non-wetland watercourses, namely a canal, oil dams and a reservoir, were identified within site area and surrounding areas. It must be noted that the artificial wetland system presented wetland characteristics in the form of soil moisture (inundation) and vegetation (hydrophytes). Further investigation of the system revealed that it presented no hydromorphic soil characteristics, deeming it not to be a true wetland.

Due to no natural watercourses being identified within the 500m of the proposed development area. No ecological assessments were undertaken for the proposed project in relation to freshwater resources. The aquatic specialist validated the screening tool’s assigned ‘Low’ sensitivity.

The specialist concluded that the proposed project is not anticipated to have any impact on the aquatic biodiversity of the area as no natural freshwater resources were identified within the proposed development area. It is the specialist’s opinion is that the proposed development can be favourably considered for authorisation and the recommendation for its approval is not subject to any conditions.

8.4 SOIL / AGRICULTURE IMPACT ASSESSMENT

The soils specialist identified three representative soil forms within the proposed development area and within a 50m buffer area namely the Tubatse, Bethesda and Glenrosa soil forms. The assessment area is dominated by the restrictive Glenrosa soil form, with partially weathering rock fragments. The Glenrosa soil form is usually shallow, semi-impermeable to impermeable. Due to its restrictive morphology, the soil form has low productivity for crop production. Other identified soil forms include the Tubatse and Bethesda. The Tubatse soil form consists of an orthic topsoil horizon on top of a neocutanic horizon underlain with a lithic horizon below. The Bethesda soil from consists of an orthic topsoil horizon on top of a neocutanic horizon underlain with a hard rock substratum horizon below. These soils comprised of subsoil horizon that have been subjected to intermediate stages pf pedogenic alternation. The soils are deep but tends to limit root, water and air permeability which is critical in crop production under rainfed conditions.

The land capability classes of the above-mentioned soils have been determined to be class “III,” and “VI,” according to Smith (2006). The land capability class “III” is characterised by moderate limitations, with some erosion hazard and, which is suitable for rotation of crops and ley (50%). The land capability class “VI” is characterised by limitations precluding cultivation and is suitable for perennial vegetation, pasture and afforestation. A climate capability level 8 has been assigned to the area given the low Mean Annual Precipitation (MAP) and the high Mean Annual Potential Evapotranspiration (MAPE) rates. By using the determined land capability classes and the determined climate capability, land potential levels “L6” and “L7” were calculated. According to Smith (2006), land potential level “L6” is characterised by very restricted potential with regular and/or moderate limitations due to soil, slope, temperatures, or rainfall. The “L7” land potential level is characterised by low potential with severe limitations due to soil, slope, temperatures, or rainfall. Therefore, the proposed project area is considered non-arable.

The following land potential levels have been determined;

- Land Potential level 6 (this land potential level is characterised by very restricted potential. Regular and/or severe limitations due to soil, slope, temperatures or rainfall) and;
- Land potential level 7 (this land potential level is characterised by low potential. Severe limitations due to soil, slope, temperatures, or rainfall).

The soil/agriculture specialist has thus disputed the “medium” sensitivity assigned by the screening tool to the project area and has suggested that the project area is assigned a “low” agricultural sensitivity due to the presence of restrictive sensitive soil including Glenrosa soil form and the lack of irrigation infrastructure or annual crop fields.

The specialist concluded that the project the proposed substation expansion and access road extension will have an overall low residual impact on the agricultural production capability of the area. It is the specialists’ opinion that the proposed development can be favourably considered for authorisation and the recommendation for its approval is not subject to any conditions.

8.5 HERITAGE IMPACT ASSESSMENT

A Heritage Impact Assessment was undertaken by a suitably qualified Heritage Specialist. Based on the web-based screening tool report, the project area was assigned a Low Heritage Sensitivity. However, fieldwork has shown that some archaeological and heritage resources were present in the area and thus have a higher rating than the original screening rating.

During the fieldwork only one heritage feature/resource was identified. The site is a Stone Age lithic artefact exposure consisting of a total of 26 lithic artefacts seen in a 3x3m radius. The erosion through a footpath and a cutting in the soil profile (probably through the original building and levelling of the substation) have led to the exposure of lithics mostly made of basalt. The lithics appear to have been mostly edge-rolled (indicating alluvial transport) but some have fresher edges. The site may, in fact, be an alluvial gravel deposit from occupation of the landscape some 300,000-30,000 years ago, and the assemblage could possibly be attributed to the Middle Stone Age techno-complex, but further research is necessary. Due to the site’s quantity and possible subterranean context, it was given a low local significance with a heritage grading of III-C by the Heritage Specialist. The specialist has thus indicated that the project can potentially have a medium negative impact without mitigation and the impacts can be mitigated to a low negative.

The specialist indicated that during the construction phase, it is important to recognize any significant material being unearthed, making the correct judgment on which actions should be taken. A chance find procedure has thus been recommended by the specialist.

It is the opinion of the heritage specialists that the proposed project will have a direct impact on the identified heritage resource rated being of low heritage significance. However, with the implementation of recommended mitigation measures the overall impact on heritage resources will be reduced to acceptable levels during the activities of the project.

8.6 PALAEONTOLOGICAL IMPACT ASSESSMENT

A Palaeontological Impact Assessment was undertaken in accordance with the requirements of the NHRA, Act 25 of 1999. The web-based screening tool had a assigned the project area a Very High sensitivity and was confirmed by the Palaeontologist with actual palaeontology findings on site. Plant fossils, leaf imprints, fossilised leaf, infilled stem or trace fossil / tunnel were amongst the paleontological findings made on site.

The PIA indicates that based on the site investigation as well as desktop research the palaeontology specialist concluded that scientific and conservational interest in the area is relatively rare. A High Palaeontological Significance has been allocated for the construction phase of the development which is in agreement with the Very High Palaeontological Sensitivity allocated to the development area by the SAHRIS Palaeontological Sensitivity Map and DFFE Screening Tool. A low Palaeontological Significance has been allocated to the development post mitigation. The construction phase will be the only development phase impacting Palaeontological Heritage and no significant impacts are expected to impact the Operational and Decommissioning phases.

The Cumulative impact of the development is considered to be Low pre- mitigation and Very Low post mitigation and falls within the acceptable limits for the project. With mitigation measures implemented it is considered that the proposed development will not lead to damaging impacts on the palaeontological resources of the area. With the necessary mitigation measures in place, the construction of the development may be permitted in its

whole extent. It is consequently recommended that no further palaeontological studies, ground truthing and/or specialist mitigation are required pending the discovery of significant newly discovered fossils.

The Palaeontologist has thus recommended the following mitigation measures:

- The Environmental Control Officer (ECO), responsible for the development should be aware of the distinct possibility of finding fossils in the Burgersdorp Formation (Tarkastad Subgroup, Beaufort Group.
- The fossils identified during the site investigation was found ex-situ and in fragments. It is therefore recommended that the ECO should manually remove these blocks, before site clearance, to a safe distance outside the construction area.
- It is possible that with site clearance more fossils could be recovered from the site. If significant fossils are uncovered during surface clearing and excavations, the Chance find Protocol attached should be implemented immediately. These discoveries ought to be protected (if possible, in situ) and the ECO/EO must report to SAHRA (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za) so that correct mitigation (recording and collection) can be carry out by a palaeontologist.
- Before any fossil material can be collected from the development site the specialist involved would need to apply for a collection permit from SAHRA. Fossil material must be housed in an official collection (museum or university), while all reports and fieldwork should meet the minimum standards for palaeontological impact studies proposed by SAHRA (2012). It is consequently recommended that no further palaeontological heritage studies, ground truthing and/or specialist mitigation are required pending the discovery of significant newly discovered fossils.

8.7 MAPS SHOWING FEATURES AND SENSITIVITIES IDENTIFIED BY SPECIALISTS ON SITE

This subsection presents maps generated from specialist supplied GIS data relating to features identified on site and sensitivities assigned to the site. A3 sized versions of the maps have been appended to this report, refer to Appendix C for A3 sized Maps.

Figure 30: Terrestrial habitat sensitivity.

Figure 31: Avifauna Sensitivity

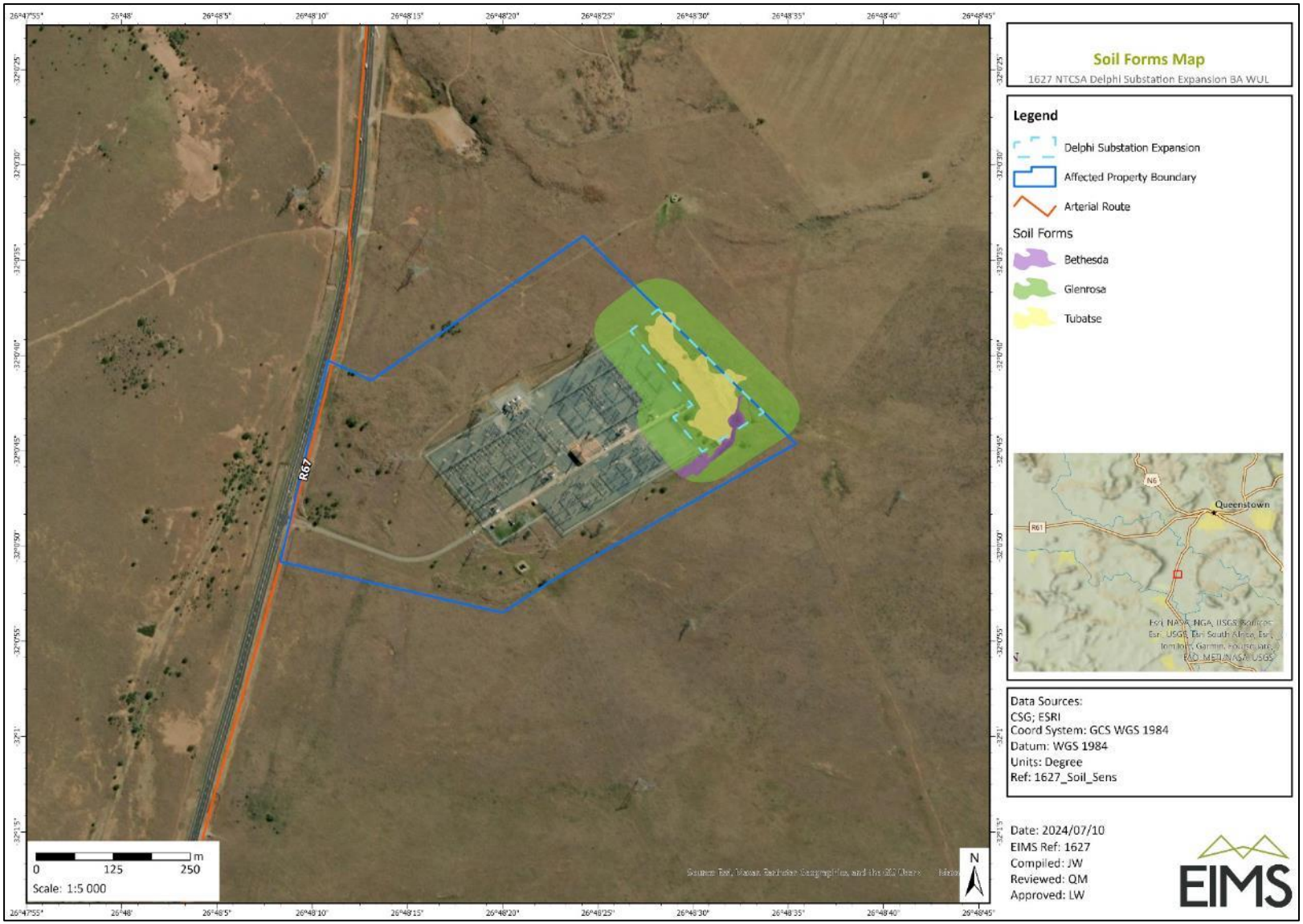

Figure 32: Soil Forms Map.

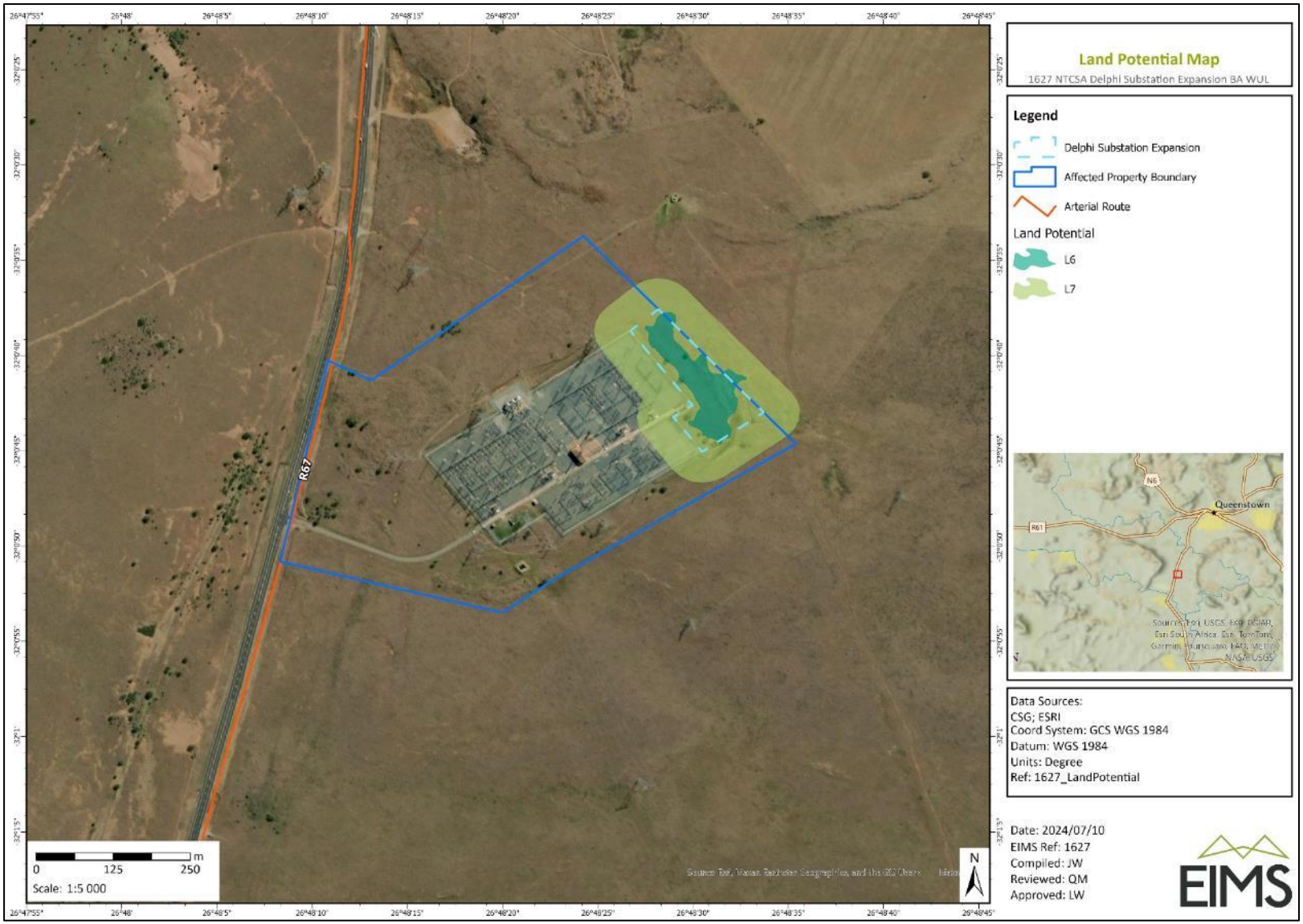

Figure 33: Land potential Map.

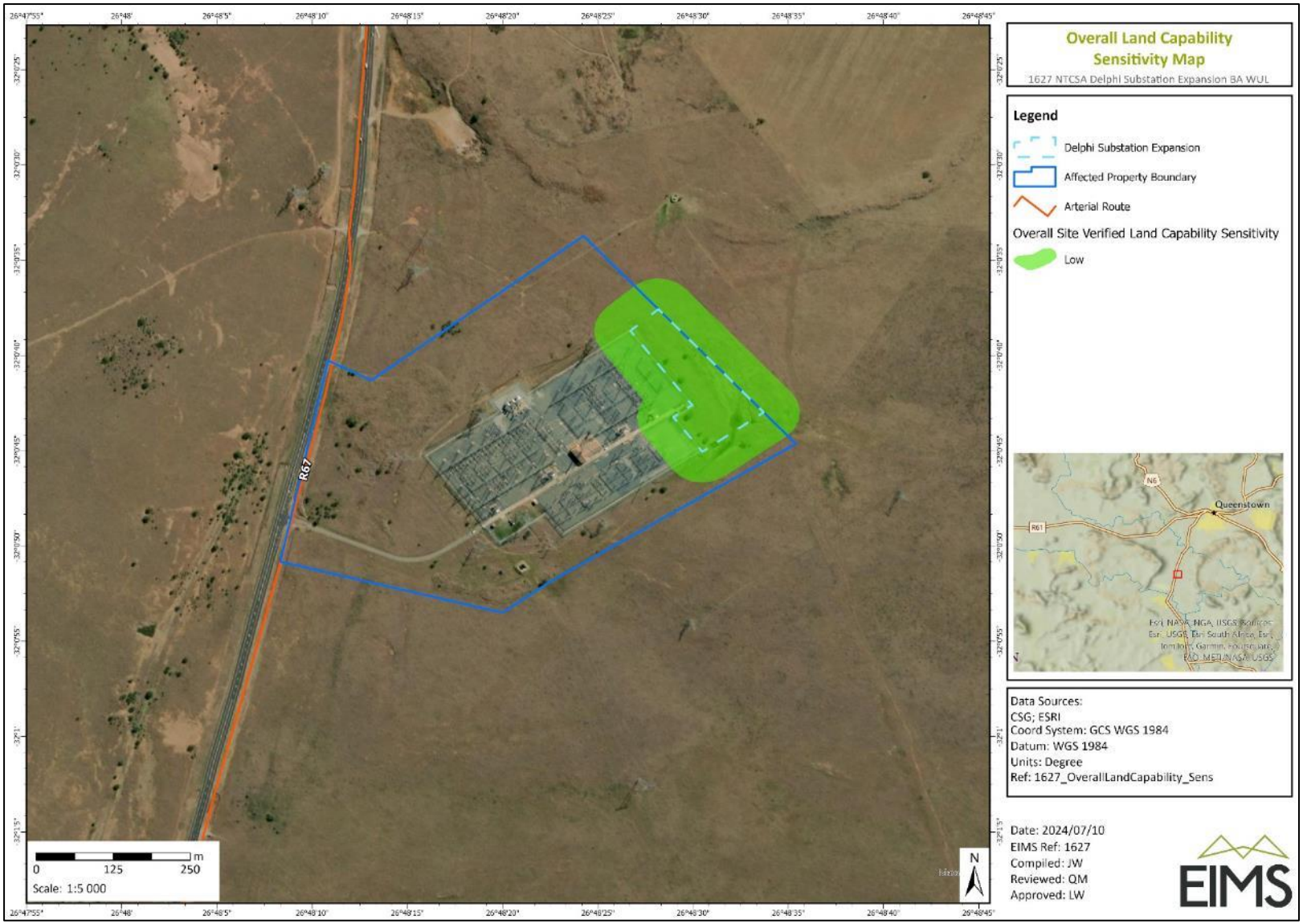

Figure 34: Overall Land Capability Site Sensitivity

Figure 35: Map showing heritage site (DE001) identified on site.

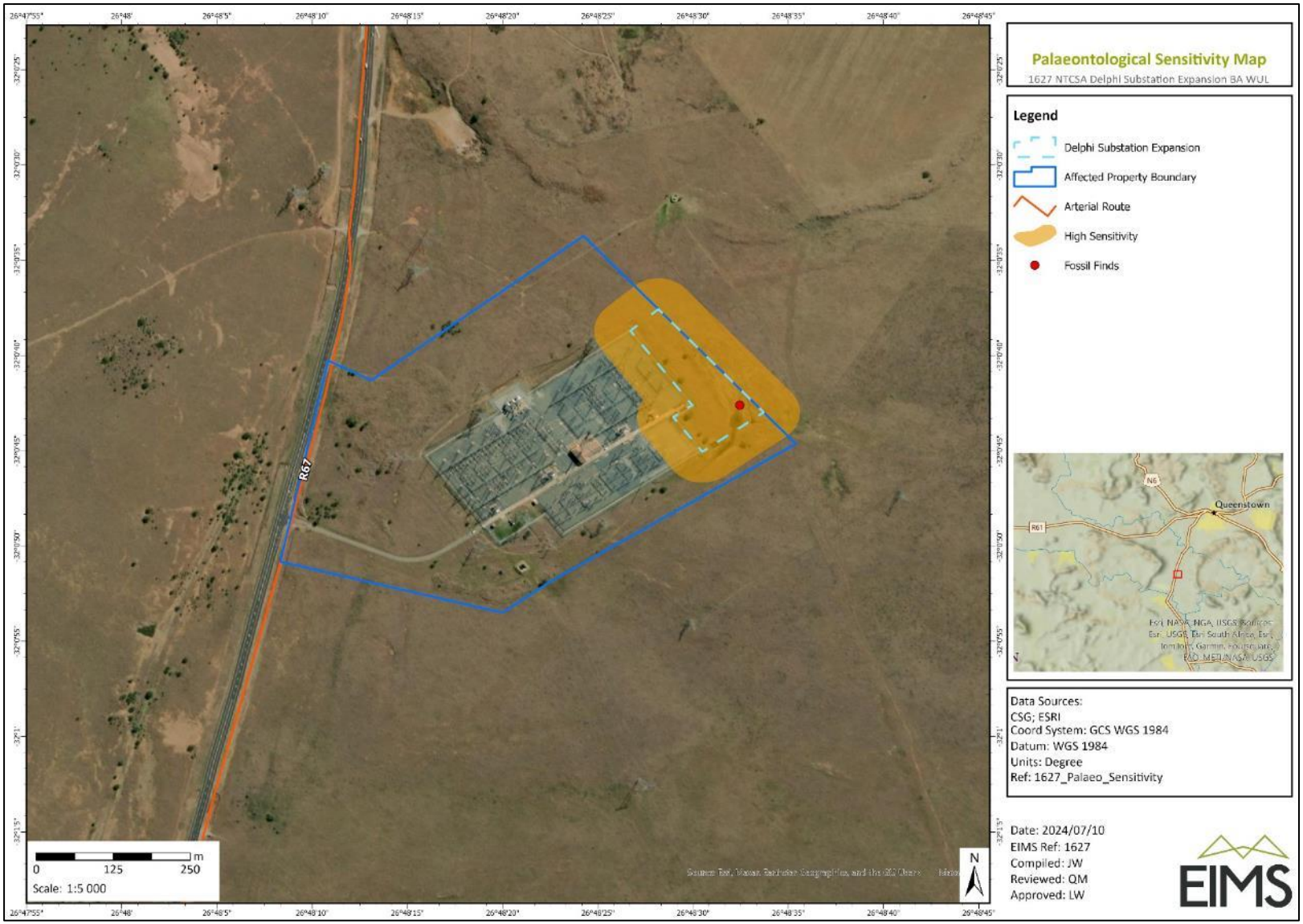

Figure 36: Site Palaeontology Sensitivity

9 ENVIRONMENTAL IMPACT ASSESSMENT

9.1 IMPACT ASSESSMENT METHODOLOGY

The impact significance rating methodology, as provided by EIMS, is guided by the requirements of the NEMA EIA Regulations 2014 (as amended). The broad approach to the significance rating methodology is to determine the environmental risk (ER) by considering the consequence (C) of each impact (comprising Nature, Extent, Duration, Magnitude, and Reversibility) and relate this to the probability / likelihood (P) of the impact occurring. This determines the environmental risk. In addition, other factors, including cumulative impacts and potential for irreplaceable loss of resources, are used to determine a prioritisation factor (PF) which is applied to the ER to determine the overall significance (S). The impact assessment will be applied to all identified alternatives. Where possible, mitigation measures will be recommended for impacts identified.

9.1.1 DETERMINATION OF ENVIRONMENTAL RISK

The significance (S) of an impact is determined by applying a prioritisation factor (PF) to the environmental risk (ER). The environmental risk is dependent on the consequence (C) of the particular impact and the probability (P) of the impact occurring. Consequence is determined through the consideration of the Nature (N), Extent (E), Duration (D), Magnitude (M), and reversibility (R) applicable to the specific impact.

For the purpose of this methodology the consequence of the impact is represented by:

$$\boldsymbol{C = \frac{(E + D + M + R) * N}{4}}$$

Each individual aspect in the determination of the consequence is represented by a rating scale as defined in Table 12 below.

Table 12: Criteria for Determining Impact Consequence.

Aspect	Score	Definition
Nature	- 1	Likely to result in a negative / detrimental impact
	+1	Likely to result in a positive / beneficial impact
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property boundary),
	3	Local (i.e. the area within 5 km of the site),
	4	Regional (i.e. extends between 5 and 50 km from the site
	5	Provincial / National (i.e. extends beyond 50 km from the site)
Duration	1	Immediate (<1 year)
	2	Short term (1-5 years),
	3	Medium term (6-15 years),
	4	Long term (the impact will cease after the operational life span of the project),
	5	Permanent (no mitigation measure or natural process will reduce the impact after construction).

Aspect	Score	Definition
Magnitude/ Intensity	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected),
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected),
	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way),
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease), or
	5	Very high / Don't Know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease).
Reversibility	1	Impact is reversible without any time and cost.
	2	Impact is reversible without incurring significant time and cost.
	3	Impact is reversible only by incurring significant time and cost.
	4	Impact is reversible only by incurring prohibitively high time and cost.
	5	Irreversible Impact

Once the C has been determined the ER is determined in accordance with the standard risk assessment relationship by multiplying the C and the P. Probability is rated / scored as per Table 13.

Table 13: Probability Scoring.

Probability	1	Improbable (the possibility of the impact materialising is very low as a result of design, historic experience, or implementation of adequate corrective actions; <25%),
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),
	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur),

The result is a qualitative representation of relative ER associated with the impact. ER is therefore calculated as follows:

ER= C x P

Table 14: Determination of Environmental Risk.

Consequence	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5

		1	2	3	4	5
	Probability					

The outcome of the environmental risk assessment will result in a range of scores, ranging from 1 through to 25. These ER scores are then grouped into respective classes as described in Table 15.

Table 15: Significance Classes.

Risk Score	Description
< 10	Low (i.e. where this impact is unlikely to be a significant environmental risk).
≥ 10; < 20	Medium (i.e. where the impact could have a significant environmental risk),
≥ 20	High (i.e. where the impact will have a significant environmental risk).

The impact ER will be determined for each impact without relevant management and mitigation measures (pre-mitigation), as well as post implementation of relevant management and mitigation measures (post-mitigation). This allows for a prediction in the degree to which the impact can be managed/mitigated.

9.1.2 IMPACT PRIORITISATION

Further to the assessment criteria presented in the section above, it is necessary to assess each potentially significant impact in terms of:

1. Cumulative impacts; and
2. The degree to which the impact may cause irreplaceable loss of resources.

To ensure that these factors are considered, an impact prioritisation factor (PF) will be applied to each impact ER (post-mitigation). This prioritisation factor does not aim to detract from the risk ratings but rather to focus the attention of the decision-making authority on the higher priority/significance issues and impacts. The PF will be applied to the ER score based on the assumption that relevant suggested management/mitigation impacts are implemented.

Table 16: Criteria for Determining Prioritisation.

Cumulative Impact (CI)	Low (1)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.
	Medium (2)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.
	High (3)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/ definite that the impact will result in spatial and temporal cumulative change.
Irreplaceable Loss of Resources (LR)	Low (1)	Where the impact is unlikely to result in irreplaceable loss of resources.
	Medium (2)	Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.
	High (3)	Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).

The value for the final impact priority is represented as a single consolidated priority, determined as the sum of each individual criteria represented in Table 16. The impact priority is therefore determined as follows:

Priority = CI + LR

The result is a priority score which ranges from 2 to 6 and a consequent PF ranging from 1 to 1.5 (Refer to Table 17).

Table 17: Determination of Prioritisation Factor.

Priority	Ranking	Prioritisation Factor
2	Low	**1**
3	Medium	**1.125**
4	Medium	**1.25**
5	Medium	**1.375**
6	High	**1.5**

In order to determine the final impact significance, the PF is multiplied by the ER of the post mitigation scoring. The ultimate aim of the PF is an attempt to increase the post mitigation environmental risk rating by a full ranking class, if all the priority attributes are high (i.e. if an impact comes out with a medium environmental risk after the conventional impact rating, but there is significant cumulative impact potential and significant potential for irreplaceable loss of resources, then the net result would be to upscale the impact to a high significance).

Table 18: Environmental Significance Rating

Value	Description
< -9	Low negative (i.e. where this impact would not have a direct influence on the decision to develop in the area).
≥ -9 < -17	Medium negative (i.e. where the impact could influence the decision to develop in the area).
≥ -17	High negative (i.e. where the impact must have an influence on the decision process to develop in the area).
0	No impact
< 9	Low positive (i.e. where this impact would not have a direct influence on the decision to develop in the area).
≥ 9 < 17	Medium positive (i.e. where the impact could influence the decision to develop in the area).
≥ 17	High positive (i.e. where the impact must have an influence on the decision process to develop in the area).

The significance ratings and additional considerations applied to each impact will be used to provide a quantitative comparative assessment of the alternatives being considered. In addition, professional expertise and opinion of the specialists and the environmental consultants will be applied to provide a qualitative comparison of the alternatives under consideration. This process will identify the best alternative for the proposed project.

9.2 IMPACTS IDENTIFIED

This Section presents the impacts that have been assessed during the BA Process. These impacts were identified by the EAP, the appointed specialists, as well as the preliminary input from the public. The impacts identified are listed in Table 19 below. It should be noted that this report will be made available to I&APs for review and comment and their comments and concerns will be addressed in the final BAR to be submitted to the competent authority for adjudication.

The impacts were assessed in terms of nature, significance, consequence, extent, duration and probability in line with the methodology described in Section 9.1 above. The impact assessment matrix (including pre- and post-mitigation assessment) is included in Appendix F. Without proper mitigation measures and continual environmental management, most of the identified impacts may potentially become cumulative, affecting areas outside of their originally identified zone of impact. The potential cumulative impacts have been identified, evaluated, and mitigation measures suggested.

When considering cumulative impacts, it is important to bear in mind the scale at which different impacts occur. There is potential for a cumulative effect at a broad scale, such as regional deterioration of air quality, as well as finer scale effects occurring in the area surrounding the activity. The main impacts which have a cumulative effect on a regional scale are related to the transportation vectors that they act upon. For example, air movement patterns result in localised air quality impacts having a cumulative effect on air quality in the region. Similarly, water acts as a vector for distribution of impacts such as contamination across a much wider area than the localised extent of the impacts source. At a finer scale, there are also impacts that have the potential to result in a cumulative effect, although due to the smaller scale at which these operate, the significance of the cumulative impact is lower in the broader context.

Table 19: Potential impacts identified.

#	Impacts Identified	Phase
1	Air Quality - Increase in air quality impacts/dust due to vegetation clearing and earthworks	Construction
2	Environmental contamination and degradation from oil, fuel spills and improper waste management.	Construction
3	Impact on Palaeontological Resources	Construction
4	Spread of alien and/or invasive species	Construction
5	Waste Management	Construction
6	Visual Impact	Construction
7	Visual Impact	Operation
8	Archaeological site disturbance	Construction
9	Cumulative impact on avifauna species and habitat	Construction
10	Destruction of natural vegetation and habitat	Construction

9.3 DESCRIPTION AND ASSESSMENT OF IMPACTS

9.3.1 ENVIRONMENTAL CONTAMINATION AND DEGRADATION FROM SPILLS AND WASTE

The proposed project, although with a localised footprint, will require mobilisation of construction teams, thus necessitating site establishment, mobilisation of machinery and installation of temporary ablution facilities. The aforementioned may also result in potential soil, water and / or environmental degradation of the environment through spill of hazardous substances such as fuels, oils and human waste. It is further anticipated that the proposed activities will result in increase presence of general waste. The following main impacts were identified in this respect.

- Environmental contamination and degradation from oil, fuel spills and improper handling of sanitary waste.
- Improper Waste Management

The impacts identified can, however, be mitigated through the implementation of the pre-approved Generic or the development or expansion of overhead electricity transmission and distribution infrastructure: Part B 5.14, 5.17, and 5.18 as shown in table below.

Impact	Phase	Pre-mitigation ER	Post-mitigation ER	Final Significance
Environmental contamination and degradation from oil, fuel spills and improper handling of sanitary waste.	Construction	-7.5	-3.75	-4.21875
Waste Management	Construction	-6.75	-4	-4
Mitigation Measures				
Compliance with the provisions of the Generic EMPr Part B 5.14, 5.17, and 5.18 **Sanitation** • Mobile chemical toilets are installed onsite if no other ablution facilities are available; • The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances; • Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body; b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied**,** and the contents are managed in accordance with the EMPr; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; f) Toilets are serviced regularly**,** and the ECO must inspect toilets to ensure compliance to health standards; • A copy of the waste disposal certificates must be maintained**.** **Safe storage, handling, use and disposal of hazardous substances.** • The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible; • All hazardous substances must be stored in suitable containers as defined in the Method Statement; • Containers must be clearly marked to indicate contents, quantities and safety requirements; • All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers; • Bunded areas to be suitably lined with a SABS approved liner;				

- An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis;
- All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS);
- All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet;
- Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available;
- The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers;
- The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall);
- The floor of the bund must be sloped, draining to an oil separator;
- Provision must be made for refuelling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained;
- All empty externally dirty drums must be stored on a drip tray or within a bunded area;
- No unauthorised access into the hazardous substance's storage areas must be permitted;
- No smoking must be allowed within the vicinity of the hazardous storage areas;
- Adequate fire-fighting equipment must be made available at all hazardous storage areas;
- Where refuelling away from the dedicated refuelling station is required, a mobile refuelling unit must be used. Appropriate ground protection such as drip trays must be used;
- An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times;
- The responsible operator must have the required training to make use of the spill kit in emergency situations;
- An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken;
- In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to *Section 5.7* for procedures concerning *storm and wastewater management* and 5.*8* for *solid and hazardous waste management.*

Workshop, equipment maintenance and storage

- Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area;
- During servicing of vehicles or equipment, especially where emergency repairs are affected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts;
- Leaking equipment must be repaired immediately or be removed from site to facilitate repair;
- Workshop areas must be monitored for oil and fuel spills;
- Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available;
- The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed;
- Water drainage from the workshop must be contained and managed in accordance Section 5.7: storm and wastewater management.

9.3.2 DESTRUCTION OF NATURAL VEGETATION AND HABITAT

Due to the nature of the project, the actual footprint of the substation infrastructure has a small, localised, impact as it is located in a previously disturbed area from the original construction of the exiting Delphi Substation. The proposed development requires the clearance of vegetation, earthworks for foundations, destruction of the existing oil dam and infilling, excavations for the new oil dam. The Terrestrial Ecologist has

assessed the site habitat and classified the vegetation as degraded grassland. Although located in a CBA2 area, the site sensitivity has been scored as low to very low by the terrestrial ecology and wetland specialists as such no significant impacts are expected to occur on site. The terrestrial ecology specialist has further confirmed that compliance to the conditions of the pre-approved Generic EMPr will be sufficient to control any impacts that may arise from the proposed development. As such, compliance to conditions stipulated under Part B 5.3, 5.10

The following potential main impacts on the biodiversity were considered for the construction phase of the proposed development. This phase refers to the period during construction when the proposed features are constructed; and is considered to have the largest direct impact on biodiversity:

- Spread of alien and/or invasive species
- Destruction of natural vegetation and habitat

Impact	Phase	Pre-mitigation ER	Post-mitigation ER	Final Significance
Spread of alien and/or invasive species	Construction	-14	-1.5	-1.5
Destruction of natural vegetation and habitat	Construction	-9	-4.5	-5.625
Mitigation Measures				
General: • Indigenous vegetation which does not interfere with the development must be left undisturbed; • Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species (No Species of Conservation Concern were verified by the Terrestrial Biodiversity Specialist during the site visit and site assessment); • Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing (No Species of Conservation Concern were verified by the Terrestrial Biodiversity Specialist during the site visit and site assessment); • Permits for removal must be obtained from the Department of Agriculture, Forestry and Fisheries prior to the cutting or clearing of the affected species, and they must be filed (No Species of Conservation Concern were verified by the Terrestrial Biodiversity Specialist during the site visit and site assessment); • The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals; • Trees felled due to construction must be documented and form part of the Environmental Audit Report; • Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris; • Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained; • A daily register must be kept of all relevant details of herbicide usage; • No herbicides must be used in estuaries; • All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance wi**th** Section 5.3: Access restricted areas.				

9.3.3 IMPACTS ON AVIFAUNA AND AVIFAUNAL HABITATS

The quantitative impact of the proposed project in isolation on avifauna is anticipated to be “medium” due to the expected adherence to mitigation. The cumulative impact of the proposed project on avifauna is anticipated to be “low”. The project area has undergone historic and current disturbance, like the disturbances that the local area has undergone.

After implementation of the mitigation measures as stipulated in the table below integrity and functionality of the natural habitat is not expected to deteriorate further as a result of the proposed development and no irreplaceable loss of avifauna, and their habitats is anticipated.

Impact	Phase	Pre-mitigation ER	Post-mitigation ER	Final Significance
Cumulative impact on avifauna species and habitat	Construction	-9.75	-6	-6.75
Mitigation Measures				
• The areas to be developed must be specifically demarcated to prevent movement into surrounding environments. • Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, must under no circumstances be fragmented or disturbed further. • All personnel should undergo environmental induction with regards to avifauna and in particular awareness about not harming, collecting, or hunting terrestrial species, and owls, which are often persecuted out of superstition. Signs must be put up to enforce this. • The duration of the construction must be kept to a minimum to avoid disturbing avifauna. • Outside lighting must be designed and limited to minimize impacts on avifauna. All outside lighting should be directed away from highly sensitive areas. Fluorescent and mercury vapor lighting should be avoided, and sodium vapor (red/green) lights should be used. • All project activities must be undertaken with appropriate noise mitigation measures to avoid disturbance to avifauna population in the region**.** • Infrastructure must be consolidated where possible in order to minimise the amount of ground and air space used. • **I**nfrastructure must be nest proofed and anti-perch devices placed on areas that can lead to electrocution**.** • All infrastructure, must be removed if the facility is decommissioned.				

9.3.4 VISUAL IMPACTS

The expansion of the Delphi Substation will result in additional landscape disturbance and removal of vegetation. However, these structures are proposed to be directly adjacent or between existing similar infrastructure and as a result the visual intrusion is likely to be limited. As such, the significance of this impact is deemed to be Low.

Impact	Phase	Pre-mitigation ER	Post-mitigation ER	Final Significance
Visual Impact	Construction	-8	-3.5	-3.5
Visual Impact	Operation	-7.5	-4.5	-4.5
Mitigation Measures				
• Construction camps must be established in appropriate locations prior to the commencement of construction activities. • Camps, offices etc. to be maintained in an orderly and tidy condition. • No littering of the site. • The construction site is to be adequately demarcated for the duration of construction activities.				

9.3.5 IMPACTS ON AIR QUALITY

The expansion of the Delphi substation is anticipated to result in air quality impacts during its construction phase as it will entail the clearing of vegetation, earthworks, plant machinery and earth moving trucks present on site. With the consideration that the proposed development is located in close proximity with the R57, the receptors identified are the drivers operating vehicles on the R57, however, the significance of this impact is deemed low.

Impact	Phase	Pre-mitigation ER	Post-mitigation ER	Final Significance
Air Quality	Construction	-6.75	-3.5	-3.5
Mitigation Measures				
• Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO; • Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re- vegetated or stabilised as soon as is practically possible; • Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present; • During high wind conditions, the ECO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level; • Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind; • Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO; • Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas; • Straw stabilisation must be applied at a rate of one bale/10 m² and harrowed into the top 100 mm of top material, for all completed earthworks; • For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.				

9.3.6 IMPACTS ON HERITAGE/ARCHAEOLOGICAL SITES

The project will encompass a range of activities during the construction phase, including ground clearance, establishment of construction camp areas and small-scale infrastructure development associated with the project.

It is possible that cultural material will be exposed during construction and may be recoverable, keeping in mind delays can be costly during construction, and as such must be minimised. Development surrounding infrastructure and construction of facilities results in significant disturbance, however foundation holes do offer a window into the past and it thus may be possible to rescue some of the data and materials. It is also possible that substantial alterations will be implemented during this phase of the project, and these must be catered for. Temporary infrastructure developments, such as construction camps and laydown areas, are often changed or added to the project as required. In general, these are low impact developments as they are superficial, resulting in little alteration of the land surface, but still need to be catered for.

During the construction phase, it is important to recognize any significant material being unearthed, making the correct judgment on which actions should be taken.

Impact	Phase	Pre-mitigation ER	Post-mitigation ER	Final Significance
Archaeological site disturbed	Construction	-14	-3.25	-3.65625

Mitigation Measures
DE001 to be given a 30m no-go buffer. If it s not possible the site must be recorded with a permit from the Eastern Cape provincial Heritage Authority (ECPHRA) in accordance with s35 of the NHRA. Test pits will be dug following the permit. Monitoring during site clearing in a 20-meter radius from the identified archaeological sites through the implementing of an archaeological watching brief. Upon completion a destruction permit must be applied for from the ECPHRA with the backing of the mitigation report. Implement a chance find procedure in case possible heritage finds are uncovered, as follows; • A heritage practitioner / archaeologist should be appointed to develop a heritage induction program and conduct training for the ECO as well as team leaders in the identification of heritage resources and artefacts during the implementation of the EMPr. • An appropriately qualified heritage practitioner / archaeologist must be identified to be called upon in the event that any possible heritage resources or artefacts are identified. • Should an archaeological site or cultural material be discovered during construction, the area should be demarcated, and construction activities halted. • The qualified heritage practitioner / archaeologist will then need to come out to the site and evaluate the extent and importance of the heritage resources and make the necessary recommendations for mitigating the find and the impact on the heritage resource. • Construction can commence as soon as the site has been cleared and signed off by the heritage practitioner / archaeologist.

9.3.7 IMPACTS ON PALAEONTOLOGIC RESOURCES

Several weathered plant and trace fossils were detected in the proposed development area, and it is possible that better preserved specimens may be located outside the development. Based on the site investigation as well as desktop research it is concluded that fossil heritage of scientific and conservational interest in the study area is relatively rare.

A Medium Palaeontological Significance (-16) has been allocated for the construction phase of the development pre-mitigation and a low significance post mitigation (-7). The construction phase will be the only development phase impacting Palaeontological Heritage and no significant impacts are expected to impact the Operational and Decommissioning phases. As the No-Go Alternative considers the option of 'do nothing' and maintaining the status quo, it will have a Neutral impact on the Palaeontological Heritage of the development. The Cumulative impact of the development is considered to be Low pre- mitigation and Very Low post mitigation and falls within the acceptable limits for the project. It is therefore considered that the proposed development will not lead to damaging impacts on the palaeontological resources of the area. The construction of the development may thus be permitted in its whole extent, as the development footprint is not considered sensitive in terms of palaeontological resources. It is consequently recommended that no further palaeontological heritage studies, ground truthing and/or specialist mitigation are required pending the discovery of newly discovered fossils.

Impact	Phase	Pre-mitigation ER	Post-mitigation ER	Final Significance
Impact on Palaeontological Resources	Construction	-16	-7	-7.875
Mitigation Measures				
• The Environmental Control Officer (ECO), responsible for the development should be aware of the distinct possibility of finding fossils in the Burgersdorp Formation (Tarkastad Subgroup, Beaufort Group.				

- The fossils identified during the site investigation was found ex-situ and in fragments. It is therefore recommended that the ECO should manually remove these blocks, before site clearance, to a safe distance outside the construction area.
- It is possible that with site clearance more fossils could be recovered from the site. If significant fossils are uncovered during surface clearing and excavations, the Chance find Protocol attached should be implemented immediately. These discoveries ought to be protected (if possible, in situ) and the ECO/EO must report to SAHRA (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za) so that correct mitigation (recording and collection) can be carry out by a palaeontologist.
- Before any fossil material can be collected from the development site the specialist involved would need to apply for a collection permit from SAHRA. Fossil material must be housed in an official collection (museum or university), while all reports and fieldwork should meet the minimum standards for palaeontological impact studies proposed by SAHRA (2012). It is consequently recommended that no further palaeontological heritage studies, ground truthing and/or specialist mitigation are required pending the discovery of significant newly discovered fossils.

10 CONCLUSIONS AND RECOMMENDATIONS

10.1 TERRESTRIAL ECOLOGY

The completion of a comprehensive desktop study, in conjunction with the results from the field survey, suggest there is a good confidence in the information provided. The survey ensured that there was a suitable ground truth coverage of the assessment area, and most habitats and ecosystems were assessed to obtain a general species (fauna and flora) overview and the major current impacts were observed. The ecosystem threat status is classified as Least Concern albeit the protection level is regarded as 'Not Protected' Ecosystem. Moreover, the proposed activity overlaps a CBA 2 and is directly adjacent to ESA 1.

The proposed development area is located on three habitat types, as identified by the specialist, namely:

- Degraded Grassland;
- Artificial wetland; and
- Modified habitats.

The above-mentioned degraded grassland habitat unit has been subjected human infringement, as it is located adjacent to an existing and active substation. With the artificial wetland also having been as a result of the development of the substation, refer to subsection 8.3 for details. As such the terrestrial ecologists concluded that the project area exists in a predominantly disturbed state, having been subjected to anthropogenic impacts such as human and vehicle ingress and the edge effects associated with the existing Delphi substation.

The completion of a Terrestrial Biodiversity Assessment has led to the disputing of the "Very High" Terrestrial biodiversity theme, "Medium" plant species theme, and "High" animal species theme identified / allocated by the National Environmental Screening Tool. The project area has been assigned "Low" sensitivities across the above-mentioned themes by the specialist.

The Project Area is classified as having a 'Very High' terrestrial biodiversity theme sensitivity as allocated by the National Environmental Screening Tool. This sensitivity is based on the Project Area overlapping a CBA 2 area. However, historic and current anthropogenic activities have disturbed and modified the Project Area with disturbances observed. Completion of the terrestrial biodiversity assessment led to the dispute of the 'Very High' classification. The Project Area is instead assigned an overall terrestrial sensitivity of 'Low'.

No significant impacts from a terrestrial ecology perspective are expected, subject to the implementation of the recommended mitigation measures. As such, it is the opinion of the specialist that the proposed development is favourable only if all mitigation measures provided in this and freshwater assessment report are implemented. It is recommended that care be taken during construction to adhere to mitigation measures. An AIP management plan must be implemented as a priority to prevent the spread and proliferation of AIP species to the surrounding natural areas.

10.2 AVIFAUNA

An avifaunal field survey was conducted following the assignment of a "High" sensitivity by the national web based Environmental Screening Tool with one species of conservation concern having been identified to be likely to occur in the project area. Desktop study undertaken by the Ecologist indicated that from the SABAP2 data, 250 avifauna species are expected for in the development area and surrounding areas. Of these, 16 are considered Species of Conservation Concern. However, the ecologist stated that there is not sufficient habitat, or the adjacent disturbance is too extensive for the species to nest in the development area, they can however still forage in the surrounding areas. No Species of Conservation Concern were recorded in the project area during the assessment only general species were recorded.

The specialist has disputed the "High" sensitivity assigned by the screening tool based on the proximity to the existing substation is unlikely to support and Species of Conservation Concern apart from species that could forage there and as such with adherence to the recommended mitigation measures, the specialist has assigned

a “Low” sensitivity. Furthermore, the quantitative impact of the proposed project in isolation on avifauna is anticipated to be “medium” due to the expected adherence to mitigation. The cumulative impact of the proposed project on avifauna is anticipated to be “low”. The project area has undergone historic and current disturbance, like the disturbances that the local area has undergone.

The avifauna specialist concluded that mitigation measures included in the Avifaunal Compliance Statement must be implemented to reduce the significance of the risk, but impacts are still possible. This is especially pertinent to electrocutions with the infrastructure. However, the specialist believes that the development can be favourably considered if the mitigation measures and management actions are implemented.

10.3 AQUATIC BIODIVRSITY

During the site assessment, one (1) artificial wetland unit along with three non-wetland watercourses, namely a canal, oil dams and a reservoir, were identified within site area and surrounding areas. It must be noted that the artificial wetland system presented wetland characteristics in the form of soil moisture (inundation) and vegetation (hydrophytes). Further investigation of the system revealed that it presented no hydromorphic soil characteristics, deeming it not to be a true wetland.

Due to no natural watercourses being identified within the 500m of the proposed development area. No ecological assessments were undertaken for the proposed project in relation to freshwater resources. The aquatic specialist validated the screening tool’s assigned ‘Low’ sensitivity.

The specialist concluded that the proposed project is not anticipated to have any impact on the aquatic biodiversity of the area as no natural freshwater resources were identified within the proposed development area. It is the specialist’s opinion is that the proposed development can be favourably considered for authorisation and the recommendation for its approval is not subject to any conditions.

10.4 SOILS AND AGRICULTURE

The soils specialist identified three representative soil forms within the proposed development area and within a 50m buffer area namely the Tubatse, Bethesda and Glenrosa soil forms. The assessment area is dominated by the restrictive Glenrosa soil form, with partially weathering rock fragments. The Glenrosa soil form is usually shallow, semi-impermeable to impermeable. Due to its restrictive morphology, the soil form has low productivity for crop production. Other identified soil forms include the Tubatse and Bethesda. The Tubatse soil form consists of an orthic topsoil horizon on top of a neocutanic horizon underlain with a lithic horizon below. The Bethesda soil from consists of an orthic topsoil horizon on top of a neocutanic horizon underlain with a hard rock substratum horizon below. These soils comprised of subsoil horizon that have been subjected to intermediate stages pf pedogenic alternation. The soils are deep but tends to limit root, water and air permeability which is critical in crop production under rainfed conditions.

The land capability classes of the above-mentioned soils have been determined to be class “III,” and “VI,” according to Smith (2006). The land capability class “III” is characterised by moderate limitations, with some erosion hazard and, which is suitable for rotation of crops and ley (50%). The land capability class “VI” is characterised by limitations precluding cultivation and is suitable for perennial vegetation, pasture and afforestation. A climate capability level 8 has been assigned to the area given the low Mean Annual Precipitation (MAP) and the high Mean Annual Potential Evapotranspiration (MAPE) rates. By using the determined land capability classes and the determined climate capability, land potential levels “L6” and “L7” were calculated. According to Smith (2006), land potential level “L6” is characterised by very restricted potential with regular and/or moderate limitations due to soil, slope, temperatures, or rainfall. The “L7” land potential level is characterised by low potential with severe limitations due to soil, slope, temperatures, or rainfall. Therefore, the proposed project area is considered non-arable.

The following land potential levels have been determined;

- Land Potential level 6 (this land potential level is characterised by very restricted potential. Regular and/or severe limitations due to soil, slope, temperatures or rainfall) and;

- Land potential level 7 (this land potential level is characterised by low potential. Severe limitations due to soil, slope, temperatures, or rainfall).

The soil/agriculture specialist has thus disputed the “medium” sensitivity assigned by the screening tool to the project area and has suggested that the project area is assigned a “low” agricultural sensitivity due to the presence of restrictive sensitive soil including Glenrosa soil form and the lack of irrigation infrastructure or annual crop fields.

The specialist concluded that the project the proposed substation expansion and access road extension will have an overall low residual impact on the agricultural production capability of the area. It is the specialists’ opinion that the proposed development can be favourably considered for authorisation and the recommendation for its approval is not subject to any conditions.

10.5 HERITAGE

A Heritage Impact Assessment was undertaken by a suitably qualified Heritage Specialist. Based on the web-based screening tool report, the project area was assigned a Low Heritage Sensitivity. However, fieldwork has shown that some archaeological and heritage resources were present in the area and thus have a higher rating than the original screening rating.

During the fieldwork only one heritage feature/resource was identified. The site is a Stone Age lithic artefact exposure consisting of a total of 26 lithic artefacts seen in a 3x3m radius. The erosion through a footpath and a cutting in the soil profile (probably through the original building and levelling of the substation) have led to the exposure of lithics mostly made of basalt. The lithics appear to have been mostly edge-rolled (indicating alluvial transport) but some have fresher edges. The site may, in fact, be an alluvial gravel deposit from occupation of the landscape some 300,000-30,000 years ago, and the assemblage could possibly be attributed to the Middle Stone Age techno-complex, but further research is necessary. Due to the site’s quantity and possible subterranean context, it was given a low local significance with a heritage grading of III-C by the Heritage Specialist. The specialist has thus indicated that the project can potentially have a medium negative impact without mitigation and the impacts can be mitigated to a low negative.

The specialist indicated that during the construction phase, it is important to recognize any significant material being unearthed, making the correct judgment on which actions should be taken. A chance find procedure has thus been recommended by the specialist, where:

- A heritage practitioner / archaeologist should be appointed to develop a heritage induction program and conduct training for the ECO as well as team leaders in the identification of heritage resources and artefacts during the implementation of the EMPr.
- An appropriately qualified heritage practitioner / archaeologist must be identified to be called upon in the event that any possible heritage resources or artefacts are identified.
- Should an archaeological site or cultural material be discovered during construction, the area should be demarcated, and construction activities halted.
- The qualified heritage practitioner / archaeologist will then need to come out to the site and evaluate the extent and importance of the heritage resources and make the necessary recommendations for mitigating the find and the impact on the heritage resource.
- Construction can commence as soon as the site has been cleared and signed off by the heritage practitioner / archaeologist.

It is the opinion of the heritage specialists that the proposed project will have a direct impact on the identified heritage resource rated being of low heritage significance. However, with the implementation of recommended mitigation measures the overall impact on heritage resources will be reduced to acceptable levels during the activities of the project.

10.6 PALAEONTOLOGY

A Palaeontological Impact Assessment was undertaken in accordance with the requirements of the NHRA, Act 25 of 1999. The web-based screening tool had a assigned the project area a Very High sensitivity and was confirmed by the Palaeontologist with actual palaeontology findings on site. Plant fossils, leaf imprints, fossilised leaf, infilled stem or trace fossil / tunnel were amongst the paleontological findings made on site.

The PIA indicates that based on the site investigation as well as desktop research the palaeontology specialist concluded that scientific and conservational interest in the area is relatively rare. A High Palaeontological Significance has been allocated for the construction phase of the development which is in agreement with the Very High Palaeontological Sensitivity allocated to the development area by the SAHRIS Palaeontological Sensitivity Map and DFFE Screening Tool. A low Palaeontological Significance has been allocated to the development post mitigation. The construction phase will be the only development phase impacting Palaeontological Heritage and no significant impacts are expected to impact the Operational and Decommissioning phases.

The Cumulative impact of the development is considered to be Low pre- mitigation and Very Low post mitigation and falls within the acceptable limits for the project. With mitigation measures implemented it is considered that the proposed development will not lead to damaging impacts on the palaeontological resources of the area. With the necessary mitigation measures in place, the construction of the development may be permitted in its whole extent. It is consequently recommended that no further palaeontological studies, ground truthing and/or specialist mitigation are required pending the discovery of significant newly discovered fossils.

The Palaeontologist has thus recommended the following mitigation measures:

- The Environmental Control Officer (ECO), responsible for the development should be aware of the distinct possibility of finding fossils in the Burgersdorp Formation (Tarkastad Subgroup, Beaufort Group.
- The fossils identified during the site investigation was found ex-situ and in fragments. It is therefore recommended that the ECO should manually remove these blocks, before site clearance, to a safe distance outside the construction area.
- It is possible that with site clearance more fossils could be recovered from the site. If significant fossils are uncovered during surface clearing and excavations, the Chance find Protocol attached should be implemented immediately. These discoveries ought to be protected (if possible, in situ) and the ECO/EO must report to SAHRA (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za) so that correct mitigation (recording and collection) can be carry out by a palaeontologist.
- Before any fossil material can be collected from the development site the specialist involved would need to apply for a collection permit from SAHRA. Fossil material must be housed in an official collection (museum or university), while all reports and fieldwork should meet the minimum standards for palaeontological impact studies proposed by SAHRA (2012). It is consequently recommended that no further palaeontological heritage studies, ground truthing and/or specialist mitigation are required pending the discovery of significant newly discovered fossils.

10.7 MEASURES TO BE INCLUDED IN THE ENVIRONMENTAL AUTHORISATION

It is recommended that mitigation measures, as outlined by the Heritage and Palaeontology Impact Assessments in relation to the implementation of a chance find procedure be included in the EA as follows:

1. <u>Archaeology/Heritage</u>

- A heritage practitioner / archaeologist should be appointed to develop a heritage induction program and conduct training for the ECO as well as team leaders in the identification of heritage resources and artefacts during the implementation of the EMPr.

- An appropriately qualified heritage practitioner / archaeologist must be identified to be called upon if any possible heritage resources or artefacts are identified.
- Should an archaeological site or cultural material be discovered during construction, the area should be demarcated, and construction activities halted.
- The qualified heritage practitioner / archaeologist will then need to come out to the site and evaluate the extent and importance of the heritage resources and make the necessary recommendations for mitigating the find and the impact on the heritage resource.
- Construction can commence as soon as the site has been cleared and signed off by the heritage practitioner / archaeologist.

2. Palaeontology

- The fossils identified during the site investigation was found ex-situ and in fragments. It is therefore recommended that the ECO should manually remove these blocks, before site clearance, to a safe distance outside the construction area.
- It is possible that with site clearance more fossils could be recovered from the site. If significant fossils are uncovered during surface clearing and excavations, the Chance find Protocol attached should be implemented immediately. These discoveries ought to be protected (if possible, in situ) and the ECO/EO must report to SAHRA (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za) so that correct mitigation (recording and collection) can be carry out by a palaeontologist.
- Before any fossil material can be collected from the development site the specialist involved would need to apply for a collection permit from SAHRA. Fossil material must be housed in an official collection (museum or university), while all reports and fieldwork should meet the minimum standards for palaeontological impact studies proposed by SAHRA (2012). It is consequently recommended that no further palaeontological heritage studies, ground truthing and/or specialist mitigation are required pending the discovery of significant newly discovered fossils.

10.8 ENVIRONMENTAL SENSITIVITY MAP

Environmental sensitivity mapping provides a strategic overview of the environmental, cultural and social assets in a region. The sensitivity mapping technique integrates numerous datasets (base maps and shapefiles) into a single consolidated layer making use of GIS software. Environmental sensitivity mapping is a rapid and objective method applied to identify areas which may be particularly sensitive to development based on environmental, cultural and social sensitivity weightings – which is determined by specialists' input within each respective field based on GIS or ground-surveys. Therefore, the sensitivity mapping exercise assists in the identification of low, medium and high sensitivity areas within the application area and features that may be of conservation importance.

The combined sensitivity map includes individual sensitivities according to Terrestrial, Aquatic and Avifaunal Ecology (the classification of habitats and wetlands undertaken by TBC in the respective reports are in agreement in terms of the significance of the habitats and as such have been considered as a single sensitivity), Soils/ Agriculture, Heritage and Palaeontology. However, it is noteworthy that some sensitivities identified by the EAP. The sensitivities related to other identified impacts such as those relating to waste management and air quality were excluded as their effects cannot be directly or accurately measured to ascertain spatial sensitivity.

A final sensitivity map which shows the proposed development areas avoiding all sensitivities / no-go areas where possible is presented in Figure 37.

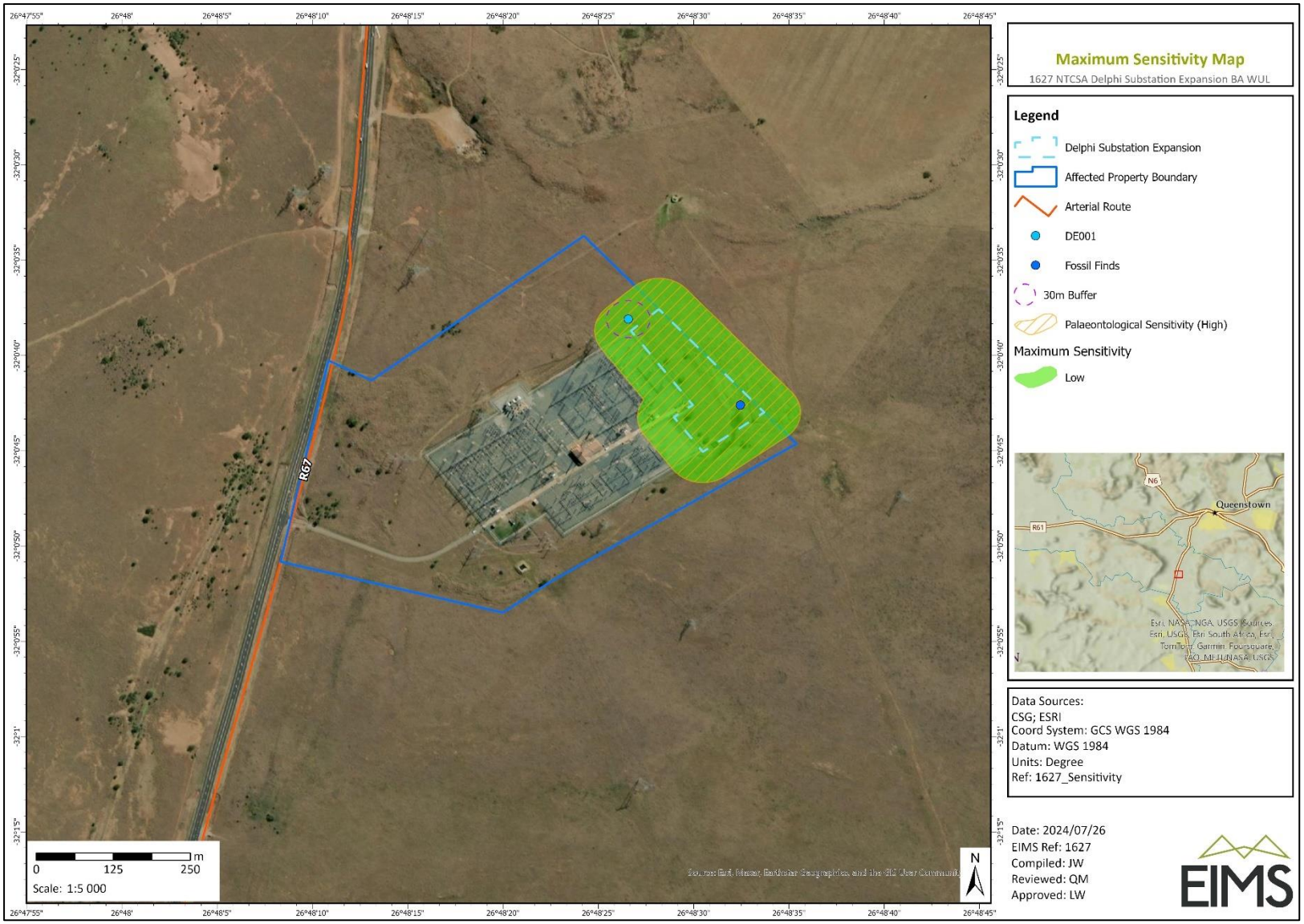

Figure 37: Final Site Sensitivity Map

10.9 EAP FINAL CONCLUSION AND RECOMMENDATION

The findings of the specialist studies conclude that there are no environmental fatal flaws that should prevent the proposed project from proceeding, provided that the recommended mitigation and management measures are implemented. Based on the nature and extent of the proposed project, the limited level of disturbance predicted as a result of the substation expansion, the findings of the specialist studies, and the understanding of the significance level of potential environmental impacts, it is the opinion of the EAP, that the significance levels of the identified negative impacts can be reduced to an acceptable level by implementing the recommended mitigation measures included in Part C of Appendix G: Generic Environmental Management Programme (GEMPr). It is thus recommended that the project should be authorized.

11 ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations relating to this assessment should be noted:

11.1 GENERAL

- In determining the significance of impacts, with mitigation, it is assumed that mitigation measures proposed in the report are correctly and effectively implemented and managed throughout the life of the project.

11.2 TERRESTRIAL ECOLOGY

- It is assumed that all information received from the client and landowner is accurate;
- All datasets accessed and utilised for this assessment are considered to be representative of the most recent and suitable data for the intended purposes;
- The assessment area (Project Area) was based on the footprint areas as provided by the client, and any alterations to the area and/or missing Geographic Information System (GIS) information pertaining to the assessment area would have affected the area surveyed and hence the results of this assessment;
- The project description was based on information provided by the client, and any alterations to the area and/or missing data pertaining to the development would have affected the area surveyed and hence the results of this assessment;
- The area was surveyed during a single site visit; therefore, this assessment does not consider temporal trends (note that the data collected is considered sufficient to derive a meaningful baseline);
- The single site visit was conducted during the early dry season (23rd of May 2024), and this means that certain flora and fauna would not have been present or observable due to seasonal constraints (note that the data collected is considered sufficient to derive a meaningful baseline);
- Whilst every effort was made to cover as much of the Project Area as possible, representative sampling was completed, and by its nature it is possible that some plant and animal species that are present within the Project Area were not recorded during the field investigations;
- This report must be considered in conjunction with the accompanying freshwater report (TBC, 2024). Delineation of water resources within this report was retrieved from the abovementioned freshwater report (TBC, 2024); and
- The Global Positioning System (GPS) used in the assessment has an accuracy of 5 m and consequently any spatial features may be offset by up to 5 m.

11.3 AVIFAUNA

- The PAOI was based on the project footprint area as provided by the client. Any alterations to the area and/or missing GIS information pertaining to the assessment area would have affected the area surveyed and hence the results of this assessment;
- The field survey was completed on 23 May 2024 for 1 day, this constitutes an early dry season survey. This assessment is deemed sufficient and no additional field assessments are required;
- Whilst every effort was made to cover as much of the PAOI as possible it is possible that some species that are present within the PAOI were not recorded during the field investigations due to their secretive behaviour; and
- The GPS used in the assessment has an accuracy of 5 m and consequently any spatial features delineated may be offset by up to 5 m.

11.4 AQUATIC/ WETLAND

- The assessment area was based on the spatial file provided by the client and any alterations to the development area may affect the results;
- Ground truthing in the extended 500 m regulated area was limited to accessible areas; and
- The seasonality of the site survey is not considered to be a limiting factor for this project.

11.5 SOILS/ AGRICULTURE

- Only the slopes affected by the proposed development have been assessed;
- It has been assumed that the extent of the development area provided by the responsible party is accurate;
- The GPS used for ground truthing is accurate to within five meters. Therefore, the soil and the observation site's delineation plotted digitally may be offset by up to five meters to either side; and
- No heavy metals have been assessed nor fertility been analysed for the relevant classified soils.

11.6 HERITAGE

- Not detracting in any way from the comprehensiveness of the fieldwork undertaken, it is necessary to realise that the heritage resources located during the fieldwork do not necessarily represent all the possible heritage resources present within the area. Various factors account for this, including the subterranean nature of some archaeological sites and existing vegetation cover. It should be noted most of the study area was accessible for the fieldwork survey.
- Fieldwork was also focussed on area that was not previously ploughed or disturbed by farming activity, thus focussing on areas with the highest potential to yield heritage resources.
- Therefore, should any heritage features and/or objects be located or observed outside the identified heritage sensitive areas during the construction activities, a heritage specialist must be contacted immediately Such observed or located heritage features and/or objects may not be disturbed or removed in any way until such time that the heritage specialist has been able to make an assessment as to the significance of the site (or material) in question. This applies to graves and cemeteries as well. If any graves or burial places are located during the development, the procedures and requirements pertaining to graves and burials will apply as set out below.

11.7 PALAEONTOLOGY

- The geology of the area is the focal point of geological maps, and the sheet explanations of the Geological Maps were not intended to focus on palaeontological heritage. Many inaccessible areas of South Africa have never been examined by palaeontologists, and data is typically dependent solely on aerial pictures. Locality and geological information in museums and university databases is out of date, and data acquired in the past is not always adequately documented.
- Comparable Assemblage Zones in other places are also used to provide information on the existence of fossils in areas that have not before been recorded. When similar Assemblage Zones and geological formations are used for Desktop studies, it is commonly assumed that exposed fossil exists within the footprint. As a result, a field assessment improved the accuracy of the desktop evaluation.

12 EAP UNDERTAKING

I **Brian Whitfield** herewith undertake that:

- the information provided in the foregoing report is correct to the best of my knowledge, and that the comments and inputs from stakeholders and Interested and Affected Parties has been correctly recorded in the report where applicable; and
- the information provided in the foregoing report is correct, and that the level of agreement with Interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

Signature of the EAP

Date: 2024/07/31

13 APPENDICES

Appendix A: EAPs CVs and Certificates

Appendix C 1: Maps

Appendix D 2: Avifaunal Compliance Statement

Appendix D 5: Heritage Impact Assessment

Appendix F: Impact Significance Rating