



DRAFT BASIC ASSESSMENT REPORT

**PROPOSED UMOYILANGA ANCILLARY INFRASTRUCTURE IN THE
SUNDAYS RIVER VALLEY LOCAL MUNICIPALITY AND THE
NELSON MANDELA BAY MUNICIPALITY,
EASTERN CAPE PROVINCE.**

DEFF REFERENCE NUMBER: TBC

APRIL 2021

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APRIL 2021

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INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

The Environmental Impact Assessment (EIA) Regulations, promulgated in terms of the National Environmental Management Act (NEMA) (Act no. 107 of 1998, as amended) dated 8th of December 2014, were amended in April 2017. In terms of Appendix 1 (3) of the EIA Regulations (2014, and subsequent 2017 amendments), a Basic Assessment Report (BAR) must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include –

SCOPE OF ASSESSMENT AND CONTENT OF BASIC ASSESSMENT REPORTS	
(a) Details of - (i) The EAP who prepared the report; and (ii) The expertise of the EAP, including a curriculum vitae.	Chapter 1 and Appendix A
(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.	Chapter 2
(c) A plan which locates the proposed activity or activities applied for as well as 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; or (ii) On land where the property has not been defined, the coordinates within which the activity is to be undertaken.	Chapter 2
(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.	Chapter 3
(e) A description of the policy and legislative context within which the development is proposed including (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.	Chapter 3
(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.	Chapter 4
(g) A motivation for the preferred site, activity and technology alternative.	Chapter 6
(h) A full description of the process followed to reach the proposed preferred 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 which have informed the identification of each alternative, including the nature, significance, consequence, extent, duration and probability of such identified 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; (vi) The methodology used in identifying and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	Chapter 6 and Chapter 7

<ul style="list-style-type: none"> (vii) 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 geographical, physical, biological, social, economic, heritage and cultural aspects; (viii) The possible mitigation measures that could be applied and level of residual risk; (ix) The outcome of the site selection matrix; (x) If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and (xi) A concluding statement indicating the preferred alternatives, including the preferred location of the activity. 	
<ul style="list-style-type: none"> (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 – <ul style="list-style-type: none"> (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. 	Chapter 8
<ul style="list-style-type: none"> (j) An assessment of each identified potentially significant impact and risk, including – <ul style="list-style-type: none"> (i) Cumulative impacts; (ii) The nature, significance and consequences 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 avoided, managed, or mitigated. 	Chapter 8
<ul style="list-style-type: none"> (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. 	Chapter 7
<ul style="list-style-type: none"> (l) An environmental impact statement which contains – <ul style="list-style-type: none"> (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 indicating any areas that should be avoided, including buffers; and (iii) A summary of the positive and negative impacts and risks of the proposed activity and identified alternatives. 	Chapter 9
<ul style="list-style-type: none"> (m) Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management outcomes for inclusion in the EMPr. 	Chapter 8
<ul style="list-style-type: none"> (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 the authorisation. 	<i>None to date</i>
<ul style="list-style-type: none"> (o) A description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed. 	Chapter 9
<ul style="list-style-type: none"> (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. 	Chapter 9
<ul style="list-style-type: none"> (q) Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post-construction monitoring requirements finalised. 	<i>Not Applicable</i>
<ul style="list-style-type: none"> (r) An undertaking under oath or affirmation by the EAP in relation to – <ul style="list-style-type: none"> (i) The correctness of the information provided in the reports; (ii) The inclusion of comments and inputs from stakeholders and I&APs; (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. 	Appendix B

(s) Where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post-decommissioning management of negative environmental impacts.	<i>None to date</i>
(t) Any specific information that may be required by the competent authority.	Appendix G
(u) Any other matters required in terms of section 24 (4)(a) and (b) of the Act.	<i>None to date</i>

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TABLE OF ACRONYMS

BA	Basic Assessment
BAR	Basic Assessment Report
BESS	Battery Energy Storage System
CLO	Community Liaison Officer
CV	<i>Curriculum Vitae</i>
DAFF	Department of Agriculture, Forestry and Fisheries
DEFF	Department of Environment, Forestry and Fisheries
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DM	District Municipality
DMRE	Department of Mineral Resources and Energy
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECPHRA	Eastern Cape Provincial Heritage Resources Authority
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMPr	Environmental Management Programme
FEPA	Freshwater Ecosystem Priority Area
ha	Hectares
IDP	Integrated Development Plan
IPP	Independent Power Producers
IRP	Integrated Resource Plan
ISCW	Institute for Soil, Climate & Water
kV	Kilovolt
LM	Local Municipality
LSA	Later Stone Age
MPRDA	Mineral and Petroleum Resources Development Act
MSA	Middle Stone Age
MW	Megawatt
MWe	Megawatts electric
MWh	Megawatt hours
MWp	Megawatt peak
NEMA	National Environmental Management Act
NEM:BA	National Environmental Management: Biodiversity Act
NEM:AQA	National Environmental Management: Air Quality Act
NEM:WA	National Environmental Management: Waste Act
NERSA	National Energy Regulator of South Africa
NFEPA	National Freshwater Ecosystem Priority Areas
NGI	National Geospatial Information

NHA	National Heritage Act
NMBM	Nelson Mandela Bay Municipality
NPAES	National Protected Areas Expansion Strategy
NSBA	National Spatial Biodiversity Assessment
NWA	National Water Act
O&M	Operations and Maintenance
PPP	Public Participation Process
QDS	Quarter Degree Square
REIPP	Renewable Energy Independent Power Producers
SAHRA	South African Heritage Resource Agency
SANBI	South African National Biodiversity Institute
SCC	Species of Conservation Concern
SDF	Spatial Development Framework
SEZ	Special Economic Zone
SRVLM	Sundays River Valley Local Municipality
SWSA	Strategic Water Source Area
ToR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change
WEF	Wind Energy Facility
WMA	Water Management Area
WRB	World Reference Base

1. PROJECT TEAM

1.1 CES COMPANY PROFILE (OVERVIEW)

CES has its head office in Makhanda (Grahamstown), where it was founded in 1990, to service a then fledgling market in the fields of Environmental Management and Impact Assessment. CES now has offices in Cape Town, Gqeberha/Port Elizabeth, East London, and Johannesburg as well as a wholly owned subsidiary in Maputo, Mozambique (Coastal & Environmental Services LDa., registered as an Environmental Practitioner with the Mozambican authorities).

The Company has grown apace with the increased market demand for environmental and social advisory services in Southern Africa and further afield. Our principal area of expertise lies in assessing the risks and impacts of the development process on the natural, social, and economic environments through, among other instruments, the environmental impact assessment (EIA) process. We believe that by offering these services, we contribute meaningfully towards sustainable development.

We adopt a scientific approach to our studies, underpinned by an informed and holistic view of the environment and a pragmatic approach to sustainable development. This results in deliverables that are robust, defensible, and credible. This is important for both the development and EIA processes, and as a result, the outputs of our studies demonstrate objectivity, sincerity, and professionalism. We believe that a balance between development and environmental protection can be achieved by skilful and careful planning and that our outputs reflect this. Our track record across twenty (20) African countries as well as in the Middle East and Asia is evidence of the value add we bring to the environmental and social advisory services we provide and has contributed to our deep understanding of the environmental and social challenges associated with establishing and operating facilities and infrastructure in emerging markets.

1.2 CES PROJECT TEAM

Please refer to [Appendix A](#) for full *Curriculum Vitae* of the project team.

DR ALAN CARTER

EAP and Project Leader

Dr Alan Carter is an Executive and the East London Branch Manager at CES. He has extensive training and experience in both financial accounting and environmental science disciplines with international accounting firms in South Africa and the USA. He is a member of the American Institute of Certified Public Accountants (licensed in Texas) and holds a PhD in Plant Sciences. He is also a certified ISO14001 EMS auditor with the American National Standards Institute. Alan has been responsible for leading and managing numerous and varied consulting projects over the past 25 years. He is a registered professional with the South African Council for Natural Scientific Professionals (SACNASP) and through Environmental Assessment Practitioners Association of South Africa (EAPASA).

MS CAROLINE EVANS

Project Manager and Report Reviewer

Caroline is a Principal Environmental Consultant with more than 7 and a half years' experience, and she is based in the Makhanda (Grahamstown) branch. She holds a BSc with majors in Environmental Science (distinction) and Zoology, as well as a BSc (Hons) in Environmental Science (distinction) both from Rhodes University. Her undergraduate degree included both commerce and natural sciences. Caroline's honours dissertation evaluated the economic impacts of degradation of the xeric subtropical thicket through farming practices, focusing on the rehabilitation potential of the affected areas in terms of carbon tax. She has a

broad academic background including statistics, economics, management, climate change, wetland ecology, GIS, rehabilitation ecology, ecological modelling, and zoology. Caroline has a strong focus on renewable energy and South African policy and legislation related to development.

MS ROSALIE EVANS

Lead Report Writer

Rosalie is a Senior Environmental Consultant with more than six (6) and a half years' experience and she is based in the Gqeberha (Port Elizabeth) branch. She holds a BA Honours Degree in Geography and Environmental Studies and a Degree in Social Dynamics with majors in Geography and Psychology, both from Stellenbosch University. Rosalie's honours dissertation analysed the role of small grains in soil carbon sequestration in the agricultural sector of the Western Cape. In 2016, Rosalie completed the Introduction to Environmental Impact Assessment Procedure Short Course by Coastal and Environmental Services and the Department of Environmental Science Rhodes University as well as the Estuary Management Short Course by Nelson Mandela University (NMU). In addition, Rosalie is a member of the Land Rehabilitation Society of Southern Africa (LaRSSA) and a member of the International Association for Impact Assessment (IAIA). Rosalie's key focus areas include renewable energy developments, linear developments, residential developments, and agricultural developments. Her main focuses include Project Management, Basic Assessment Processes, Scoping and EIA Processes, Part 1 and Part 2 Environmental Authorisation (EA) Amendment Processes, Reviewing Reports, the Public Participation Process (PPP), NEMA Section 24 (G) Applications and associated reports, MPRDA Section 53 Applications and GIS Mapping.

1.3 EXPERTISE OF THE PROJECT TEAM

Table 1.1 consists of the expertise of the project team and Table 1.2 consists of a few projects which indicate the project team's relevant experience.

Table 1.1: Expertise of the Project Team.

NAME	POSITION IN COMPANY	HIGHEST QUALIFICATION	YEARS' EXPERIENCE	ROLE ON PROJECT
DR ALAN CARTER	Executive	PhD in Plant Science (Rhodes University)	25+	<ul style="list-style-type: none"> EAP Project Leader
MS CAROLINE EVANS	Principal Environmental Consultant	BSc Honours in Environmental Science (Rhodes University)	7.5+	<ul style="list-style-type: none"> Project Manager Report Reviewer
MS ROSALIE EVANS	Senior Environmental Consultant	BA Honours in Geography and Environmental (Stellenbosch University)	6.5+	<ul style="list-style-type: none"> Lead Report Writer

Table 1.2: Project Team's Relevant Experience.

	PROJECT NAME	PROJECT DESCRIPTION
1.	Environmental Impact Assessment for the Umsobomvu Wind Energy Facility in the Eastern and Northern Cape Provinces	Umsobomvu Wind Power (Pty) Ltd, a subsidiary of EDF Renewables (Pty) Ltd., intend to construct the Umsobomvu Wind Energy Facility (277 MW) and associated infrastructure (400 kV and 132 kV powerlines, roads, switching stations, etc.) in the Northern and Eastern Cape Provinces of South Africa. CES was appointed to conduct the Scoping and EIA Process to obtain Environmental Authorisation for this project. This process included the management of nine (9) specialist assessments, four (4) of which were conducted using in-house consultants. This project received full Environmental Authorisation (EA) in 2016. Subsequent to obtaining EA, CES was appointed to undertake a Part 2 Amendment

	PROJECT NAME	PROJECT DESCRIPTION
		of the EA to split the EA into three (3) separate EAs, namely the Umsobomvu WEF, Coleskop WEF and Eskom MTS Infrastructure.
2.	Environmental Impact Assessment for the Dassiesridge Wind Energy Facility in the Eastern Cape Province	CES was appointed by Dassiesridge Wind Power (Pty) Ltd, a subsidiary of EDF Renewables (Pty) Ltd, to undertake the Scoping and EIA Process for the proposed Dassiesridge Wind Energy Facility (140 MW) and associated infrastructure (33 kV and 132 kV powerlines), situated near Uitenhage in the Eastern Cape.
3.	Environmental Impact Assessment for the Bayview Wind Farm in the Eastern Cape Province	CES was appointed by Bayview Wind Power (Pty) Ltd, a subsidiary of Engie Africa (Pty) Ltd, to undertake the Scoping and EIA Process for the proposed Bayview Wind Farm and associated powerlines, situated near Uitenhage in the Eastern Cape.
4.	Basic Assessment for the Scarlet Ibis Wind Energy Facility in the Eastern Cape Province	CES was appointed by Motherwell Wind Power (Pty) Ltd, a subsidiary of EDF Renewables (Pty) Ltd, to undertake the Basic Assessment Process for the proposed Scarlet Ibis Wind Energy Facility and associated powerlines, situated near Uitenhage in the Eastern Cape.
5.	Environmental Impact Assessment for the Albany Wind Energy Facility in the Eastern Cape Province	CES was appointed by Albany Wind Power (Pty) Ltd, a subsidiary of EDF Renewables (Pty) Ltd, to undertake the Scoping and EIA Process for the proposed Albany Wind Energy Facility and associated powerlines, situated near Makhanda (Grahamstown) in the Eastern Cape.
6.	Environmental Impact Assessment for the Waaihoek Wind Energy Facility in the KwaZulu-Natal Province	CES was appointed by Mainstream Renewable Power (Pty) Ltd to undertake the Scoping and EIA Process for the proposed Waaihoek Energy Facility, situated near Utrecht in KwaZulu-Natal.
7.	Environmental Impact Assessment for the Boulders Wind Farm in the Western Cape Province	CES was appointed by Vredenburg Windfarm (Pty) Ltd to undertake the Scoping and EIA Process for the proposed 140 MW Boulders Wind Energy Facility in Saldanha Bay Local Municipality in the Western Cape Province.
8.	Basic Assessment for the Chaba Battery Energy Storage System in the Eastern Cape Province	CES has been appointed by Great Kei Wind Power (Pty) Ltd, a subsidiary of EDF Renewables (Pty) Ltd, to undertake the Basic Assessment Process for the proposed Chaba Battery Energy Storage System, south of the Chaba Wind Energy Facility project site on the Great Kei Wind Energy Facility project site, near Komga in the Eastern Cape Province.
9.	Part 2 Amendment of the Motherwell Wind Energy Facility Environmental Authorisation in the Eastern Cape Province	CES was appointed by Motherwell Wind Power (Pty) Ltd, a subsidiary of EDF Renewables (Pty) Ltd, to undertake the Part 2 Amendment of the Motherwell Wind Energy Facility EA.
10.	Part 2 Amendment of the Ukomeleza Wind Energy Facility Environmental Authorisation in the Eastern Cape Province	CES was appointed by Ukomeleza Wind Power (Pty) Ltd, a subsidiary of EDF Renewables (Pty) Ltd, to undertake the Part 2 Amendment of the Ukomeleza Wind Energy Facility EA.
11.	Part 2 Amendment of the Dassiesridge Wind Energy Facility Environmental Authorisation in the Eastern Cape Province	CES was appointed by Dassiesridge Wind Power (Pty) Ltd, a subsidiary of EDF Renewables (Pty) Ltd, to undertake the Part 2 Amendment of the Dassiesridge Wind Energy Facility EA.
12.	Part 2 Amendment of the Great Kei Wind Energy Facility Environmental Authorisation in the Eastern Cape Province	CES was appointed by Great Kei Wind Power (Pty) Ltd, a subsidiary of EDF Renewables (Pty) Ltd, to undertake the Part 2 Amendment of the Great Kei Wind Energy Facility EA.
13.	Part 2 Amendment of the Haga Haga Wind Farm Environmental	CES has been appointed by WKN Windcurrent SA (Pty) Ltd to undertake a Part 2 Amendment of the Haga Haga Wind Energy Facility EA.

	PROJECT NAME	PROJECT DESCRIPTION
	Authorisation in the Eastern Cape Province	
14.	Part 2 Amendment of the Golden Valley Wind Energy Facility Environmental Authorisation in the Eastern Cape Province	CES was appointed by BioTherm Energy (Pty) Ltd to undertake a Part 2 Amendment of the Golden Valley Wind Energy Facility EA.
15.	Environmental Impact Assessment for the Grahamstown Wind Energy Facility in the Eastern Cape Province	CES was appointed by Plan 8 Infinite Energy (Pty) Ltd to undertake the Scoping and EIA Process for the proposed 66 MW Grahamstown Wind Energy Facility near Makhanda (Grahamstown) in the Eastern Cape Province.

2. PROJECT DESCRIPTION

2.1 PROJECT LOCALITY

Umoyilanga (Pty) Ltd is proposing the development of Ancillary Infrastructure near Kariega (Uitenhage) in the Sundays River Valley Local Municipality (SRVLM) and the Nelson Mandela Bay Municipality (NMBM), Eastern Cape Province. Table 2.1 consists of the affected properties for the proposed Ancillary Infrastructure.

Table 2.1: Affected Properties for the Ancillary Infrastructure.

	FARM NAME	21 DIGIT SG NUMBER	PORTION/FARM NO.	MUNICIPALITY
1	Blauw Baatjes Vley	C07600000000018900000	RE of Farm 189	SRVLM
2	Gringley	C07600000000018800000	Farm 188	NMBM



Figure 2.1: Google Earth Image of the Proposed Ancillary Infrastructure and Coordinate Points.



Figure 2.2: Google Earth Image of the Proposed Ancillary Infrastructure and Coordinate Points.

Table 2.2: Coordinates of the proposed Umoyilanga Ancillary Infrastructure components.

NO. IN FIGURE 2.1 & 2.2	COORDINATES (DEGREES, DECIMAL MINUTES)	
THERMAL		
1.	33° 36.003'S	25° 29.486'E
2.	33° 36.021'S	25° 29.541'E
3.	33° 36.066'S	25° 29.520'E
4.	33° 36.048'S	25° 29.465'E
BESS		
1.	33° 36.057'S	25° 29.542'E
2.	33° 36.075'S	25° 29.596'E
3.	33° 36.120'S	25° 29.574'E
4.	33° 36.103'S	25° 29.520'E
O&M BUILDING		
1.	33° 36.076'S	25° 29.599'E
2.	33° 36.086'S	25° 29.629'E
3.	33° 36.111'S	25° 29.617'E
4.	33° 36.101'S	25° 29.587'E
BUFFER YARD		
1.	33° 36.108'S	25° 30.983'E
2.	33° 36.107'S	25° 31.039'E
3.	33° 36.143'S	25° 31.040'E
4.	33° 36.144'S	25° 31.101'E
5.	33° 36.295'S	25° 31.099'E
6.	33° 36.294'S	25° 30.954'E
7.	33° 36.250'S	25° 30.953'E
8.	33° 36.250'S	25° 30.926'E
9.	33° 36.157'S	25° 30.926'E

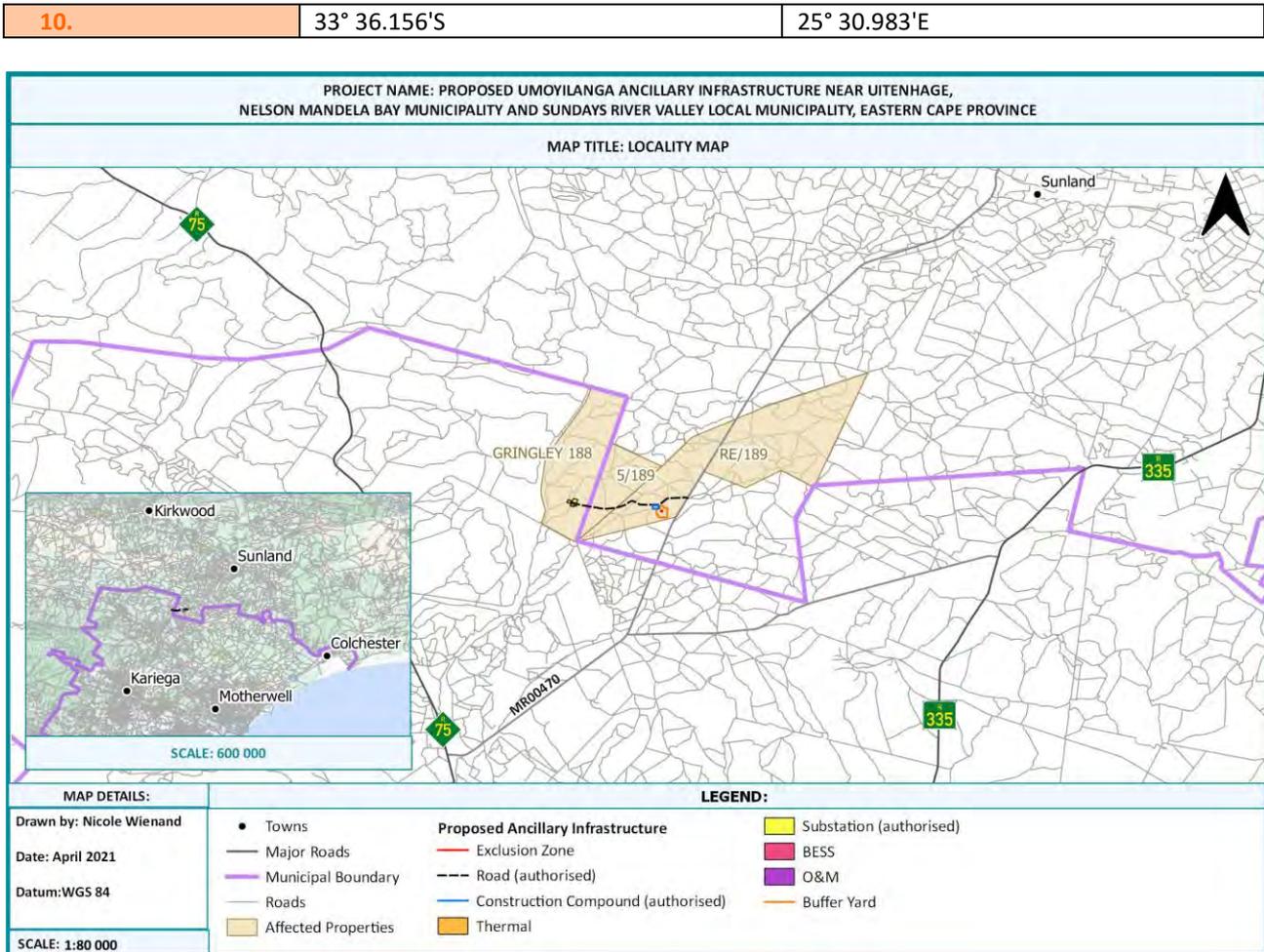


Figure 2.3: Locality Map of the Proposed Umoyilanga Ancillary Infrastructure.

2.2 PROJECT DESCRIPTION

The proposed Umoyilanga Ancillary Infrastructure consists of the following:

- Operations and Maintenance (O&M) Building of approximately 0.5 ha.
- Battery Energy Storage System (BESS) of approximately 0.8 ha with a temporary footprint of an additional 0.3 ha for construction, consisting of:
 - Storage capacity of 157.5 MWh (3.5 hours);
 - Lithium-ion batteries;
 - Up to 120 containers (each up to 40 m²) on a concrete platform. These will house the batteries, management system and auxiliaries;
 - Up to 60 transformer stations (up to 35 m² each);
 - Up to an additional 10 m² per container for cooling units;
 - Medium voltage cabling between containers and the switching station of up to 33 kV; and
 - 33 kV powerlines to connect the facility to the electrical grid (approximately 1 km).
- Thermal of approximately 0.8 ha with a temporary footprint of an additional 0.19 ha for construction. The thermal will include:
 - Power output: 6 MWe;
 - Voltage: 33 kV; and
 - Expected Operation: 200 hours maximum per year.
- A temporary construction area, a buffer yard, which will be a laydown area for the concrete tower sections. An area of 7.5 ha which includes a 1.5 ha exclusion zone for sensitive plants. The buffer yard will cover an area of 3.5 ha within the 7.5 ha area.

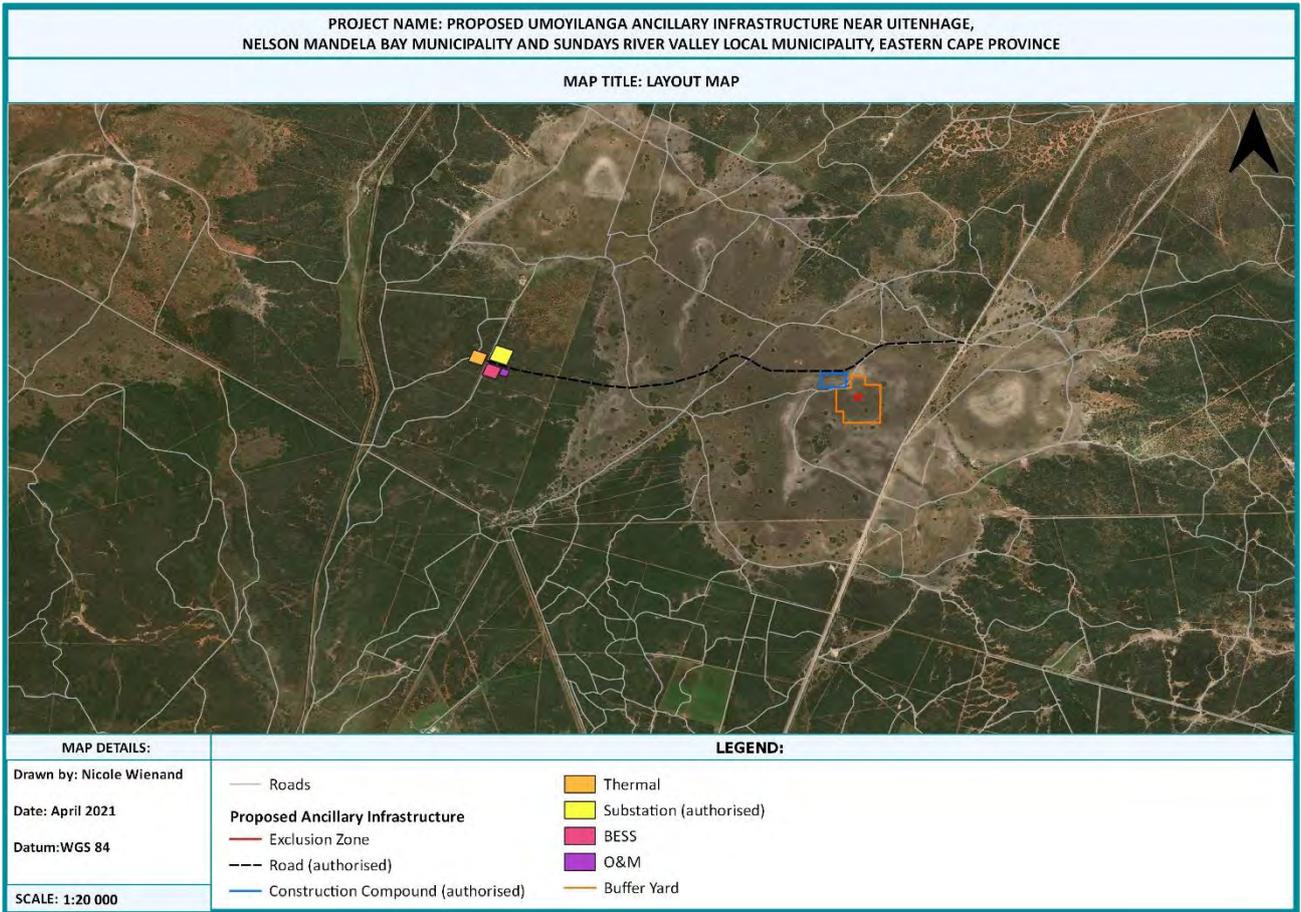


Figure 2.4: Layout Map of the Proposed Umoyilanga Ancillary Infrastructure.

3. RELEVANT LEGISLATION

Table 3.1 below consists of the legislation which is relevant to the proposed Umoyilanga Ancillary Infrastructure.

Table 3.1: Relevant Legislation, Policies & Guidelines.

TITLE OF LEGISLATION, POLICY OR GUIDELINE	RELEVANCE TO THE PROJECT
Constitution Act (Act No. 108 of 1996)	The Developer is obligated to ensure that the development of the proposed Umoyilanga Ancillary Infrastructure will not result in pollution and ecological degradation. In addition, the Developer is obligated to ensure that the proposed Umoyilanga Ancillary Infrastructure is ecologically sustainable and that it demonstrates economic and social development.
National Environmental Management Act (NEMA) (Act No. 107 of 1998, as amended) Environmental Impact Assessment Regulations (2014, and subsequent 2017 amendments)	The construction of the proposed Umoyilanga Ancillary Infrastructure triggers listed activities in terms of Listing Notice 1 of the NEMA EIA Regulations (2014, and subsequent 2017 amendments). A Basic Assessment (BA) Process must be undertaken and an Environmental Authorisation (EA) is required from the national Department of Environment, Forestry and Fisheries (DEFF) prior to the commencement of construction.
National Environmental Management: Biodiversity Act (NEM:BA) (Act No. 10 of 2004)	The proposed development of the proposed Umoyilanga Ancillary Infrastructure will require the clearance of vegetation, specifically Grassridge Bontveld and Sundays Valley Thicket (SANBI National Vegetation Map, 2018), which will impact on the biodiversity of the area. The proposed Umoyilanga Ancillary Infrastructure footprints could contain plant Species of Conservation Concern (SCC). The necessary permissions and/or permits must be obtained prior to the clearance of vegetation.
National Forestry Act (NFA) (Act No. 84 of 1998)	
Provincial Nature and Environmental Conservation Ordinance (No. 19 of 1974)	
National Water Act (NWA) (Act No. 36 of 1998, as amended)	Should the proposed Umoyilanga Ancillary Infrastructure trigger water use activities in terms of Section 21 of the National Water Act (NWA) (Act No. 36 of 1998, as amended), authorisation will be required from the Department of Water and Sanitation (DWS) prior to the commencement of the construction phase. Regardless of whether Section 21 water uses are triggered, the DWS remains a stakeholder which will be notified of the proposed Umoyilanga Ancillary Infrastructure development .
Mineral and Petroleum Resources Development Act (MPRDA) (Act No. 28 of 2002)	The Department of Mineral Resources and Energy (DMRE) should be made aware of the proposed development and any necessary approvals must be obtained from the Department of Mineral Resources and Energy (DMRE) prior to the commencement of these activities.
National Heritage Resources Act (NHRA) (Act No. 25 of 1999)	The proposed Umoyilanga Ancillary Infrastructure could impact sensitive heritage resources. The Eastern Cape Provincial Heritage Resources Authority (ECPHRA) will be informed of the proposed development and any relevant authorisation and/or permits must be obtained prior to the commencement of the construction phase.
National Environmental Management: Waste Act (NEM:WA) (Act No. 59 of 2008)	The Developer must ensure that all activities associated with the proposed Umoyilanga Ancillary Infrastructure address waste-related matters in compliance with the requirements of the NEM:WA. The Developer should communicate with the affected municipalities to ensure that waste is disposed of at a suitably registered landfill site.
Conservation of Agricultural Resources Act (CARA) (Act No. 43 of 1983)	The Department of Agriculture, Forestry and Fisheries (DAFF) should be informed of the proposed Umoyilanga Ancillary Infrastructure development. An invasive species monitoring, control, and eradication plan for land/activities under their control should be developed as part of the environmental plans in accordance with CARA.

Electricity Regulation Act (Act No. 4 of 2006)	The proposed Umoyilanga Ancillary Infrastructure must be in line with the Electricity Regulation Act.
Occupational Health and Safety Act (OHSA) (Act No. 85 of 1993)	The Developer must be mindful of the principles and broad liability and implications associated with the Occupational Health and Safety Act (OHSA) (Act No. 85 of 1993, and any amendments) and mitigate any potential impacts which are identified prior to the construction phase.
National Environmental Management: Air Quality Act (NEM:AQA) (Act No. 39 of 2004)	No major air quality issues are expected due to the proposed Umoyilanga Ancillary Infrastructure; however, the Developer should be mindful of the potential impact associated with dust generation as a result of vegetation clearance during the construction phase.
National Road Traffic Act (NRTA) (Act No. 93 of 1996)	The Developer must comply with all the requirements in terms of the National Road Traffic Act (NRTA) (Act No. 93 of 1996, and any amendments) during the various phases of the Umoyilanga Ancillary Infrastructure development.
National Veld and Forest Fire Act (NVFFA) (Act No. 101 of 1998)	The Developer must ensure that appropriate firefighting equipment, protective clothing, and trained personnel (for extinguishing fires) are present onsite during the construction of the Umoyilanga Ancillary Infrastructure.
Nelson Mandela Bay Municipality	The proposed Umoyilanga Ancillary Infrastructure must comply with/be in line with all relevant municipal by-laws, the Spatial Development Framework (SDF) and the Integrated Development Plan (IDP). Representatives from the affected municipality must be informed of the proposed development.
Sundays River Valley Local Municipality	

Table 3.2 provides the relevant listed activities, in terms of the NEMA EIA Regulations (2014, and subsequent 2017 amendments), which are likely to be triggered by the activities associated with the proposed Umoyilanga Ancillary Infrastructure.

The NEMA EIA Regulations (2014, and subsequent 2017 amendments) allow for a BA Process for activities with limited environmental impact (GN R. 983 and 985, 2014 or GN R. 327 and 324, 2017) and a more rigorous two (2) tiered approach to activities with potentially greater environmental impact (GN R. 984, 2014 or GN R. 325, 2017). This two (2) tiered approach includes both a Scoping and EIA Process. The proposed Umoyilanga Ancillary Infrastructure triggers the **BA Process**, due to the Listing Notice 1 activities, which will require an EA from the national DEFF.

Table 3.2: Listed Activities triggered by the proposed Umoyilanga Ancillary Infrastructure.

Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1 (GN R. 983)	Describe the portion of the proposed project to which the applicable listed activity relates.
27	<i>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation.</i>	The proposed Umoyilanga Ancillary Infrastructure requires the clearing of more than 1 ha of indigenous vegetation but less than 20 ha.
28(ii)	<i>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare.</i>	The proposed Umoyilanga Ancillary Infrastructure will be in excess of 1 ha (outside an urban area) and will occur on land which is used for agriculture (grazing).
Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3 (GN R. 985)	Describe the portion of the proposed project to which the applicable listed activity relates.
Not Applicable. No Listing Notice 3 (GN R. 985) activities have been identified for the proposed Umoyilanga Ancillary Infrastructure development.		
Activity No(s):	Provide the relevant Scoping and EIR Activity(ies) as set out in Listing Notice 2 (GN R. 984)	Describe the portion of the proposed project to which the applicable listed activity relates.

Not Applicable. No Listing Notice 2 (GN R. 984) activities have been identified for the proposed Umoyilanga Ancillary Infrastructure development.

4. NEED AND DESIRABILITY

Increasing pressure is being placed on countries internationally to reduce their reliance on fossil fuels, such as oil and coal, which contribute towards Greenhouse Gases (GHG) being emitted into the atmosphere and therefore contributing to climate change. Renewable energy resources, such as Wind Energy Facilities (WEFs) and Solar Photovoltaic (PV) facilities, are being implemented as alternative sources of energy at both a global and national scale.

South Africa has recognised the need to expand electricity generation capacity within the country. This is based on national policy and informed by ongoing planning undertaken by the Department of Mineral Resources and Energy (DMRE), previously the Department of Energy (DoE), and the National Energy Regulator of South Africa (NERSA). The draft South African Integrated Resource Plan (IRP, 2018) was released for public comment in August 2018, setting out a new direction in energy sector planning. The plan includes a shift away from coal, increased adoption of renewables and gas, and an end to the expansion of nuclear power. The South African Government has not yet communicated a timeline for the final adoption of the plan. The previous two (2) proposed IRP updates (in 2013 and 2016) were not adopted by Cabinet.

The revised plan, if adopted, would mark a major shift in energy policy. The policy aims to decommission a total of 35 GW (of 42 GW currently operating) of coal generation capacity from Eskom by 2050, starting with 12 GW by 2030, 16 GW by 2040 and a further 7 GW by 2050. The draft IRP (2018) also proposes a significant increase in renewables-based generation from wind and solar as well as gas-based generation capacity by 2030 and beyond, with no further new nuclear capacity being procured. Implementing the IRP update (2018) could bring South Africa close to meeting the upper range of its 2030 Nationally Determined Contribution (NDC) target. The implementation of the IRP (2018) would constitute significant progress in the transformation of the South African energy sector. To be in line with the Paris Agreement goals for mitigation, South Africa would still need to adopt more ambitious actions by 2050, such as expanding renewable energy capacity beyond 2030, fully phasing out coal by mid-century, and substantially limiting unabated natural gas use.

Eskom currently has a net output of 47 201 MWp, and it produces 85% of South Africa's electricity, which is equivalent to 40% of Africa's electricity. Renewable energy contributes to 5% of South Africa's electricity. This is mainly due to the targets set in the IRP (2010-2030) which aimed to change the electricity landscape from high coal (91.7%) to medium coal (48%) using electricity produced by the Independent Power Producers (IPP), with the utility company, Eskom, as the single buyer of the electricity.

The Renewable Energy Independent Power Producers (REIPPP) programme procured over 6.3 GW by 2017 and of this, 3.8 GW was already feeding into the grid. A further 2.4 GW was procured in 2018, which included twenty-seven (27) projects signed by the minister. The REIPPP attracted \$14.4 billion investment by December 2017. The concept is based on the public-private partnership model to increase new generation capacity. It also encourages industrialisation as it requires that at least 40% of the technologies involved should have local content. This results in job creation for the local communities, where manufacturing takes place.

The proposed Umoyilanga Ancillary Infrastructure is required to supplement the development of the authorised Umoyilanga (Dassiesridge) WEF. Therefore, the project need and desirability also relates to the need and desirability of renewable energy on a local, district, provincial, national and international level.

The need for the Umoyilanga Ancillary Infrastructure is to facilitate the authorised Umoyilanga (Dassiesridge) WEF development. The Umoyilanga (Dassiesridge) WEF and associated infrastructure received Preferred Bidder status in March 2021.

4.1 LOCAL AND DISTRICT LEVEL

The proposed Umoyilanga Ancillary Infrastructure, and the associated Umoyilanga (Dassiesridge) WEF, aim to promote local economic growth and development through the creation of direct and indirect employment opportunities.

4.1.1 Nelson Mandela Bay Municipality IDP, 2017/18 – 2021/22

The proposed Umoyilanga Ancillary Infrastructure is in line with the Nelson Mandela Bay Municipality (NMBM) IDP because it will supplement the Umoyilanga WEF development, which will contribute to renewable energy generation and create employment opportunities, a development priority in the NMBM IDP:

“Innovations in products and processes that use less energy or develop different kinds of energy will be especially sought after in coming decades. The world economy is moving away from carbon-based fuels and towards new sources of energy, driven in part by national and international goals and agreements. Narrow discussions of the impacts of cap-and-trade regimes or green jobs have obscured how profound a transition this will be. Shifting to new energy sources will affect the source of our energy, the cars we drive, the products we buy, the kinds of homes we live in, the shape and location of our communities, and the way we get from one place to another. This shift will also drive job creation, as the nation will need scientists to invent, entrepreneurs to take to market, and workers to build solar panels, wind turbines, biomass plants, advanced fuel cells, and other energy-efficient products. The city is well-positioned to position itself at the centre of the country’s green economy.” – NMBM IDP (2017/18 – 2021/22)

4.1.2 Sarah Baartman District Municipality Integrated Development Plan (IDP), 2017-22

The proposed Umoyilanga Ancillary Infrastructure is in line with the Sarah Baartman District Municipality (SBDM) Integrated Development Plan (IDP) because it will supplement the construction of the Umoyilanga WEF development and create employment opportunities, a key issue identified in the SBDM IDP:

“Renewable energy is poised to be one of the major areas of investment both within the country and internationally in the years ahead. The renewable energy sector is an area of great emerging opportunity for the Eastern Cape. It is a very dynamic sector currently, as the implications of extensive government commitment to renewable energy become apparent. New developments nationally are taking place very frequently and there are also many significant projects happening in the region. The anticipated massive growth in this sector provides major opportunities for growth in job creation in the province because of the potential of the area to host major renewable energy generation infrastructure as well as the potential to be a major manufacturer of such infrastructure leveraging off the automotive sector.” – SBDM IDP (2017-22)

4.1.3 Sundays River Valley Local Municipality (SRVLM) IDP, 2016/17

The SRVLM IDP (2016/17) makes little mention of renewable energy from wind power, other than *“The Sundays River Valley Municipality does not have waterfalls within its geographic location. It must also be noted that EIA’s and investigations by private sector actors are being done along the coastal areas between Nanaga and Alexandria for the suitability of wind turbines. Also, solar- powered geysers are installed in some areas, the rollout for these has been hampered by poor workmanship and slow progress. This notwithstanding, the Municipality has all intentions of rectifying the situation.”* and *“Council has supported the development of a wind farm [Inyanda-Rodepoort Wind Energy Facility] between Patensie and Kirkwood to a capacity of 160 MW.”* – SRVLM IDP (2016/17)

However, page 46 of the SRVLM IDP (2016/17) indicates that *“Census 2011 reveals that 75% of households have access to electricity. This is a reduction to 95% previously reported. This could be attributed to the increase in the number of households from 12050 to 14 578.”* The underlying regional development focus

projects therefore include infrastructure development, specifically improved and expanded infrastructure provision, “Energy: The current Eskom supply capacity will have to be dramatically improved to provide sufficient power requirements for expanding commercial and residential demand.” The proposed Umoyilanga Ancillary Infrastructure will supplement the authorised Umoyilanga WEF development and contribute to renewable energy infrastructure development/expansion within the SRVLM.

4.2 PROVINCIAL LEVEL

4.2.1 Eastern Cape Vision 2030 Provincial Development Plan, 2014

The proposed Umoyilanga Ancillary Infrastructure will supplement the authorised Umoyilanga WEF and it is in line with the Eastern Cape Vision 2030 Provincial Development Plan, specifically with the sections extracted below.

The Eastern Cape Vision 2030 Provincial Development Plan states the following as a development focal point:

“New investments in the electricity transmission and distribution networks are required to accommodate new generation capacity and strengthen grid capacity. This will improve network performance, network flexibility and the quality of supply for both economic and social activities.” – Eastern Cape Vision 2030 Provincial Development Plan (2014)

In addition, Strategic Action 1.1.6 states that:

“Strategic objective 1.1: Improved economic infrastructure that promotes new economic activity: Strategic action 1.1.6: Position the province as a key investment hub in the energy sector and ensure reliable energy supply to high-potential sectors

The province is positioning itself as an investment hub in the energy sector (wind farms, imported liquefied natural gas, shale-gas and nuclear energy). This will provide opportunities to develop the capital goods sector and heavy industries. This new investment could become a major catalyst for provincial economic development, particularly if the benefits and costs are well managed. Regional and local benefits accruing from new investment in the energy sector could include:

- *Cheaper energy (fuel and electricity), leading to cheaper food and transport, and more competitive labour markets.*
- *Employment in the construction, operation and maintenance of new energy facilities.*
- *Employment in the supply of manufactured components for the new energy facilities.*
- *Downstream linkages (for example, in the petro-chemicals industry based on shale gas).*
- *New rental collection systems to capture a portion of the surplus from these new investments.*

The province will need to position itself very carefully to ensure that these regional and local benefits are maximised, and costs (including externalities) are minimised.” – Eastern Cape Vision 2030 Provincial Development Plan (2014)

4.3 NATIONAL LEVEL

4.3.1 National Development Plan (NDP): Vision 2030, 2012

The National Development Plan (NDP) aims to promote sustainable and inclusive development in South Africa to reduce and ultimately eliminate poverty. Of the twelve (12) key focus areas of the NDP, the proposed Umoyilanga Ancillary Infrastructure will contribute to (1) an economy which will create more jobs, (2) improving infrastructure, and (3) transition to a low carbon economy.

The National Development Plan: Vision 2030 specifies the following relating to renewable energy. The proposed Umoyilanga Ancillary Infrastructure, associated with the authorised Umoyilanga WEF, will contribute to the increase in renewable energy development in South Africa, the improvement in infrastructure, the efficient use of natural resources and the creation of employment opportunities. It will also contribute to the country's ability to shift away from the reliance on coal-powered electricity and to move towards the decarbonisation of the economy.

“Aside from coal and natural gas, the country has abundant potential sources of renewable energy in the form of solar and wind energy, but these are currently comparatively expensive, particularly when the costs of storage and transmission are taken into account. Competitively priced energy is needed to exploit mineral resources, the earnings from which will be required to fund the transformation of South African society, as well as the promotion of a more diverse and inclusive economy.” – National Development Plan: Vision 2030 (2012)

“South Africa has significant renewable energy resources, particularly solar and wind. Efficient use of these natural resources is fundamental to achieving the shift away from coal-powered electricity towards the decarbonisation of the economy. The allocations in terms of the IRP for the electricity sector are a good starting point. The long-term trend towards increasing the price competitiveness of renewable energy in relation to fossil fuels will continue as capacity expands, and the ability to leverage natural resources in terms of renewable energy will give South Africa an increasingly competitive advantage as carbon constraints become more important in the global economy.” – National Development Plan: Vision 2030 (2012)

“Procuring at least 20 000MW of renewable electricity by 2030, importing electricity from the region, decommissioning 11 000MW of ageing coal-fired power stations and stepping up investments in energy-efficiency.” – National Development Plan: Vision 2030 (2012)

“The plan sets out steps that aim to ensure that, in 20 years, South Africa's energy system looks very different to the current situation: coal will contribute proportionately less to primary-energy needs, while gas and renewable energy resources – especially wind, solar and imported hydroelectricity – will play a much larger role.” – National Development Plan: Vision 2030 (2012)

4.3.2 National Climate Change Response White Paper, 2012

Climate change has been identified as one (1) of the greatest threats to sustainable development in South Africa. The National Climate Change Response White Paper obligates the country to make a fair contribution to the global effort to achieve the stabilisation of GHG concentrations in the atmosphere. The proposed Umoyilanga Ancillary Infrastructure, required to supplement the authorised Umoyilanga WEF development, complies with the National Climate Change Response White Paper as it will provide an alternative source of electricity, to fossil fuel-derived electricity, which will contribute to climate change mitigation.

“Policy decisions on new infrastructure investments must consider climate change impacts to avoid the lock-in of emissions-intensive technologies into the future. However, in the short-term, due to the stock and stage in the economic lifecycle of existing infrastructure and plant, the most promising mitigation options are primarily energy efficiency and demand side management, coupled with increasing investment in a renewable energy programme in the electricity sector.” – National Climate Change Response White Paper (2012)

4.3.3 GHG National Inventory Report, South Africa, 2000-2015

The proposed Umoyilanga Ancillary Infrastructure, associated with the authorised Umoyilanga WEF, will contribute to a reduction in the dependency on coal-based power.

“Electricity generation is the largest key GHG emission source in South Africa, mainly because it mainly uses sub-bituminous coal which is abundantly available in the country. Data on fuel consumption for public electricity generation was obtained directly from the national power producer for the period 2000 to 2015. Eskom supplies more than 90% of South Africa’s electricity needs (DoE, 2018). It generates, transmits and distributes electricity to various sectors, such as the industrial, commercial, agricultural and residential sectors.” – GHG National Inventory Report, South Africa (2000 – 2015)

4.3.4 Strategic Integrated Project (SIP) 20a

The Risk Mitigation (Independent) Power Purchase Procurement Programme (RMPPPP) forms part of the Energy Strategic Integrated Project No. 20, which was gazetted in Government Gazette 43547 on the 24th of July 2020. These projects are classified as Strategic Integrated Projects (SIP) and are to be managed within the requirements as set out in the Infrastructure Development Act (Act No. 23 of 2014).

As per the announcement of the Honourable Mr. Gwede Mantashe, Minister of the DMRE, on the 18th of March 2021, the following project received Preferred Bidder status within the RMPPPP:

- Umoyilanga Energy (Project No. RM-TA-0028-001)
“The SIP Steering Committee of 6 November 2020 confirmed that all projects classified with Preferred Bidder status within the RMPPPP will be regarded as SIP projects to be expedited in terms of Schedule 2 (Section 17(2)) of the Infrastructure Development Act (Act No. 23 of 2014).”

The proposed Umoyilanga Ancillary Infrastructure is required to connect the authorised Umoyilanga (Dassiesridge) WEF to the national grid. The Umoyilanga WEF received Preferred Bidder status in March 2021 and is a SIP 20a project.

4.4 INTERNATIONAL LEVEL

4.4.1 United Nations Framework Convention on Climate Change (UNFCCC), 1992 as amended

The UNFCCC is a framework convention which was adopted at the 1992 Rio Earth Summit. South Africa signed the UNFCCC in 1993 and endorsed it in August 1997. The objective of the UNFCCC is to:

“The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.” – UNFCCC (1992 and subsequent amendments)

“Commitment 1 – All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall: (c) Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all

relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors.” – UNFCCC (1992 and subsequent amendments)

“Recognizing that all countries, especially developing countries, need access to resources required to achieve sustainable social and economic development and that, in order for developing countries to progress towards that goal, their energy consumption will need to grow taking into account the possibilities for achieving greater energy efficiency and for controlling greenhouse gas emissions in general, including through the application of new technologies on terms which make such an application economically and socially beneficial...” – UNFCCC (1992 and subsequent amendments)

The proposed Umoyilanga Ancillary Infrastructure, required for the Umoyilanga WEF, is in line with the UNFCCC as the developments will contribute to the reduction in the production of GHG by providing an alternative energy source to fossil fuel-derived electricity in South Africa.

4.4.2 The Kyoto Protocol, 2002

The Kyoto Protocol, which was adopted in Kyoto (Japan) in 1997 and enforced in 2005, is an international agreement which is linked to the UNFCCC. The Protocol contains internationally binding emission reduction targets, as an instrument to reduce climate change. *“Under the Protocol, countries' actual emissions have to be monitored and precise records have to be kept of the trades carried out.”* The proposed Umoyilanga Ancillary Infrastructure, required for the Umoyilanga WEF, is in line with the Kyoto Protocol as the developments will provide an alternative energy source to fossil fuels.

5. PUBLIC PARTICIPATION PROCESS

5.1 PUBLIC PARTICIPATION PLAN

A Public Participation Plan was submitted to the DEFF on the 3rd of March 2021 and approved on the 4th of March 2021.

The approved Public Participation Plan included the following:

- All registered stakeholders and Interested and/or Affected Parties (I&APs), which were registered during the Scoping and EIA Process for the Dassiesridge WEF, an associated project which was undertaken on the same land parcels, will form part of the Stakeholder and I&AP Database for this BA Process. This Stakeholder Database was updated in 2020 during an amendment process. Any additional stakeholders and/or I&APs, that register during this public review period, will also be added to the database.
- A site notice board will be placed at the entrance to the site.
- All registered Stakeholders and I&APs will be notified of the availability of the Draft BAR and associated reports for public review via email and SMS (where applicable) notification.
- The public will be notified via a local newspaper advertisement (the UD Express). The advert will be published on the onset of the public review period. This advertisement will outline the availability of the Draft BAR for public review and will invite I&APs to view or download the documentation via the CES website and/or to register as I&APs on the project database.
- Due to the Covid-19 pandemic, no public meetings will be held during the release of the Draft BAR for public review. However, all comments received via telephone and SMS will be included in the Comments and Report Trail/Comments and Response Report to accommodate those that do not have access to the internet, those that are illiterate and those with disabilities. In addition, a brief project background can be provided verbally during telephone discussions, where necessary.
- Please refer to Table 5.1 for a copy of the registered Stakeholder and I&AP Database, which was maintained and updated throughout the Dassiesridge WEF Scoping and EIA Process, the subsequent amendments, and related BA Process(es).
- The Draft BAR will be published on the CES website during the public review period (<http://www.cesnet.co.za/public-documents>). The email and SMS notifications, as well as the advertisements, notifying the public and registered stakeholders and I&APs of the release of the Draft BAR, will include the link to the location of the Umoyilanga Ancillary Infrastructure documents on the CES website. All comments received and responses to the comments, will be recorded in the IRT/Comments and Response Report.
- A copy of the Draft BAR will also be made available at the Kariega (Uitenhage) public library. Uitenhage Town Library (Market Street, Uitenhage, 6229).
- All registered Stakeholders and I&APs, including the State departments which administer laws relating to matters affecting the environment, will be notified of the availability of the Draft BAR and associated reports for public review via email notification. The availability of the reports will also be published in a local newspaper advertisement (UD Express). The Draft BAR will be available for a thirty (30) day public review period.
- An IRT/Comments and Response Report will be compiled and updated during the public review period to include all comments received and responses to comments. After the public review period, the final IRT/Comments and Response Report, as well as the proof of correspondence, will be included in the Final BAR for submission to the Competent Authority.

Table 5.1: Registered Stakeholder and I&AP Database.

REGISTERED STAKEHOLDERS AND I&APs	NAME & SURNAME	EMAIL ADDRESS
Department of Environment, Forestry and Fisheries (DEFF)	Thabile Sangweni	TSangweni@environment.gov.za
	Mmamohale Kabasa	MKabasa@environment.gov.za
Department of Environmental Affairs: Biodiversity & Conservation	Mr Shonisani Munzhedzi	smunzhedzi@environment.gov.za
	Mr Simon Malete	smalete@environment.gov.za
Department of Economic Development, Environmental Affairs and Tourism (Eastern Cape)	Mrs Charmaine Struwig	Charmaine.Mostert@dedea.gov.za
	Mr Andries Struwig	Andries.struwig@deaet.ecape.gov.za
	Mr Dayalan Govender	Dayalan.Govender@dedea.gov.za
	Mr Gerry Pienaar	Gerry.Pienaar@dedea.gov.za
Department of Water & Sanitation (DWS) (Eastern Cape)	Ms Marisa Bloem	BloemM@dws.gov.za
	Mr Thabo Nokoyo	NokoyoT@dwa.gov.za
Department of Mineral Resources (DMR) (Eastern Cape)	Ms Brenda Ngebulana	Brenda.Ngebulana@dmr.gov.za
	Ms Zimkita Tyala	Zimkita.Tyala@dmr.gov.za
Department of Agriculture Forestry & Fisheries (DAFF)	Ms Thoko Buthelezi	thokob@daff.gov.za
	Ms Mashudu Marubini	MashuduMa@daff.gov.za
Department of Rural Development and Land Reform	Mr Patrick Maqabangqa	Patrick.Maqabangqa@drdlr.gov.za
Department of Energy	Ms Mokgadi Mathekgana	mokgadi.mathekgana@energy.gov.za
Eskom	Mr Eddie Leach	eddie.leach@eskom.co.za
Eskom: Renewable Energy	Mr John Geeringh	GeerinJH@eskom.co.za
Eastern Cape Parks and Tourism Agency (ECPTA)	Mr Wayne Erlank	Wayne.Erlank@ecpta.co.za
	Ms Leandri Gerber	leandri.gerber@ecpta.co.za
	Mr Brian Reeves	brian.reeves@ecpta.co.za
	Mr Patrick Zake	mtoto.zake@ecpta.co.za
	Ms Shanè October	Shane.October@ecpta.co.za
	Ms Asanda Sontsele	asanda.sontele@ecpta.co.za
Eastern Cape Development Corporation (ECDC)	Mr Rory Haschick	rory@ecdc.co.za
SALGA Eastern Cape	Ms Aseza Dlanjwa	adlanjwa@salga.org.za
	Mr Zamikhaya Mpulampula	zmpulampula@salga.org.za
	Ms Zona Cokie	zcokie@salga.org.za
Eastern Cape Provincial Heritage Resources Authority (ECPHRA)	Mr Lennox Zote	info@ecphra.org.za

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Landowners and Surrounding Landowners	Mike Muller (Son)	accounts@mikestractors.co.za
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REGISTERED STAKEHOLDERS AND I&APS	NAME & SURNAME	EMAIL ADDRESS
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Private Individual	Kerneels Scholtz	safaris@worldonline.co.za
Private Individual	Marisa Jacoby	marisa@publicprocess.co.za
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Private Individual	Rob Markham	rob@edentoaddo.co.za
Private Individual	Roxanne Lavita	roxanne.lavita@windlab.com
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Private Individual	Shanè October	Shane.October@ecpta.co.za
Private Individual	Gertrude Kelsey	cmaccounts@telkomsa.net
Private Individual	Jonathan Visser	jonathanv@iwpower.co.za

5.2 ACTIVITY ON LAND OWNED BY A PERSON OTHER THAN THE APPLICANT

In accordance with Section 39 (1), stipulated in Chapter 6 of the NEMA EIA Regulations (2014 and subsequent 2017 amendments), which states that *“If the proponent [Applicant] is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorisation in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake such activity on that land.”* EDF Renewables, on behalf of their subsidiary Umoyilanga (Pty) Ltd, has engaged with the landowners and received written consent, to undertake the proposed activities on the proposed properties, from the affected landowners.

5.3 OBJECTIVES OF THE PPP

In accordance with Section 40 (1), stipulated in Chapter 6 of the NEMA EIA Regulations (2014 and subsequent 2017 amendments), the purpose of public participation is to provide all potential or registered I&APs, including the Competent Authority, with the opportunity to access the relevant documents and information which could reasonably or potentially influence any decision with regards to the proposed Umoyilanga Ancillary Infrastructure Application for EA. The process aims to –

- Disclose activities planned by the Applicant and steps in the BA Process by the environmental team;
- Identify concerns and grievances raised by the I&APs;
- Respond to all the I&APs grievances and enquiries;
- Identify local expertise, needs and knowledge from the I&APs;
- Identify additional or new stakeholders and people affected by, or interested in, the proposed project;
- Gather perceptions and comments on the specialist studies;
- Ensure that all issues raised by I&APs have been adequately addressed and/or assessed; and
- Share the findings of the BA Process, such as significant impacts, mitigation measures, management actions, and monitoring programmes.

The PPP must include consultation with the following key members –

- The Competent Authority: National DEFF;
- All state departments which have laws relating to the proposed activity or the proposed location of the activity;
- The affected landowners and surrounding landowners;
- All organs of the state which have jurisdiction relating to the proposed activity or the proposed location of the activity; and
- The registered and potential I&APs.

5.4 LEGISLATIVE REQUIREMENTS

In accordance with Section 41 (2) of Chapter 6, the person conducting the PPP must provide notice using the following methods –

- a) Placing a notice board/(s) at a visible location, which are accessible to the public, on the boundary of the affected property and within proximity to the affected property must [please see Section 5.6 for photographs and coordinates of the onsite signage]. The notice board/(s) must –
 - Be at least 60 cm x 42 cm in size;
 - Specify whether a Basic Assessment Process or Scoping and EIA Process is triggered by the proposed activity;
 - Indicate the nature and location of the activity to which the application relates;

- Explain where further information can be obtained; and
- Stipulate the manner in which and the person to whom correspondence relating to the application or proposed application may be made.

b) Providing written notice to [please see proof included as Appendix F] –

- The owner and/or occupiers of the proposed site as well as the owner(s) and/or occupiers of the alternative sites;
- The owners and/or occupiers of the land adjacent to the site as well as the owners and/or occupiers of the land adjacent to the alternative sites;
- The municipal ward councillor of the affected property and the alternative sites (if different to the preferred alternative) as well as any organisation of ratepayers that represent the community in the affected area;
- The municipality which has jurisdiction in the area;
- All organs of the state which have jurisdiction relating to the proposed activity or the proposed location of the activity; and
- Any other parties as required by the Competent Authority.

c) Placing an advertisement in one (1) local newspaper and/or any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations [please see Section 5.6 for proof of advertisement];

d) If necessary, placing an advertisement in one (1) provincial newspaper or national newspaper if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken; and

e) Using reasonable alternative methods, as agreed to by the Competent Authority, in those instances where a person is interested but not able to participate in the process due to illiteracy, disability or any other disadvantage.

5.5 INTERESTED AND/OR AFFECTED PARTIES (I&APs)

According to Sections 42 to 44 of Chapter 6, the Applicant (or the EAP on behalf of the Applicant) must ensure the opening and maintenance of a register of I&APs and submit such register to the Competent Authority, which register must contain the names, contact details and address of (a) all persons who have submitted comments during the PPP on the proposed Umoyilanga Ancillary Infrastructure, (2) all individuals who have requested to register/registered on the project I&AP Database, and (3) all organs of state which have jurisdiction in respect of the activity to which the application relates. * **Please see Table 5.1 which includes all registered Stakeholders and I&APs which requested to be registered or were registered in accordance with the legislative requirements during the Dassiesridge WEF Scoping and EIA Process PPP as well as the EA Amendments.** Therefore, please note that individuals who registered on the original Dassiesridge (now Umoyilanga) WEF I&AP Database and subsequent EA amendments were automatically registered on the proposed Umoyilanga Ancillary Infrastructure Stakeholder and I&AP Database due to the proximity of the developments to each other and linkages between the developments.

The Draft BAR and associated reports will be available for **Public Review** for a period of thirty (30) days. The Draft BAR and associated reports are available on the CES website at <http://www.cesnet.co.za/public-documents> and a hard copy is available at the Kariega (Uitenhage) public library.

Please refer to **Section 5.6** on the following page, as well as **Appendix F** (Proof of PPP) and **Appendix G** (Comments and Response Report) for proof of PPP and copies of all comments received to date – as well as the responses to these comments. These sections will be updated subsequent to the completion of the Draft BAR public review period.

5.6 PROOF OF PUBLIC PARTICIPATION

5.6.1 Proof of Site Notice Board Placement



Plate 5.1: Proof of Site Notice board placed at 33°35'58.55"S, 25°31'25.84"E.

5.6.2 Proof of Advertisement

Please see Figure 5.1, the proof of advertisement which was placed in the UD Express on the 8th of April 2021. The UD Express is a local newspaper which is distributed free of charge in Uitenhage, Addo, Despatch, Kirkwood, and Sundays River Valley every Thursday.

5.6.3 Proof of Stakeholder and I&AP Notifications

Please see Appendix F: Proof of PPP, which includes copies of the notifications which were sent to registered Stakeholders and I&APs. Appendix F will be updated subsequent to the public review period.

5.6.4 Copies of Written Comments Received

Please see Appendix F: Proof of PPP, which includes copies of the written comments on the Umoyilanga Ancillary Infrastructure Draft BAR which were received during the 30-day public review period. Appendix F will be updated subsequent to the public review period.

5.6.5 Comments and Response Report

Please see Appendix G: Comments and Response Report which includes all the comments which were received during the 30-day public review period on the Umoyilanga Ancillary Infrastructure Draft BAR as well as the EAP and/or Applicant responses to these comments. Appendix G will be updated subsequent to the public review period.

6. ALTERNATIVES

6.1 REASONABLE AND FEASIBLE ALTERNATIVES

One (1) of the requirements of a BA Process is to investigate alternatives associated with a proposed project. Alternatives should include consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. In all cases, the no-go alternative must be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether the site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment.

“Alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- The property on which or location where it is proposed to undertake the activity;
- The type of activity to be undertaken;
- The design or layout of the activity;
- The technology to be used in the activity;
- The operational aspects of the activity; and/or
- The option of not implementing the activity (no-go alternative).

6.2 FUNDAMENTAL, INCREMENTAL AND NO-GO ALTERNATIVES

6.2.1 Fundamental Alternatives

Fundamental alternatives are developments which are completely different to the proposed project description and usually include the following:

- Alternative property or location where it is proposed to undertake the activity;
- Alternative type of activity to be undertaken; and
- Alternative technology to be used in the activity.

6.2.2 Incremental Alternatives

Incremental alternatives relate to modifications or variations to the design of a project that provide different options to reduce or minimise environmental impacts. Incremental alternatives which can be considered, include:

- Alternative design or layout of the activity; and
- Alternative operational aspects of the activity.

6.2.3 No-Go Alternative

It is mandatory to consider the “no-go” option during the BA Process. The “no-go” alternative refers to the current status quo and the risks and impacts associated with it. Some existing activities may carry risks and may be undesirable (e.g. an existing contaminated site earmarked for a development). The no-go is the continuation of the existing land use, i.e. to maintain the status quo.

6.3 ANALYSIS OF ALTERNATIVES

Table 6.1 includes the assessment of the alternatives which have been considered, including the advantages and disadvantages and provides further comments on the selected alternatives.

Table 6.1. Alternatives which were Considered during the Umoyilanga Ancillary Infrastructure Planning Stages.

ALTERNATIVE LEVEL	ALTERNATIVES	ADVANTAGES	DISADVANTAGES	FURTHER CONSIDERATION/ ASSESSMENT?	COMMENT
<u>PROPERTY OR LOCATION</u> This refers to the fundamental location options, and the environmental risks and impacts associated with such options.	Alternative location 1: Alternative 1 (Preferred alternative). Proposed Thermal, BESS and O&M Building on Farm 188, and Buffer Yard on RE/189.	→ The preferred alternative is suitably located to supplement the development of the authorised Umoyilanga (Dassiesridge) WEF and associated infrastructure.	→ The National Screening Tool Report (April 2021) identifies the following environmental sensitivities within the Ancillary Infrastructure location: <ul style="list-style-type: none"> • Very High Sensitivity – Aquatic Biodiversity Theme, Palaeontological Theme Sensitivity, and Terrestrial Biodiversity Theme. <i>See Ecological Assessment Report and Archaeological Assessment Report.</i> • High Sensitivity – Animal Species Theme. <i>See Ecological Assessment Report.</i> → Visual and Aesthetic Impact. → Archaeological Impacts – <i>See Archaeological Assessment Report.</i>	YES	No location/property alternatives were considered because the preferred alternative properties were selected based on their proximity to the authorised Umoyilanga (Dassiesridge) WEF and associated authorised infrastructure.
	Alternative location 2: Alternative 2 None considered.	N/A	N/A	N/A	
<u>TYPE OF TECHNOLOGY</u> This refers to the fundamental technology options and the environmental risks and impacts associated with such options.	Alternative technology 1: BESS Alternative 1 (Preferred alternative) Li-ion (lithium ion) Battery Technology.	→ High level of energy efficiency. → Relatively high energy density. → Fast response to unpredictable variations in demand and generation. → Low maintenance. → Relatively long lifecycle (approximately 10 to 15 years' service life). → Ability to offset grid fluctuations.	→ Fire risk due to thermal runaway. → High cost due to limited abundance in lithium. → Risk of annual degradation. → Battery protection is required. → Power and energy capacity directly coupled (expensive to scale).	YES	The technology alternatives which have been considered for the battery storage include Li-ion, Vanadium Redox Flow and Zinc-Hybrid technologies. Li-ion technology is the preferred alternative and the only technology which has been assessed further in the BA Process. The Li-ion technology is currently the most widely used

ALTERNATIVE LEVEL	ALTERNATIVES	ADVANTAGES	DISADVANTAGES	FURTHER CONSIDERATION/ ASSESSMENT?	COMMENT
		→ Currently the most widely used BESS technology.			and assessed battery storage technology available.
	<p>Alternative technology 2: BESS Alternative 2</p> <p>Vanadium Redox Flow Battery Technology.</p>	<p>→ Fast response to unpredictable variations in demand and generation.</p> <p>→ Long life cycle (approximately 20 years' service life).</p> <p>→ Almost unlimited energy capacity.</p> <p>→ No capacity degradation over time.</p> <p>→ Electrolyte is inherently safe and non-flammable.</p> <p>→ Independently tuneable power rating and energy capacity.</p>	<p>→ Scarce and expensive components (vanadium pentoxide).</p> <p>→ Lower level of energy efficiency.</p> <p>→ Lower energy density than solid state batteries (such as li-ion).</p> <p>→ Require the storage of electrolyte chemicals in tanks for which a Major Hazards Risk Assessment may be required due to storage of hazardous goods.</p> <p>→ Requires a larger development footprint (unless the containers are stacked).</p> <p>→ Currently not market competitive.</p>	NO	
	<p>Alternative technology 2: BESS Alternative 3</p> <p>Zinc-hybrid Ion Battery Technology.</p>	<p>→ Relatively low cost.</p> <p>→ Among the latest advanced chemistries.</p>	<p>→ Currently an emerging technology with limited deployment and a lack of available technical information.</p> <p>→ Currently not market competitive.</p>	NO	
<p>DESIGN OR LAYOUT</p> <p>This relates mostly to alternative ways in which the proposed development or activity can be physically laid out on the ground to minimise or</p>	<p>Alternative layout 1: Alternative 1 (Preferred alternative)</p> <p>Proposed Thermal, BESS and O&M Building on Farm 188, and Buffer Yard on RE/189.</p>	<p>→ The preferred alternative is suitably located to supplement the development of the authorised Umoyilanga (Dassiesridge) WEF and associated infrastructure.</p> <p>→ The preferred alternative is suitably located to make use of the authorised access road and the authorised construction compound.</p>	<p>→ The National Screening Tool Report (April 2021) identifies the following environmental sensitivities within the Ancillary Infrastructure location:</p> <ul style="list-style-type: none"> • Very High Sensitivity – Aquatic Biodiversity Theme, Palaeontological Theme Sensitivity, and Terrestrial Biodiversity Theme. See <i>Ecological Assessment Report and Archaeological Assessment Report</i>. 	YES	The preferred layout alternative of the Ancillary Infrastructure components is suitably designed to support the authorised Umoyilanga (Dassiesridge) WEF and associated infrastructure.

ALTERNATIVE LEVEL	ALTERNATIVES	ADVANTAGES	DISADVANTAGES	FURTHER CONSIDERATION/ ASSESSMENT?	COMMENT
reduce environmental risks or impacts			<ul style="list-style-type: none"> • High Sensitivity – Animal Species Theme. <i>See Ecological Assessment Report.</i> <p>→ Visual and Aesthetic Impact.</p> <p>→ Archaeological Impacts – <i>See Archaeological Assessment Report.</i></p>		
	<p>Alternative layout 2: Alternative 2</p> <p>None considered.</p>	N/A	N/A	N/A	
<p><u>OPERATIONAL ASPECTS</u></p> <p>This relates mostly to alternative ways in which the development or activity can operate in order to reduce environmental risks or impacts</p>	<p>Alternative operational activities:</p> <p>Careful implementation of the EMPr (with updates to the working document) to inform the operational aspects of the Umoyilanga Ancillary Infrastructure.</p>	<p>→ The operational aspects of the Umoyilanga Ancillary Infrastructure will be informed by the EMPr, which will be updated to include the recommendations, mitigation measures and conditions of the BA Process (including Stakeholder and I&AP input), the specialists' impact assessments, the Environmental Authorisation, and any micro-siting recommendations.</p> <p>→ The implementation of- and the success of the implementation of these measures should be monitored by the appointed Environmental Control Officer (ECO).</p>	<p>→ Unanticipated environmental and/or social impacts could still occur during the operation of the Umoyilanga Ancillary Infrastructure which will require the EMPr to be updated with additional recommendations and mitigation measures, as frequently as required, during both the construction and the operation of the Umoyilanga Ancillary Infrastructure.</p>	YES	<p>The EMPr will inform the operational activities of the Umoyilanga Ancillary Infrastructure and should be updated with additional recommendations and/or mitigation measures when required. The implementation of the recommendations and mitigation measures in the EMPr will significantly reduce the environmental and social risks associated with the Umoyilanga Ancillary Infrastructure.</p>
<p><u>TYPE OF ACTIVITY</u></p> <p>This refers to the fundamental activity options</p>	<p>Alternative activity 1:</p> <p>Alternative 1 (Preferred alternative)</p>	<p>→ The preferred alternative is suitably located to supplement the development of the authorised Umoyilanga</p>	<p>→ Potential environmental and social impacts due to the construction and operation of the Umoyilanga Ancillary Infrastructure.</p>	YES	<p>Both the preferred activity, the construction of the Umoyilanga Ancillary Infrastructure (Alternative 1), and the No-Go</p>

ALTERNATIVE LEVEL	ALTERNATIVES	ADVANTAGES	DISADVANTAGES	FURTHER CONSIDERATION/ ASSESSMENT?	COMMENT
<p>within the proposed location.</p>	<p>Proposed Thermal, BESS and O&M Building on Farm 188, and Buffer Yard on RE/189.</p>	<p>(Dassiesridge) WEF and associated infrastructure. → The preferred alternative is suitably located to make use of the authorised access road and the authorised construction compound.</p>			<p>Option (Alternative 2) have been assessed further.</p>
	<p>Alternative activity 2: Alternative 2</p> <p>The “no-go” option, which entails no development within the proposed location.</p>	<p>→ These sections of the properties will not require vegetation clearing for the Umoyilanga Ancillary Infrastructure components, however, authorised components of the Umoyilanga (Dassiesridge) WEF will still be located on these properties. → Most of the potential adverse impacts associated with the Umoyilanga Ancillary Infrastructure components are unlikely to occur in the absence of the development.</p>	<p>→ The benefits associated with the proposed Umoyilanga Ancillary Infrastructure, such as supporting the authorised Umoyilanga (Dassiesridge) WEF development, will be lost. → The benefits associated with the proposed Umoyilanga Ancillary Infrastructure, such as the creation of employment opportunities during the construction, operation, and decommissioning of the Umoyilanga Ancillary Infrastructure components, will be lost.</p>	<p>YES</p>	

7. DESCRIPTION OF THE ENVIRONMENT

The criteria used to assess the baseline sensitivity of the proposed Umoyilanga Ancillary Infrastructure site include climate, topography, geology and soils, surface water, land-cover (local and national), vegetation, biodiversity indicators, threatened ecosystems, protected areas, fauna, social setting, and archaeological and cultural heritage.

7.1 CLIMATE

The climate data for the proposed Umoyilanga Ancillary Infrastructure site is based on the climate data for Kariega (Uitenhage), which is the nearest town to the study area. The climate of Kariega is classified as BSh (hot semi-arid) by Köppen and Geiger. The average annual temperature is 18.2°C, reaching an average maximum temperature in February (22.5°C), and an average minimum temperature in July (13.8°C). Kariega receives an average of 427 mm of rainfall per annum, with most of the rainfall occurring in October (48 mm) (Climate-Data.org). Table 7.1 consists of the monthly average climate data for Kariega.

Table 7.1: Average Temperatures and Rainfall Data for Kariega (Source: en.climate-data.org).

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Avg. Temperature (°C)	22.3	22.5	21.4	19	16.6	14.4	13.8	14.7	16.1	17.6	19.2	21.1
Min. Temperature (°C)	17.1	17.4	16.1	13	9.9	7.1	6.5	7.9	9.9	12.1	14	15.7
Max. Temperature (°C)	27.5	27.7	26.7	25.1	23.4	21.7	21.2	21.6	22.4	23.2	24.5	26.5
Precipitation / Rainfall (mm)	31	38	43	43	33	21	22	37	37	48	44	30

7.2 TOPOGRAPHY

The topography of the broader area is characterised by low to moderate undulating hills. The proposed site is situated at an altitude of approximately 240 m to 300 m above sea level.

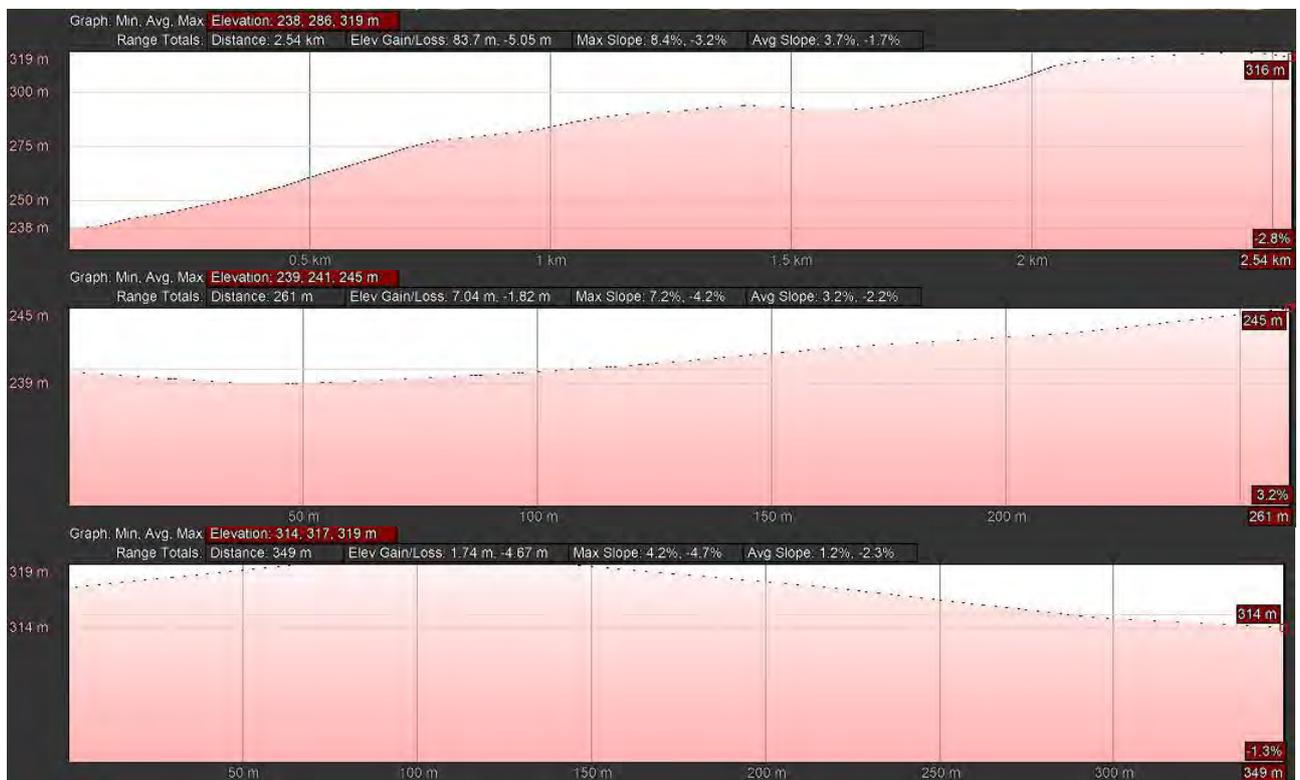


Figure 7.1: Google Earth Elevation Profile of the Umoyilanga Ancillary Infrastructure Site; (1) from west to east (whole site), (2) from north to south (western components), and (3) from north to south (eastern component).

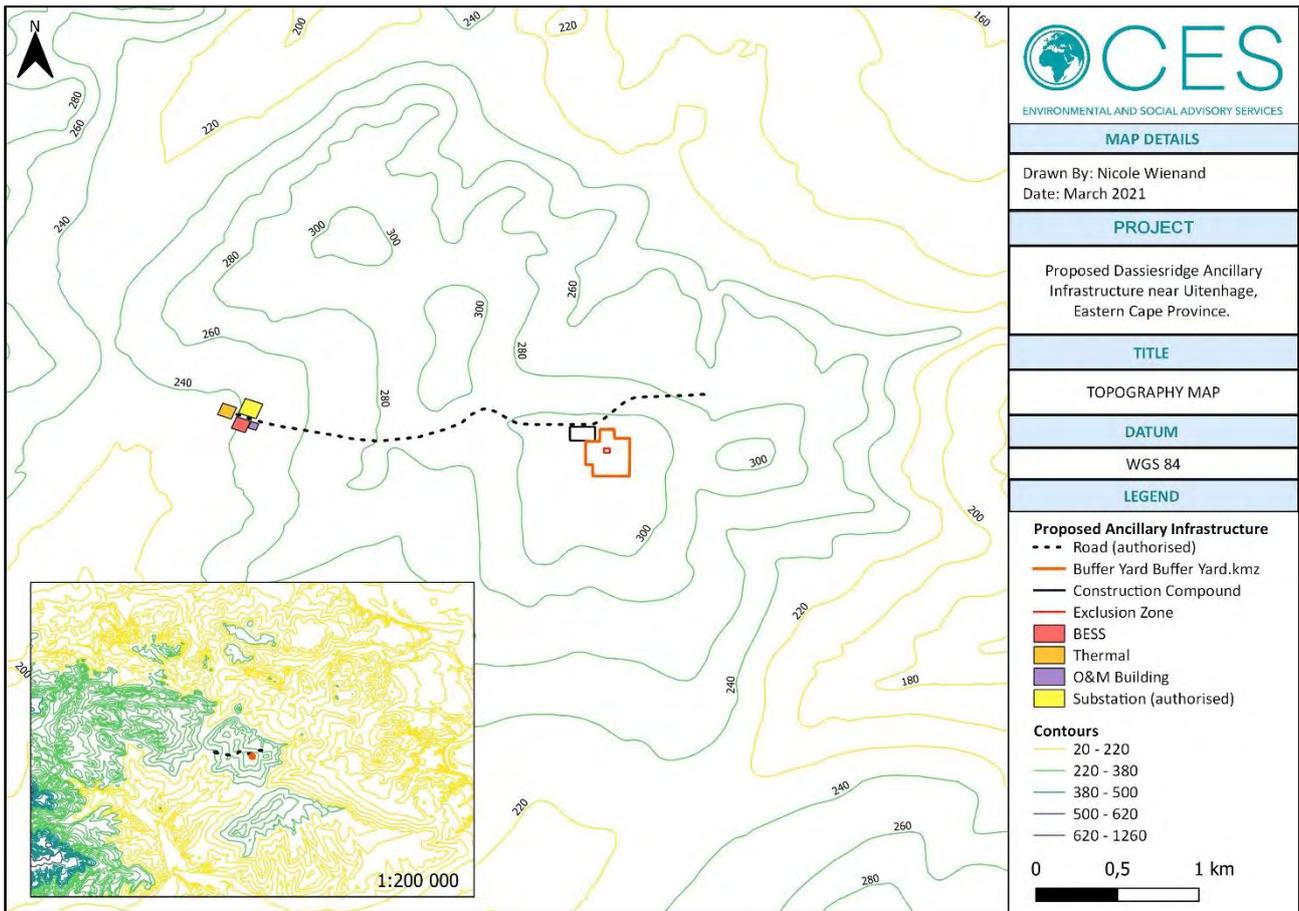


Figure 7.2: Contour Map of the Umoyilanga Ancillary Infrastructure (including the authorised access road, substation, and construction compound).

7.3 GEOLOGY AND SOILS

The geology underlying the Umoyilanga 132 kV OHL consists of sedimentary deposits of the Alexandria Formation and the Kirkwood Formation.

The Kirkwood Formation is one of four formations belonging to the Uitenhage Group of the Algoa Basin, in the Eastern Cape Province of South Africa. It reaches a thickness of 2 000 meters in parts of the basin and consists of porous and permeable, coarse- to medium-grained lithic sandstones interbedded with red and greyish-green siltstones and mudrocks. The depositional environment of the Kirkwood Formation is that of a fluvial setting, with point-bar sand deposits, overbank mud accumulations and subaerial exposure of recently deposited sediments (Johnson et al., 2006).

The Alexandria Formation of the Algoa Group comprises of a 13 m thick package consisting of basal conglomerates rich in oyster shells, calcareous sandstones, pebbly coquina (cemented shells) and thin conglomerates typical of coastal and estuarine environments. The deposition of these layers is thought to have occurred during the marine transgression and regression cycles of the middle Miocene to Pliocene age. Consequently, the Alexandria Formation contains an abundance of marine invertebrate fossils such as bivalves, gastropods, corals, bryozoans, brachiopods, and echinoids. Aeolianites of the Nanaga, Nahoon, and Schelm Hoek Formations overlie the Alexandria formation in some places within the broader area (Johnson et al., 2006).

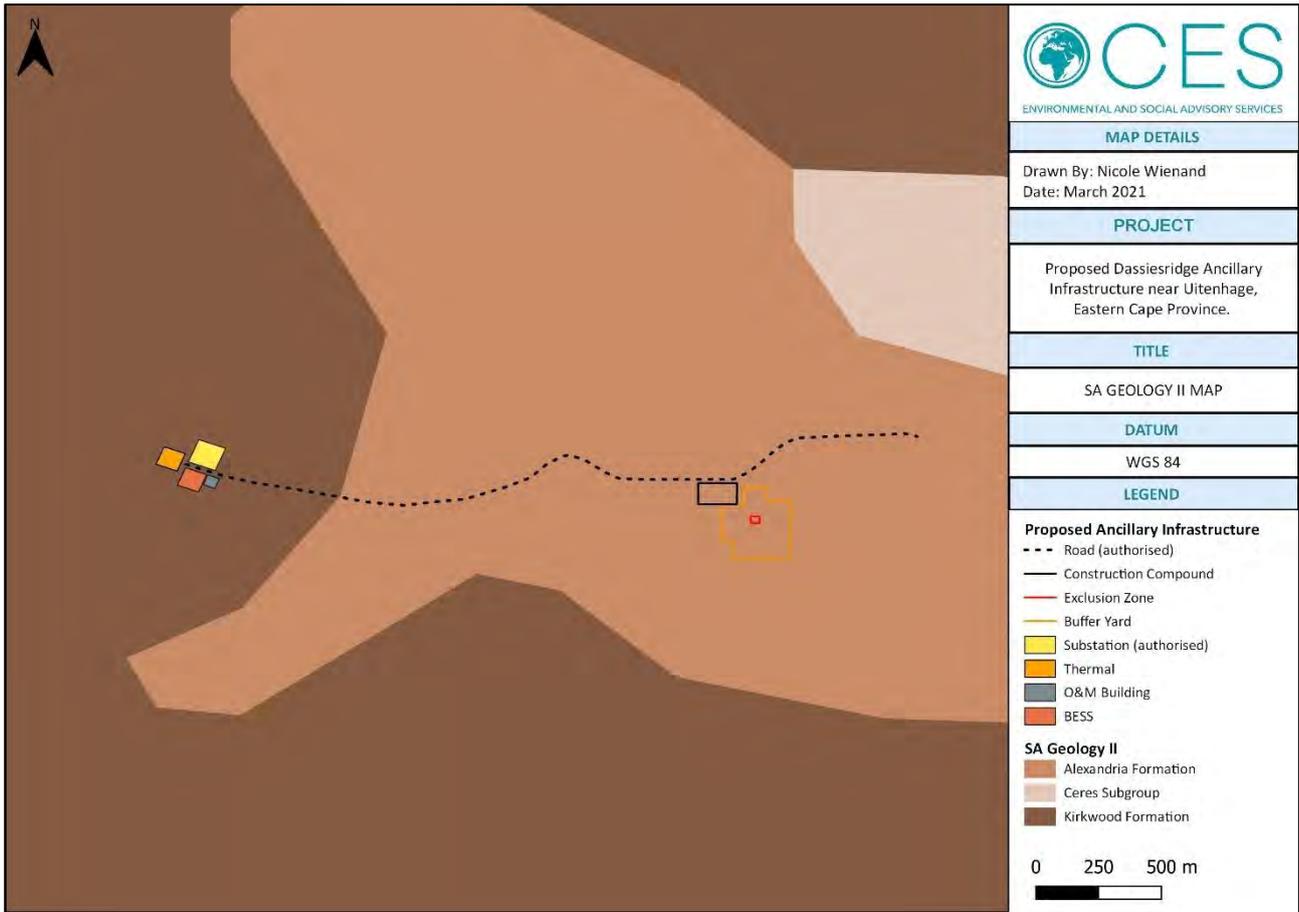


Figure 7.3: Geology Map of the Umoyilanga Ancillary Infrastructure (including the authorised access road, substation, and construction compound).

The National Screening Tool Report for the Umoyilanga Ancillary Infrastructure classifies the entire proposed site as having VERY HIGH Palaeontology Theme Sensitivity, Figure 7.4. The sensitive feature has been described as “features with a very high palaeontological sensitivity”. Please see the geology description above for a description of the fossils which are likely to occur within these lithologies.

Please refer to the [Archaeological Assessment Report](#) (Appendix C).

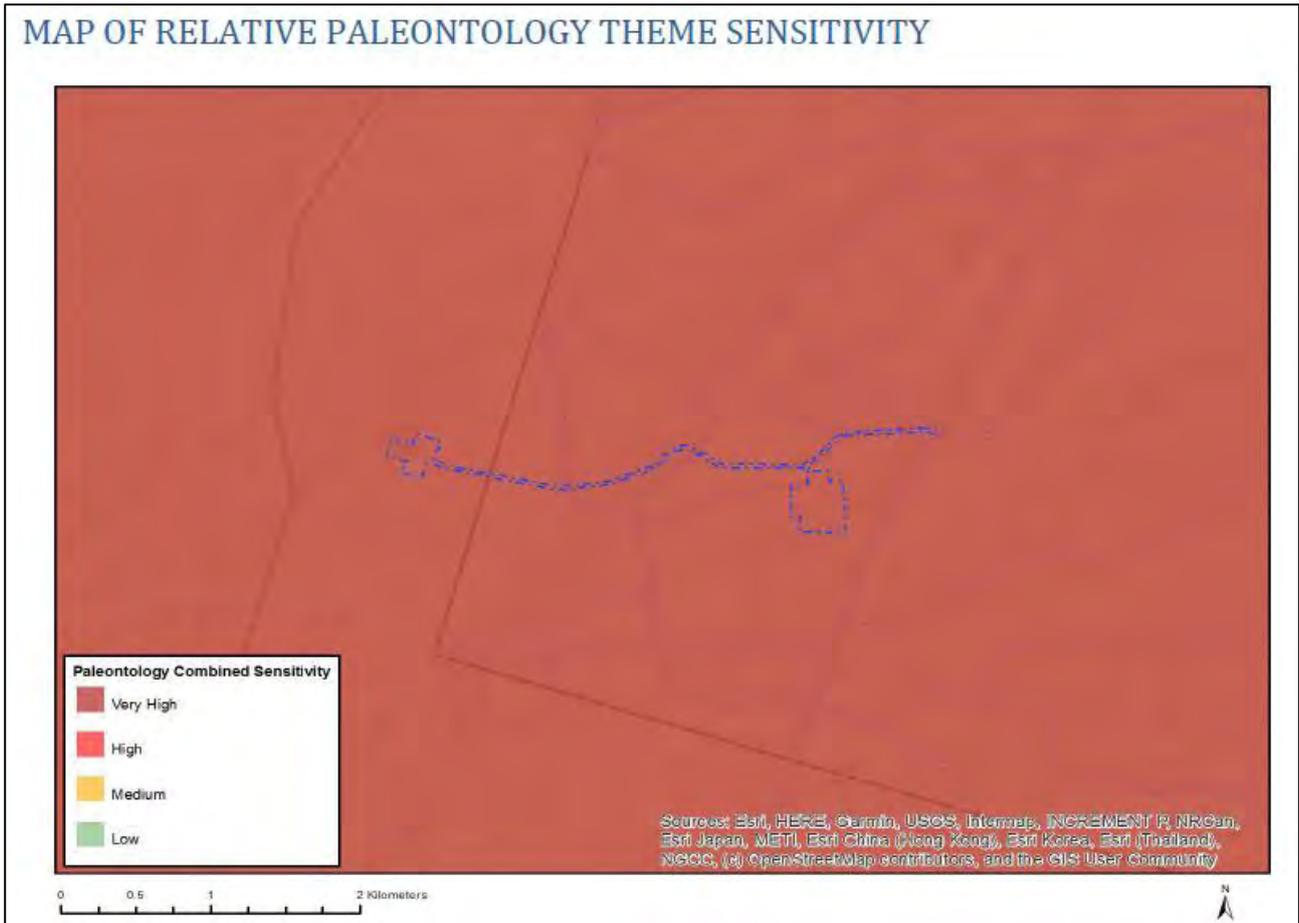


Figure 7.4: National Screening Tool Palaeontology Theme Sensitivity Map of the Proposed Umoyilanga Ancillary Infrastructure.

According to Soil and Terrain Database for Southern Africa (SOTERSAF, 2003), the soil type within the proposed sites is classified as Eutric Regosols (Figure 7.5). Regosols are typically ‘young’ soils with poorly developed horizons, except for an ochric (surface) horizon which is generally thin and low in organic matter. These soils are highly permeable and have a low water holding capacity, making them unfavourable for agricultural purposes (other than grazing) and sensitive to drought. Regosols are prone to erosion, particularly on sloping surfaces, and often form a hard surface crust during dry periods, which prevents the infiltration of water and the emergence of seedlings. These soils are typically used for extensive grazing. The term ‘eutric’ refers to soils with a base saturation of 50% or more within 20 to 100 cm from the soil surface.

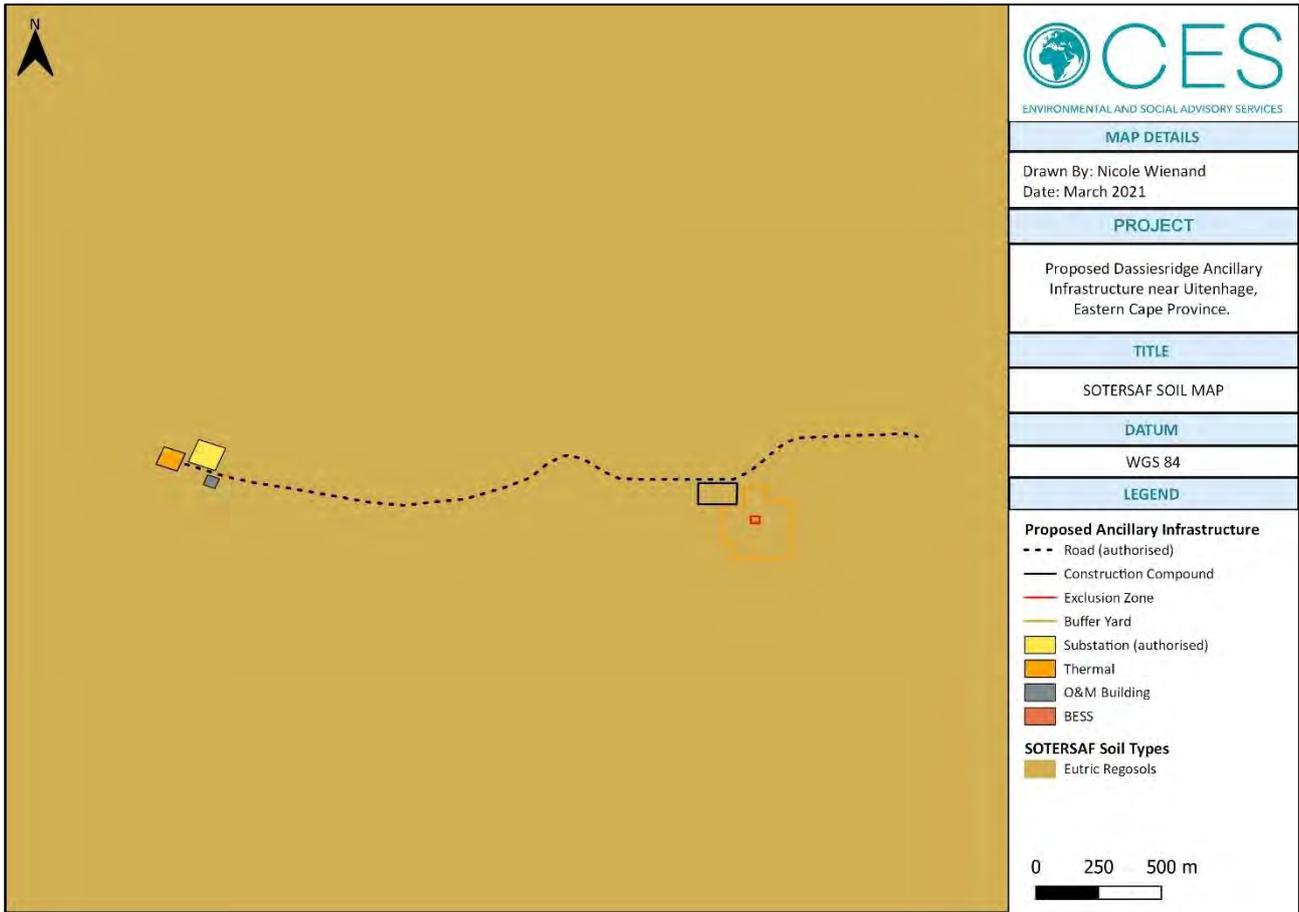


Figure 7.5: Soils Map of the Umoyilanga Ancillary Infrastructure (including the authorised access road, substation, and construction compound).

The National Screening Tool Report for the Umoyilanga Ancillary Infrastructure classifies the proposed site as having a combination of MEDIUM and LOW Relative Agriculture Theme Sensitivity, Figure 7.6. The sensitive features within the proposed site are described as very low, low-very low, and low land capability (LOW Sensitivity) and low-moderate and moderate land capability (MEDIUM Sensitivity). Please refer to Plate 7.1 for general photographs of the Umoyilanga Ancillary Infrastructure sites. The agricultural land use within the site primarily consists of livestock and wildlife grazing.



Plate 7.1: General Photographs of the Proposed Umoyilanga Ancillary Infrastructure Sites (taken in Autumn 2021).

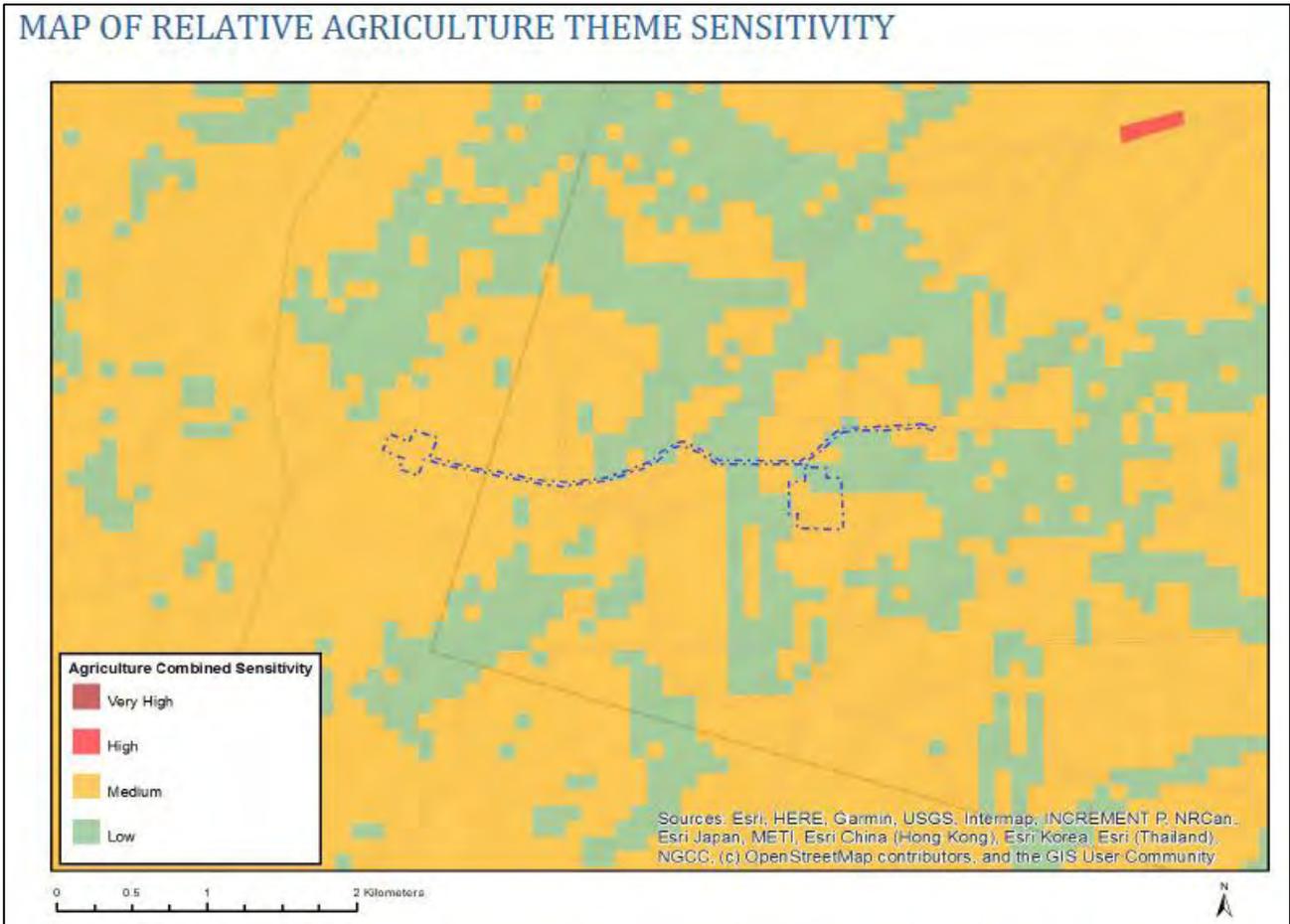


Figure 7.6: National Screening Tool Agriculture Theme Sensitivity Map of the Proposed Umoyilanga Ancillary Infrastructure.

7.4 SURFACE WATER

The National Screening Tool Report for the Umoyilanga Ancillary Infrastructure classifies the proposed site as having VERY HIGH (western section) and LOW (eastern section) Relative Aquatic Biodiversity Theme Sensitivity (Figure 7.7). The sensitive feature within the proposed site is described as a Strategic Water Source Area (SWSA).

The proposed site is situated within the Mzimvubu to Tsitsikama Water Management Area (WMA 7). The proposed Ancillary Infrastructure development does not traverse any watercourses and it is not situated within the 100 m regulatory buffer of any watercourses. In addition, the proposed development does not fall within the 500 m regulatory buffer of any NFEPA (2011/14) wetlands, however, a section of the proposed Thermal is situated within the 500 m regulatory buffer of an NBA (2018) wetland. Water Use Authorisation will be required from the Department of Water and Sanitation (DWS) in terms of Section 21(c) and 21(i) of the National Water Act (NWA) (Act No. 36 of 1998, as amended) for the section(s) of the development which are situated within the regulatory buffer.

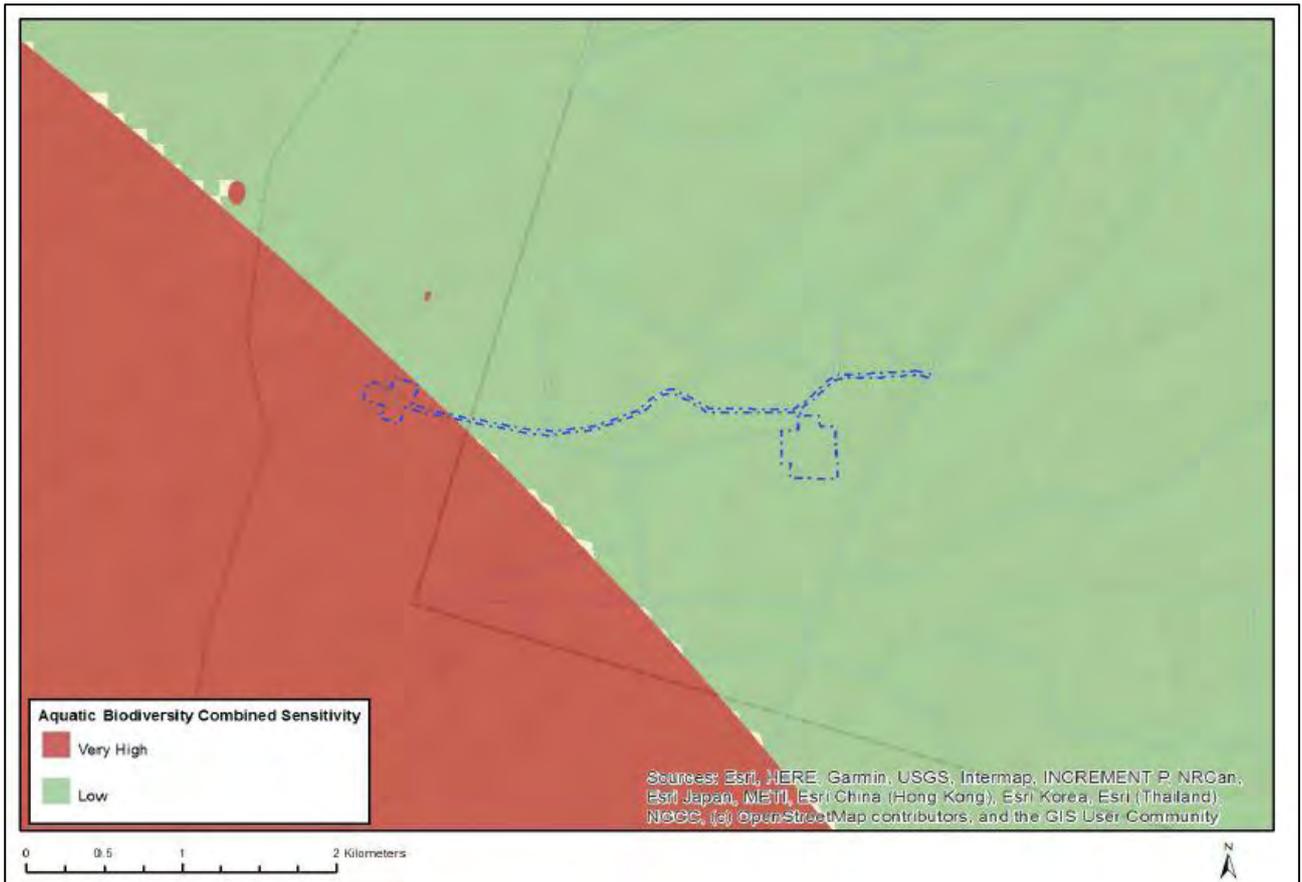


Figure 7.7: National Screening Tool Aquatic Biodiversity Theme Sensitivity Map of the Proposed Umoyilanga Ancillary Infrastructure.

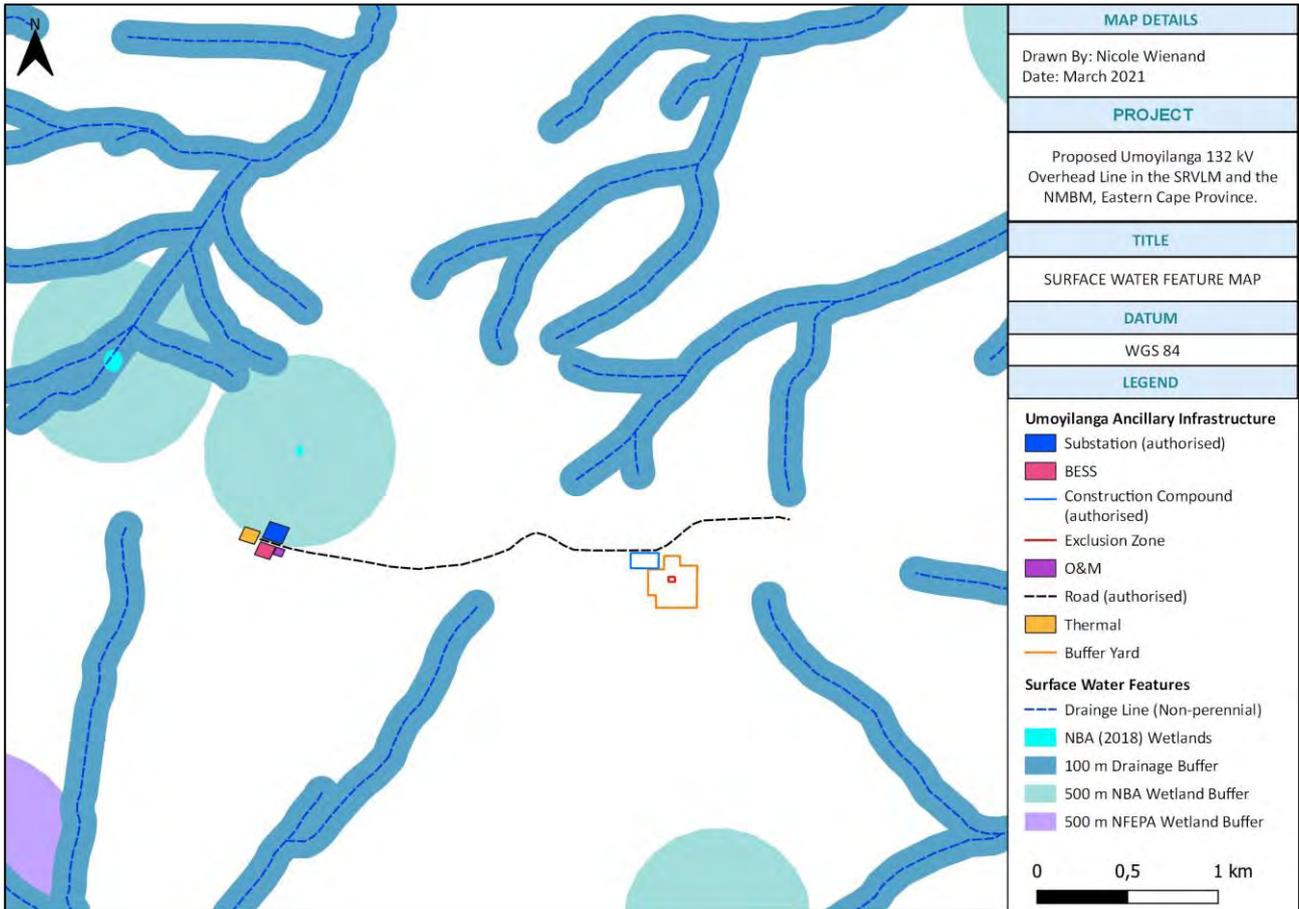


Figure 7.8: Surface Water Map of the Umoyilanga Ancillary Infrastructure.

7.5 LAND-COVER

7.5.1 Local Land-Cover (NMBM, 2007/9 and Addo BSP, 2012)

The Nelson Mandela Bay Conservation Assessment and Plan (2009) for the NMBM underpins the gazetted Nelson Mandela Bay Municipal Bioregional Plan (2015). According to the NMBM (2009) Conservation Assessment and Plan, the Umoyilanga Ancillary Infrastructure components which are situated in the NMBM (BESS, Thermal, and O&M Building) are situated within an area classified as “Donut” (Figure 7.9). Donut land uses are known as “natural areas/vacant land” or “no-man’s land” which has not yet been developed (CES, 2017).

According to the Addo BSP (2012) Land-cover Map (**Error! Reference source not found.10**), the Umoyilanga Ancillary Infrastructure component which is situated in the SRVLM (Temporary Buffer Yard) is situated within an area classified as “Natural”.

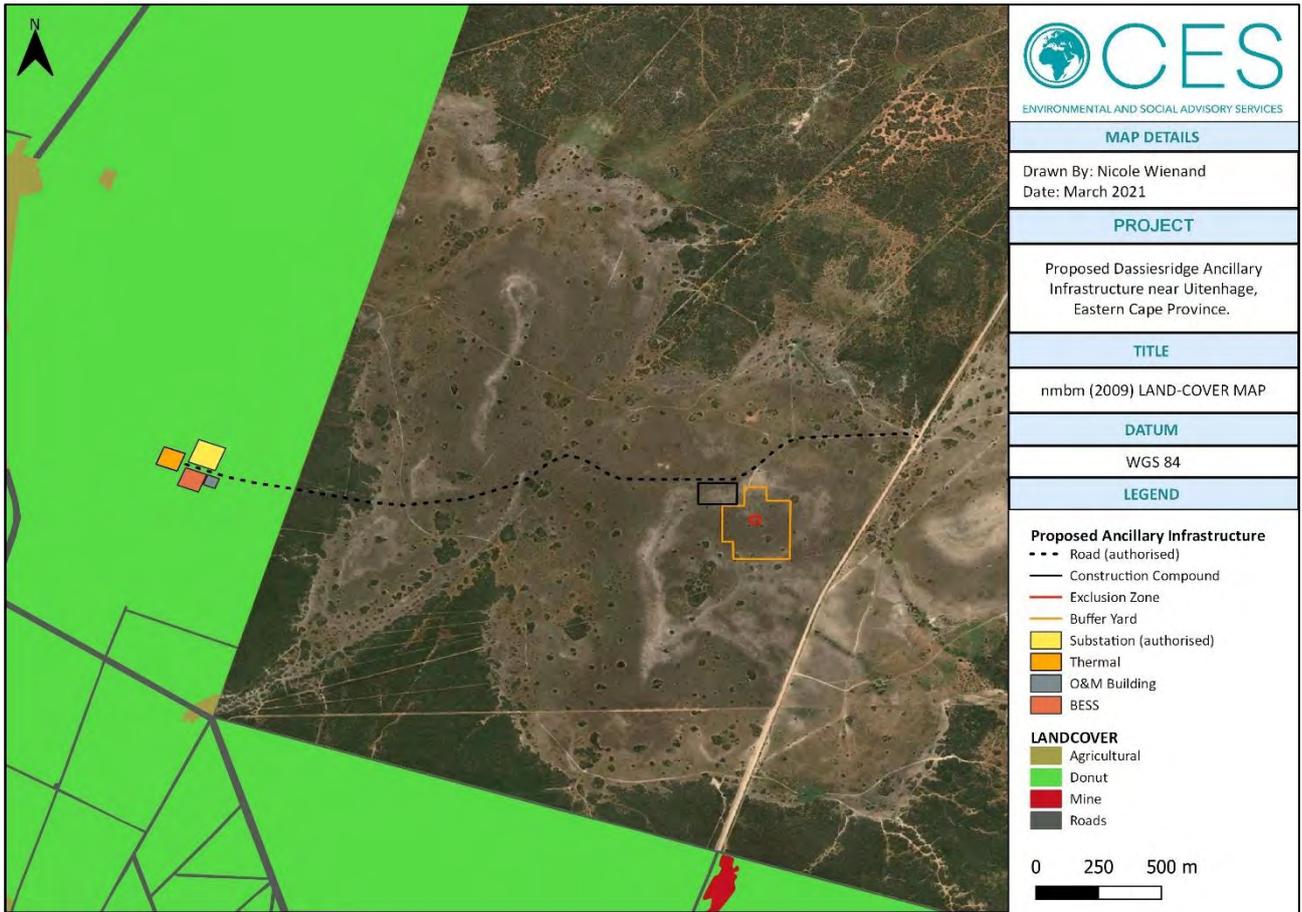


Figure 7.9: NMBM (2009) Land-Cover Map of the Umoyilanga Ancillary Infrastructure.

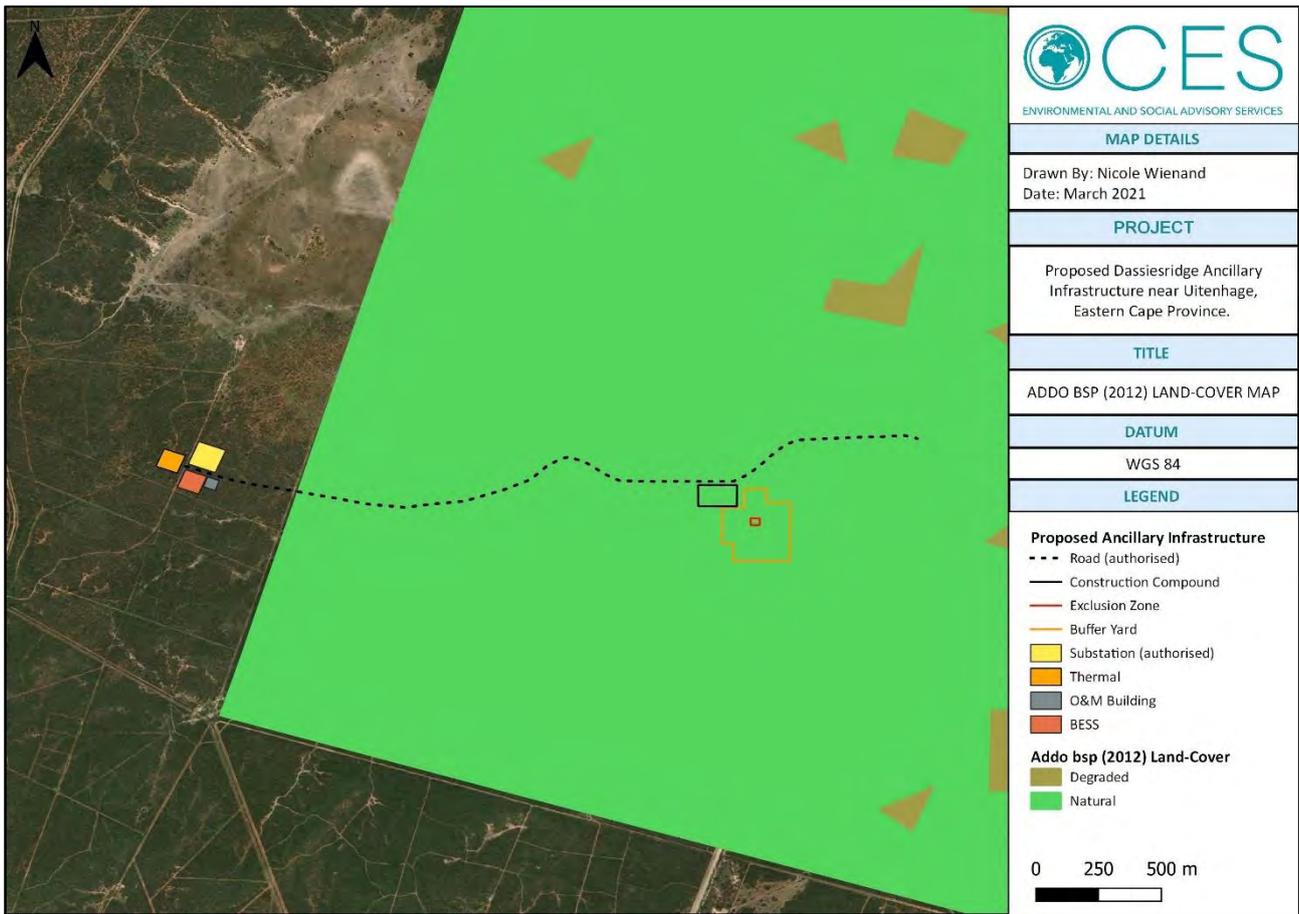


Figure 7.10: Addo BSP (2012) Land-Cover Map of the Umoyilanga Ancillary Infrastructure.

7.5.2 National Land-Cover (SANLC, 2018)

According to the South African National Land-Cover (2018) spatial dataset, the BESS, Thermal and O&M Building are situated within a combination of *Dense Forest and Woodland* and *Open Woodland*, and the Buffer Yard is situated in an area classified as *Natural Grassland* with patches of *Open Woodland* (Figure 7.11).

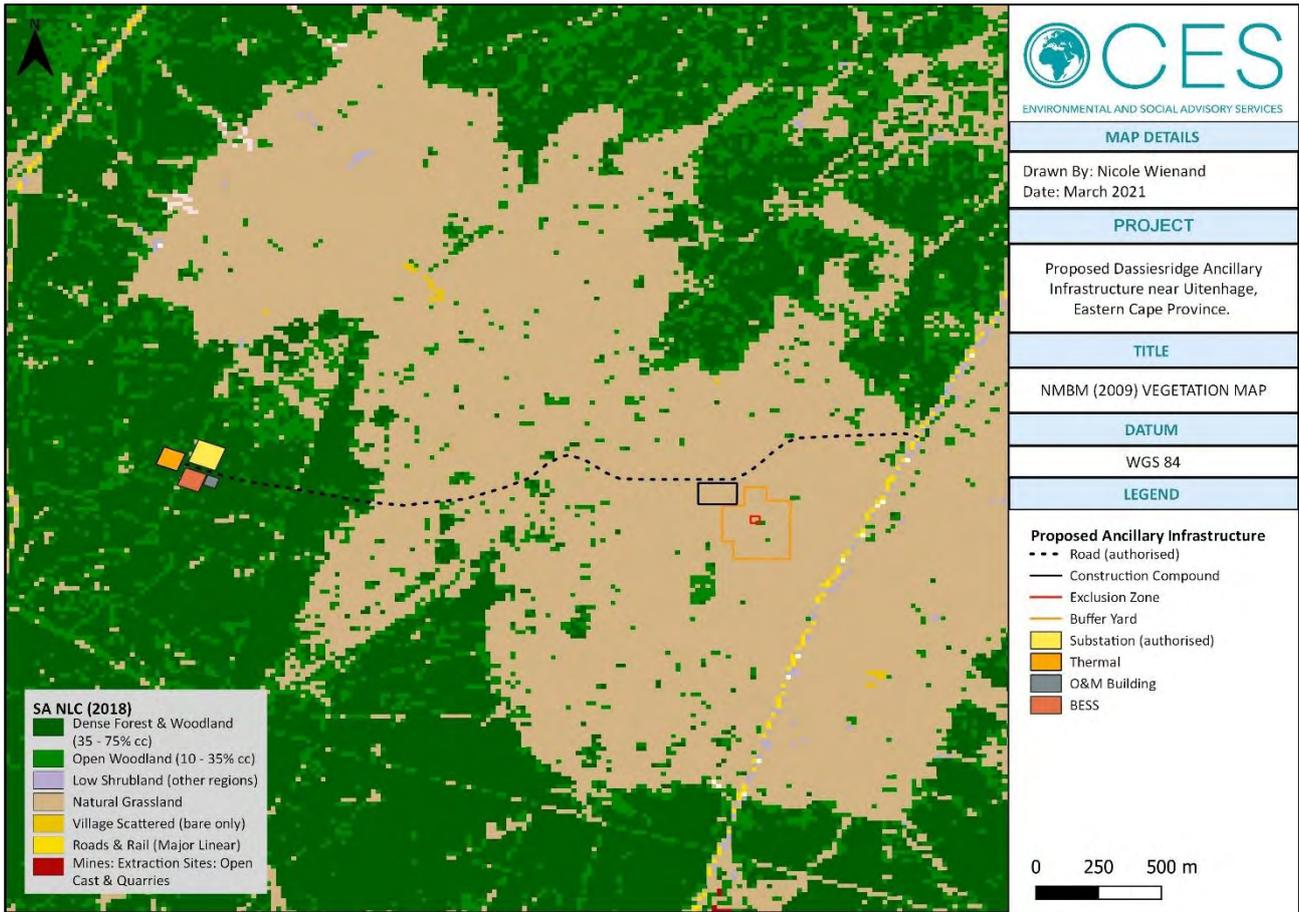


Figure 7.11: National Landcover Map of the Umoyilanga Ancillary Infrastructure Site and Surrounds.

7.6 VEGETATION

The proposed Umoyilanga Ancillary Infrastructure is situated within the Albany Thicket Biome (Mucina *et al.*, 2018). This species-rich, evergreen, scrubland covers an estimated 2.2 % of South Africa’s total land surface area and occurs throughout most of the Eastern Cape Province, particularly in incised river valleys. The biome is characterised by sparse to dense, semi-succulent, spiny shrub vegetation often accompanied by a tree component and an herbaceous and grassy undergrowth. Unfortunately, this biome has become highly fragmented due to clearing for cultivation and its poor ability to regenerate once disturbed (Mucina and Rutherford, 2012).

The South African Vegetation Map (SA VEGMAP, 2018) is an important resource for biodiversity monitoring and conservation management in South Africa. Under the custodianship of the South African National Biodiversity Institute (SANBI) the SA VEGMAP (2018) was updated in order to ‘provide floristically based vegetation units of South Africa, Lesotho and Swaziland at a greater level of detail than had been available before’. The map provides a detailed description of each of South Africa’s unique vegetation types along with a comprehensive list of the important species associated with each, including endemic and biologically important species.

According to SANBI’s National Vegetation Map (2018), the proposed Umoyilanga Ancillary Infrastructure components are situated within two (2) vegetation types, namely Grassridge Bontveld (Buffer Yard) and Sundays Valley Thicket (BESS, Thermal, and O&M Building) (Figure 7.12).

Sundays Valley Thicket occurs exclusively in the Eastern Cape Province, primarily in the lower Sundays River Valley which stretches from Kleinpoort in the west to Paterson and Colchester in the east. This vegetation

type typically occurs on undulating plains, low foothills and mountain slopes on deep loamy-clayey soils underlain by the Kirkwood Formation, Sundays River Formation, and the Enon Formation. Sundays Valley Thicket vegetation is characterised by medium-sized to tall (3 – 5 m) dense thicket dominated by a well-developed woody tree, shrub, and succulent component with many spinescent species. There is no distinct differentiation between the upper and lower canopy, as a wide variety of lianas typically link the understory with the upper canopy. Although emergents are uncommon, species such as *Euphorbia grandidens*, *E. triangularis*, and occasionally *Cussonia gamtoosensis* and *C. spicata* emerge above the canopy. The structure of Sundays Valley Thicket varies considerably depending on soil conditions and aridity, with the dominance of *Portulacaria afra* increasing in abundance in relation to aridity.

The Ecosystem Threat Status of Sundays Valley Thicket is **Least Concern**, while the Ecosystem Protection Level is considered **Moderately Protected** (Skowno *et al.*, 2019) with large portions of this vegetation type conserved in the Addo Elephant National Park and the Cape Floral Region Protected Areas (Baviaanskloof area). According to SANBI's National Vegetation Map (2018), the conservation target for Sundays Valley Thicket is 19%. Approximately 11.86% of this vegetation type has been transformed due to cultivation, urban sprawl, and erosion (Grobler *et al.*, 2018).

Grassridge Bontveld occurs exclusively in the Eastern Cape Province, predominantly in the areas north east of Gqeberha (Port Elizabeth) around Coega, and small patches near Addo Elephant National Park. This vegetation type is characterised by a matrix of low (0.2 - 0.8 m) grassy dwarf shrubland dominated by Fynbos, Grassland and Karroid elements, interspersed by thicket bush clumps of various sizes (Grobler *et al.*, 2018). The thicket bush clumps form as a consequence of the weathering of the underlying geology, where the infiltration of surface and groundwater causes the dissolution of the underlying limestone, forming circular depressions known as dolines. These dolines trap windblown sediments resulting in a deeper soil depth in which thicket tree and shrub species thrive.

Grassridge Bontveld is classified as **Least Concern** (Skowno *et al.*, 2019), with a Conservation Target of 19%. It is considered **Moderately Protected**, however 9.53% of the area has been transformed mainly due to cultivation, mining, urban sprawl, roads, and erosion. Portions of this vegetation type are conserved in the Addo Elephant National Park and the Kaapse Grysbok Private Nature Reserve (Grobler *et al.*, 2018).

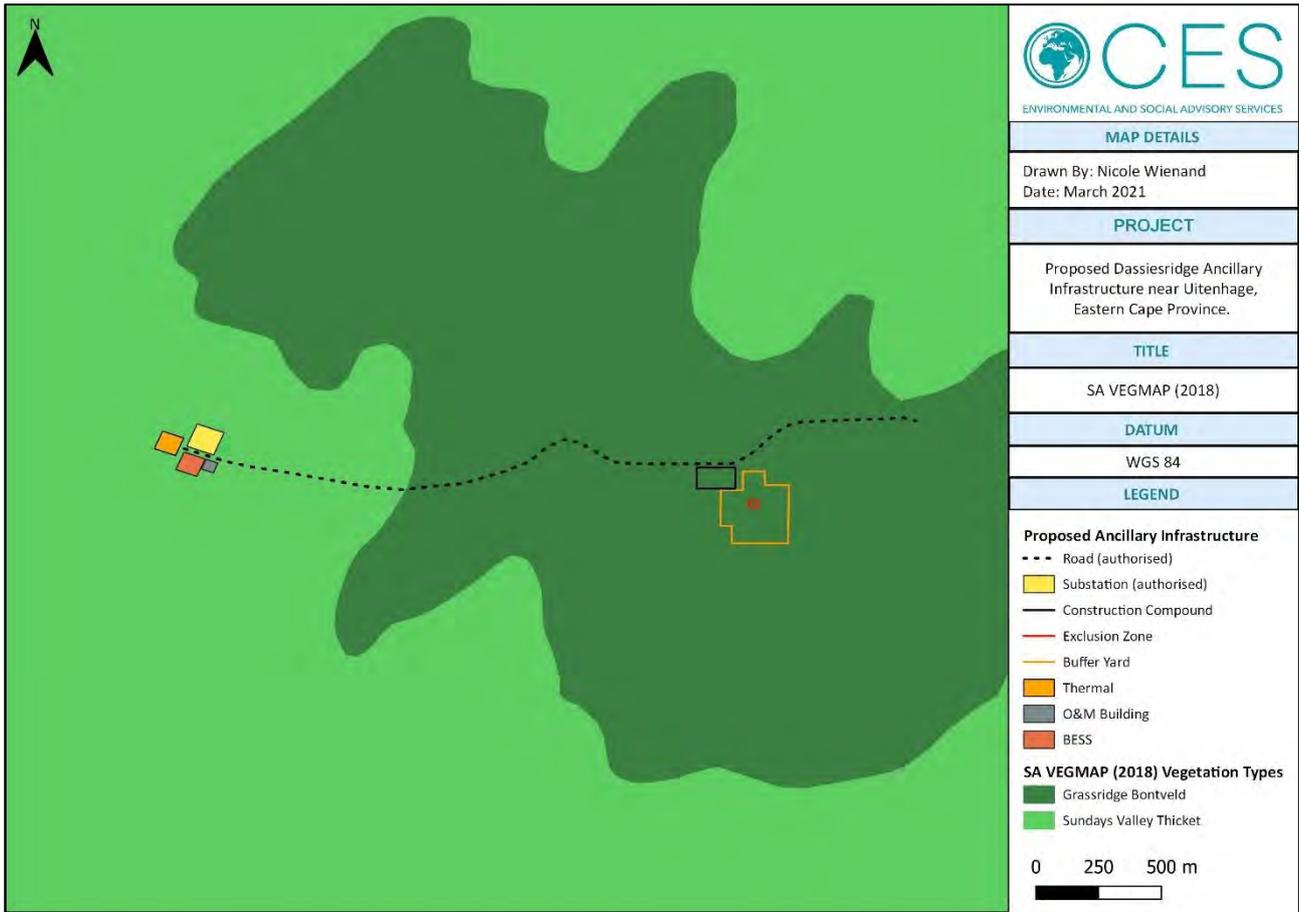


Figure 7.12: National Vegetation Map of the Umoyilanga Ancillary Infrastructure.

The National Screening Tool Report for the proposed Umoyilanga Ancillary Infrastructure classifies the majority of the site as an area with VERY HIGH terrestrial biodiversity theme sensitivity with a section of LOW sensitivity (Figure 7.13) due to CBA 1 and CBA 2 areas within the site.

Figure 7.14 consists of the plant sensitivity theme which is classified as MEDIUM sensitivity due to the following species:

- Sensitive Species 1235
- Sensitive Species 1268
- *Selago zeyheri*
- *Salvia obtusata*
- *Apodolirion macowanii*
- Sensitive Species 779
- *Duvalia pillansii*
- *Syncarpha recurvata*
- Sensitive Species 91
- *Justicia orchioides subsp. orchioides*
- *Strelitzia juncea*
- *Corpuscularia lehmannii*
- Sensitive Species 1101
- *Asparagus spinescens*
- Sensitive Species 1248
- Sensitive Species 19

Please refer to the **Ecological Assessment Report** (Appendix C).

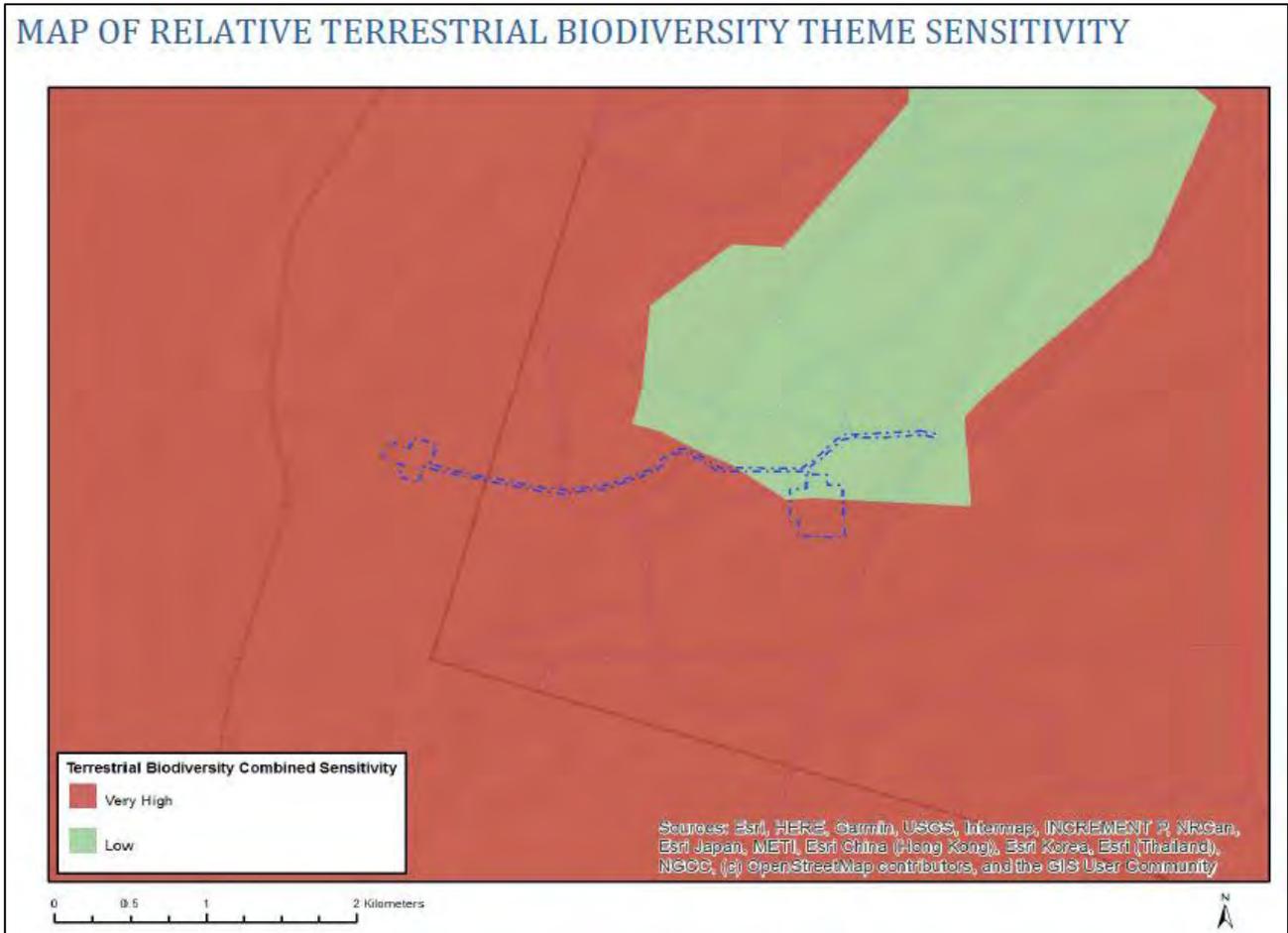


Figure 7.13: National Screening Tool Terrestrial Biodiversity Theme Sensitivity Map of the Proposed Umoyilanga Ancillary Infrastructure Site.

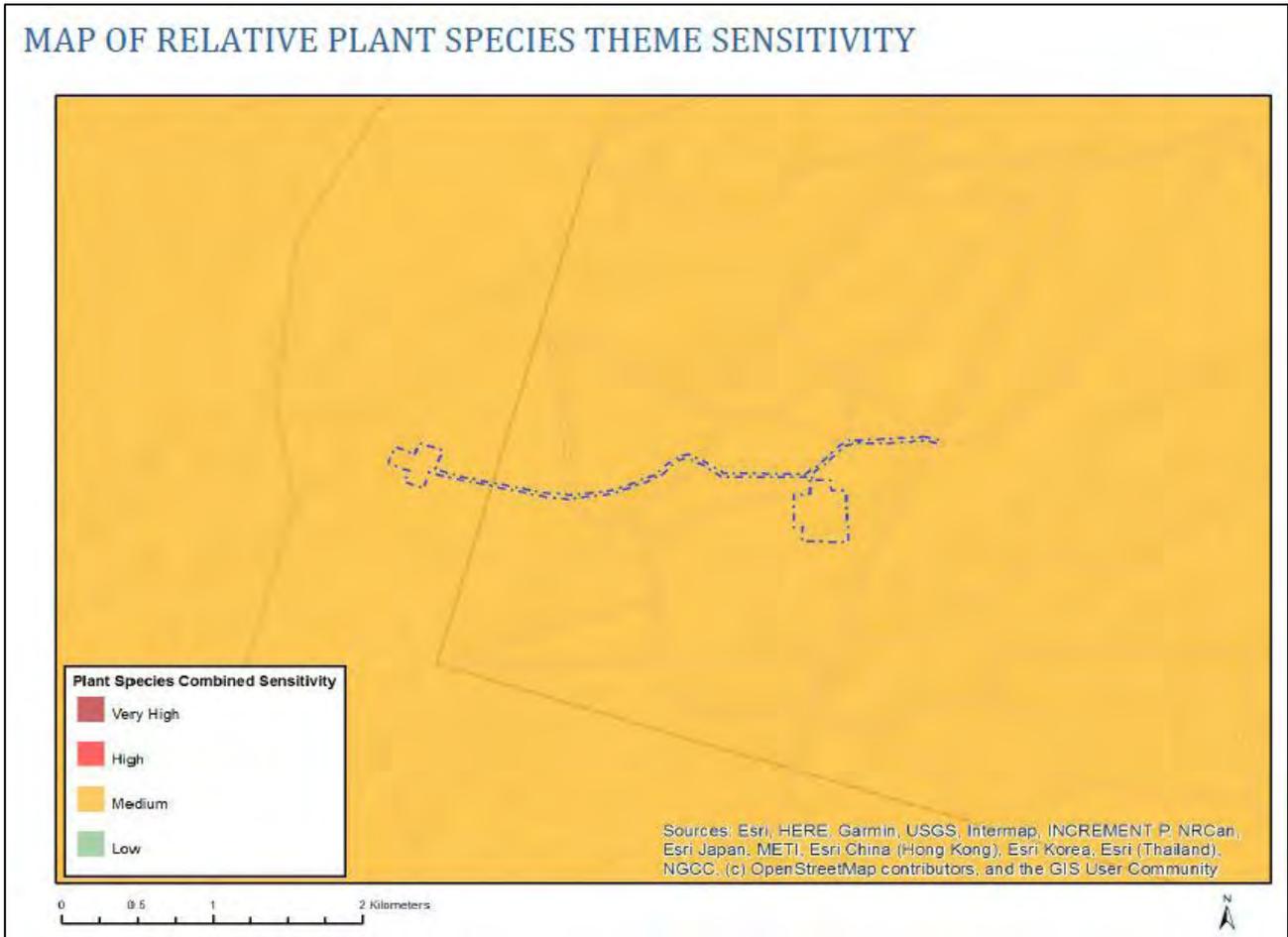


Figure 7.14: National Screening Tool Plant Species Theme Sensitivity Map of the Proposed Umoyilanga Ancillary Infrastructure Site.

7.7 FAUNA

A number of mammals were observed within the broader project area including springbok (*Antidorcas marsupialis*), zebra (*Equus sp.*), wildebeest (*Connochaetes sp.*), ostriches (*Struthio camelus*), impala (*Aepyceros melampus*), bushbuck (*Tragelaphus scriptus*), dassies (*Procavia capensis*), and vervet monkeys (*Chlorocebus pygerythrus*). Small rodents and a variety of insects and reptiles are also expected to occur on site.

7.7.1 Amphibians

The Eastern Cape hosts 54 amphibian species, 21 of these species have a distribution which coincides with the project area (IUCN, 2021; Du Preez & Carruthers, 2017). Consultation of the ADU historical records confirms that 18 amphibian species have been recorded within the QDS (3325CB, 3325DA) and are likely to occur within the site, all of which are considered **Least Concern**.

Three endemic species have a distribution which includes the site, two are endemic to South African (Cape River Frog (*Amietia fuscigula*) and Delalande's Sand Frog (*Tomopterna delalandii*)) and one is endemic to the Eastern Cape (Eastern Leopard Toad (*Sclerophrys pardalis*)). This species inhabits open grassy bushveld areas, thickets and agricultural areas and breeds in large, permanent, usually deep pools (IUCN SSC ASG, 2016).

7.7.2 Reptiles

The Eastern Cape is home to 133 reptile species, 69 species have a distribution that coincides with the site

(IUCN, 2021; Branch, 1998; Bates *et al.* 2014). Consultation of the ADU historical records for QDS (3325CB, 3325DA) and iNaturalist indicates that 57 species have been confirmed to occur within the site. Four reptile species are endemic to the Eastern Cape and have a distribution which includes the site and two chameleon (*Bradypodion*) species have yet to be described.

Sensitive Species 18 is listed as Endangered and is poorly protected (Tolley, *et. al.*, 2018). It is endemic to South Africa and very restricted to inland areas of Algoa Bay in the Eastern Cape Province. The only known population is found in Bontveld vegetation on limestone (Nanaga formation) and calcareous paleodunes (Cenozoic Algoa Group) (Maritz, *et. al.*, 2018).

7.7.3 Mammals

The Eastern Cape is home to 166 mammal species, 100 of which have a distribution which includes the site (IUCN, 2021; Stuart & Stuart, 2015; Child *et al.*, 2016). Approximately 42 mammal species have been recorded within the project area QDS (3325CB, 3325DA) (FitzPatrick, 2021) (Appendix 4).

Eight **Threatened** species and four **Near Threatened** species have a distribution which includes the site. Please refer to the **Ecological Assessment Report** (Appendix C).

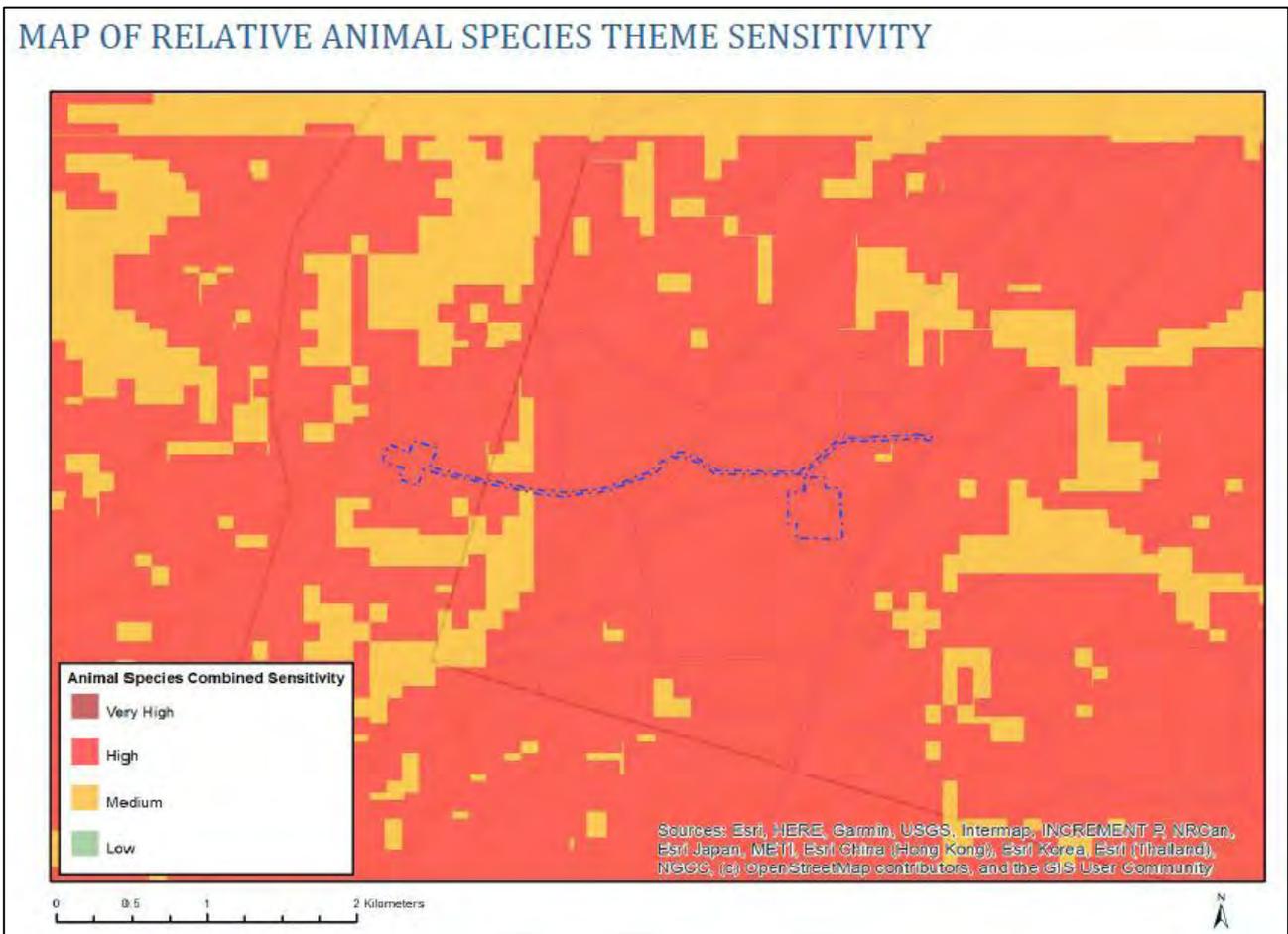


Figure 7.15: National Screening Tool Animal Species Theme Sensitivity Map of the Proposed Umoyilanga Ancillary Infrastructure Site.

The National Screening Tool Report for the proposed Umoyilanga Ancillary Infrastructure classifies the entire site as an area with HIGH animal species theme sensitivity, which includes avifauna (Figure 7.15) due to the following sensitive species, which are classified as having high and medium sensitivity:

- *Aves-Neotis denhami* (High)

- *Aves-Circus maurus* (High)
- *Aves-Circus ranivorus* (High)
- *Aves-Campethera notata* (High)
- *Invertebrate-Aneuryphumus montanus* (Medium)
- Sensitive Species 18 (Medium)
- *Aves-Neotis denhami* (Medium)

Please refer to the **Ecological Assessment Report** (Appendix C).

7.8 BIODIVERSITY INDICATORS

7.8.1 Eastern Cape Biodiversity Conservation Plan (ECBCP, 2019)

The Eastern Cape Biodiversity Conservation Plan (ECBCP) of 2019 replaces the 2007 ECBCP in its entirety and provides a map of important biodiversity areas, outside of the Protected Areas network, which must be used to inform land use and resource-use planning and decision making. The objectives of the ECBCP (2019) are to:

- Identify the minimum spatial requirements needed to maintain a living landscape that continues to support all aspects of biodiversity and retain/maintain essential ecological infrastructure. This is achieved through the selection of areas, based on achieving targets, which represent important biodiversity pattern AND ecological processes;
- Serve as the primary source of biodiversity information for land use planning and decision-making; and
- Inform conservation and restoration action in important biodiversity areas.

The aim of the ECBCP (2019) was to map biodiversity priority areas through a systematic conservation planning process. The main outputs of the ECBCP include Protected Areas (PA), Critical Biodiversity Areas (CBA), Ecological Support Areas (ESA), Other Natural Areas (ONA), and No Natural Habitat Remaining (NNR) for both terrestrial and aquatic ecosystems.

The ECBCP (2019), covers the NMBM in the Aquatic CBA layer but does not include the NMBM in the Terrestrial layer because the current NMBM Bioregional Plan (2009/14) involved a fine scale biodiversity assessment, detailed expert input and stakeholder engagement, and is legally enforced and implemented by the responsible agencies (ECBCP, 2019).

The NMBM Bioregional Plan (2009/14) assessed the extent of the loss of natural features (including vegetation types, ecological processes, and SCC) within the NMBM due to various land uses. This assessment also included an assessment of the habitat integrity of riverine systems within the NMBM. Based on the remaining natural features, options for the conservation of a representative proportion of all biodiversity within the NMBM was determined, including CBAs and Critical Ecosystem Support Areas (CESA) which are the minimum areas required to meet conservation objectives in the NMBM. This Bioregional Plan assists with land use planning and decision making within the NMBM, with the purpose of facilitating the long-term persistence of a representative proportion of all biodiversity patterns, ecological processes, and SCC within the municipality.

According to the NMBM Biodiversity Plan (2009) spatial dataset, the proposed Umoyilanga Ancillary Infrastructure, which is situated in the NMBM, does not fall within a CBA (Figure 7.16). In addition, the Umoyilanga Ancillary Infrastructure, which is situated outside of the NMBM, does not fall within an ECBCP (2019) Terrestrial CBA. According to the ECBCP (2019) Aquatic CBAs, the majority of the proposed Umoyilanga Ancillary Infrastructure falls within an aquatic ESA 1 (Figure 7.17).

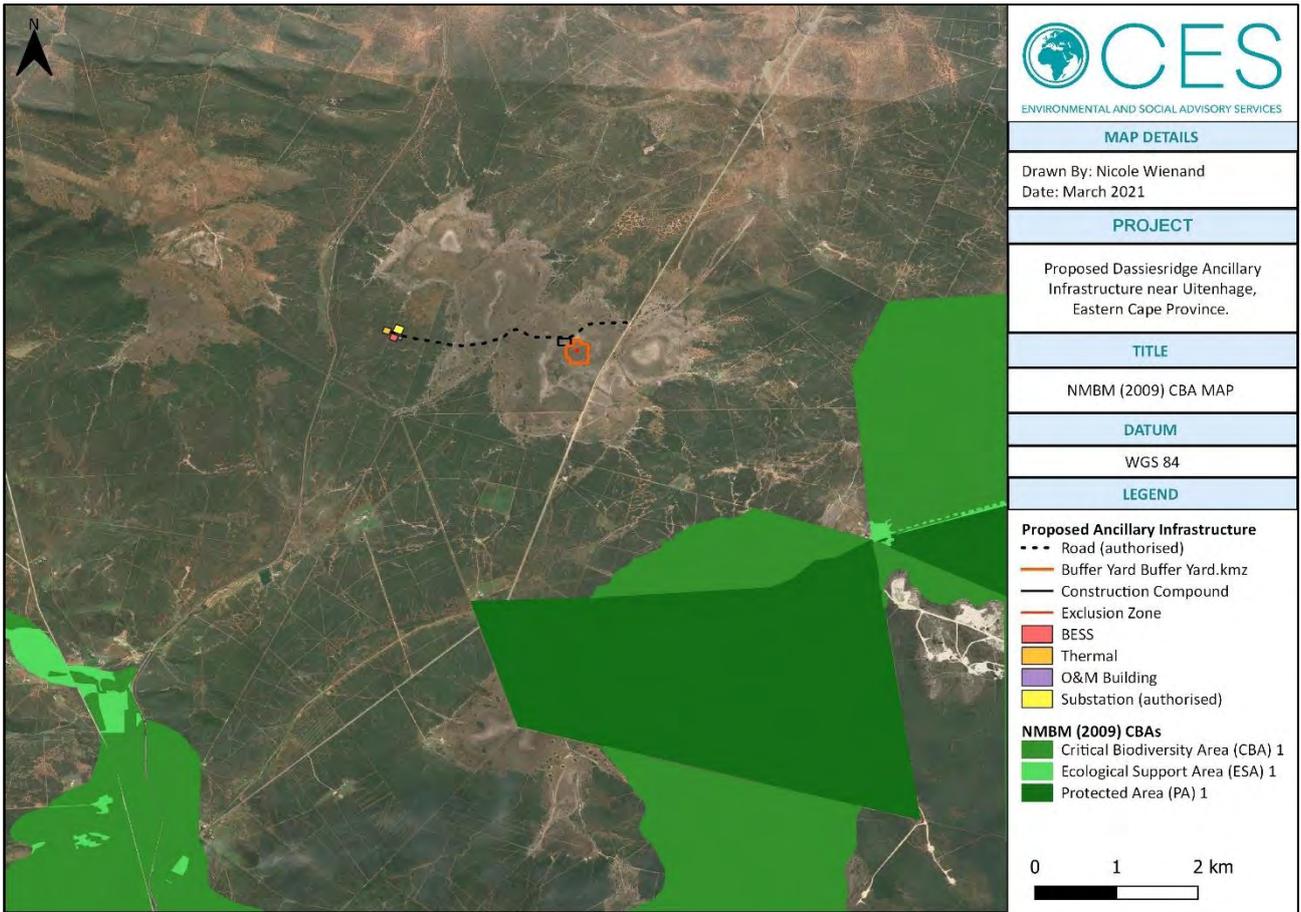


Figure 7.16: NMBM (2009) CBA Map of the Umoyilanga Ancillary Infrastructure Site.

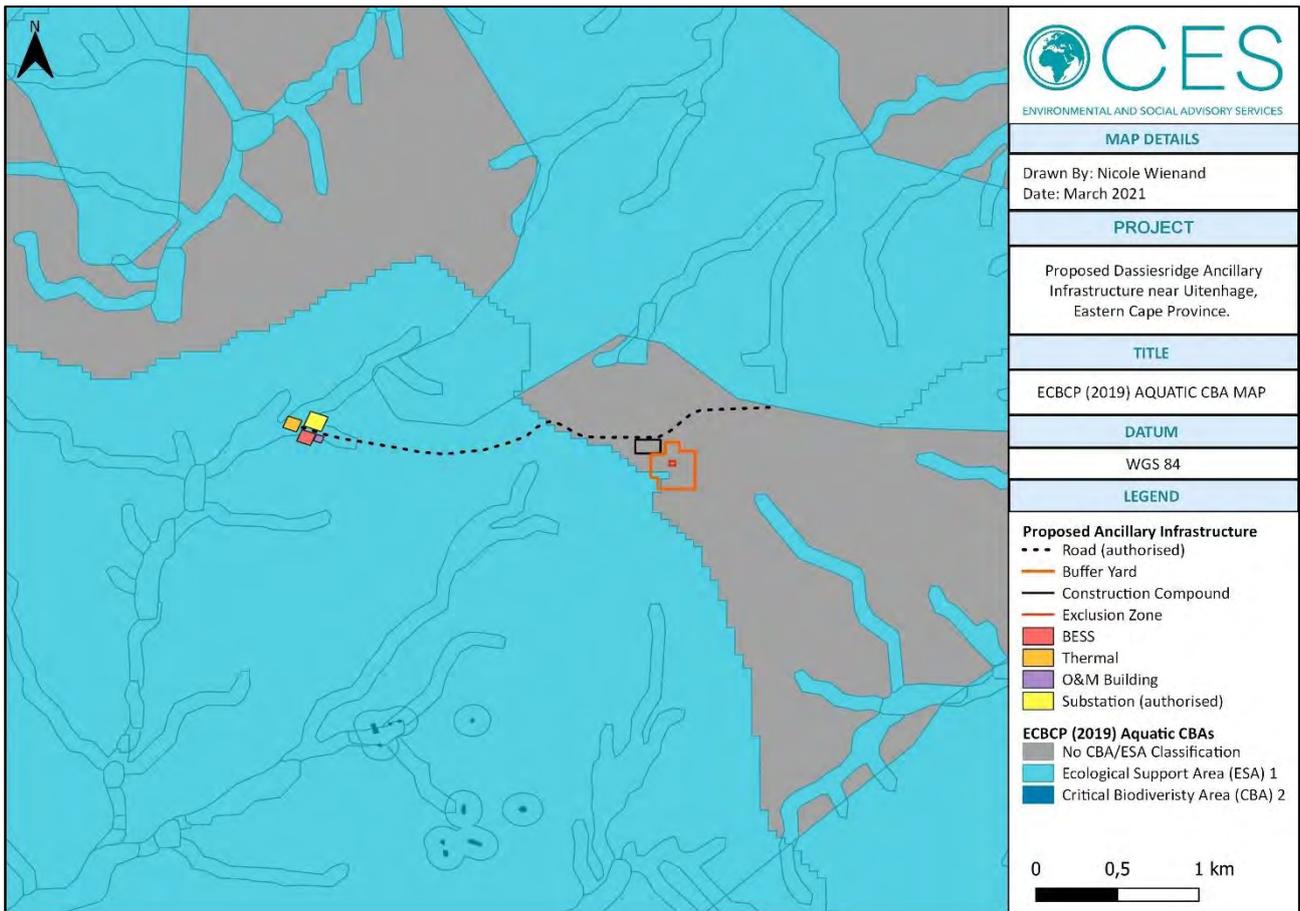


Figure 7.17: ECBCP (2019) Aquatic Map of the Umoyilanga Ancillary Infrastructure Site.

The Addo Biodiversity Sector Plan (BSP, 2012) serves as a critical tool for land use planning, environmental assessments, land-use authorisations, and natural resource management, ultimately guiding sustainable development within the Blue Crane Route, Ikwezi, Sundays River Valley and Ndlambe Local Municipalities (LM). These four municipalities harbour 44.7% of South Africa’s Albany Thicket Biome and are therefore very important in terms of biodiversity. Furthermore, these LM’s occur within the southwestern Albany-Pondoland-Maputoland Hotspot, as well as South Africa’s fastest expanding National Protected Area – the Addo Elephant National Park. The Addo BSP therefore assists with mapping CBAs, ensuring that the information contained therein is utilized and considered by local municipalities, thereby informing land-use planning and decision making.

According to the Addo BSP, a portion of the proposed Umoyilanga Ancillary Infrastructure, specifically the proposed Buffer Yard, falls within an area classified as Other Natural Areas (ONA) and a small section of an Ecological Support Area (ESA) (Figure 7.18). While CBAs are critical for achieving biodiversity targets for species, ecosystems or ecological processes and infrastructure, ESAs are important in that they support the functioning of CBAs and are often vital for the delivery of ecosystem services.

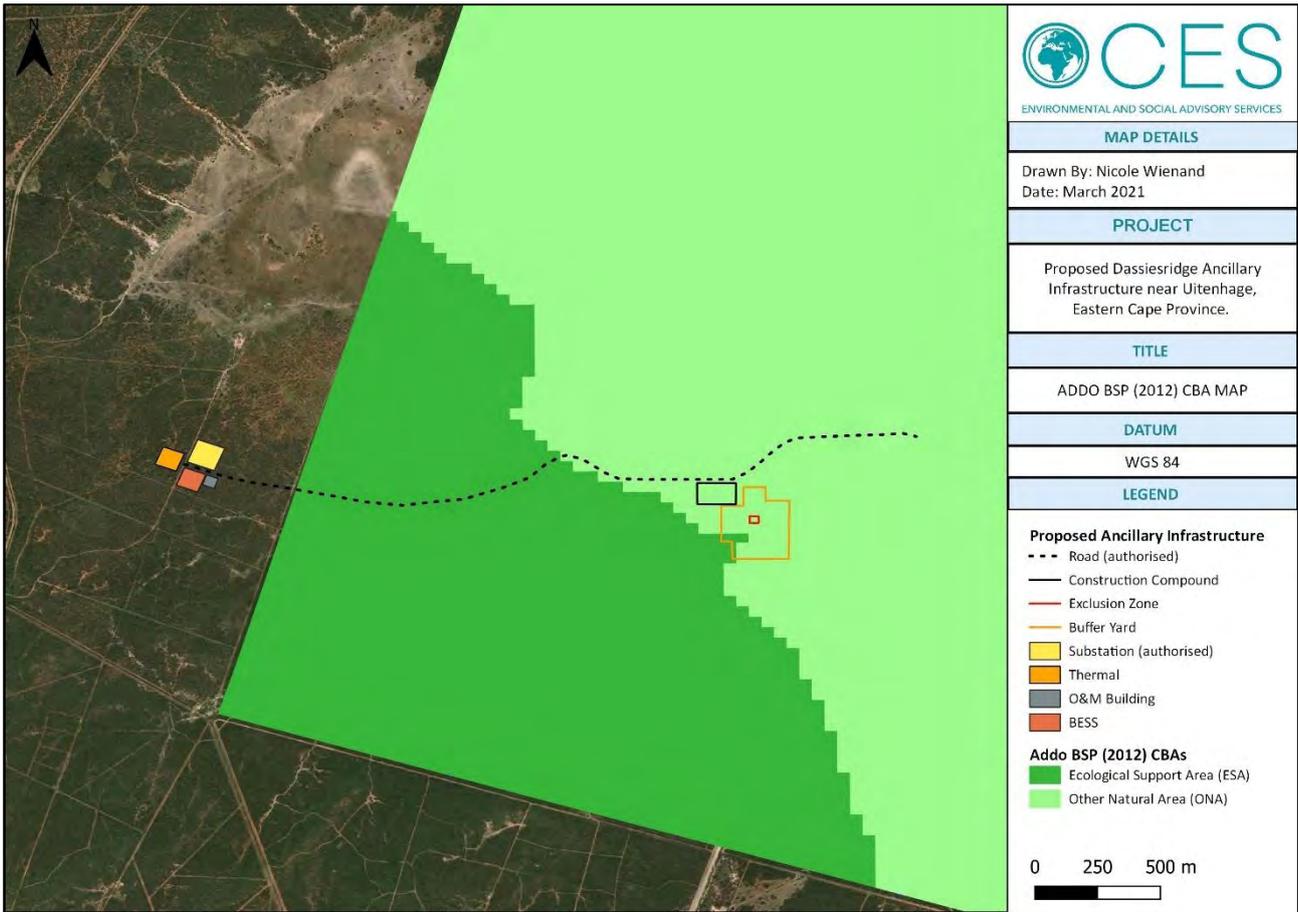


Figure 7.18: Addo BSP (2012) CBA Map of the Umoyilanga Ancillary Infrastructure Site.

7.9 THREATENED ECOSYSTEMS

The National Environmental Management: Biodiversity Act (NEM:BA) (Act No. 10 OF 2004) provides a national list of ecosystems which are threatened and in need of protection – GN 1002 of 2011. According to the NEM:BA List of Threatened Ecosystems, the proposed Umoyilanga Ancillary Infrastructure site does not occur within a threatened ecosystem. These findings are supported by the NBA (2018) Terrestrial ecosystem threat status assessment (Skowno *et al.*, 2019) which confirmed that the ecosystems within and surrounding the site are classified as **Least Concern** (Figure 7.19). The nearest threatened ecosystem, identified by the NBA (2018) and NEM:BA (2011), is Albany Alluvial Vegetation (**Endangered**) which is located southwest of the site.

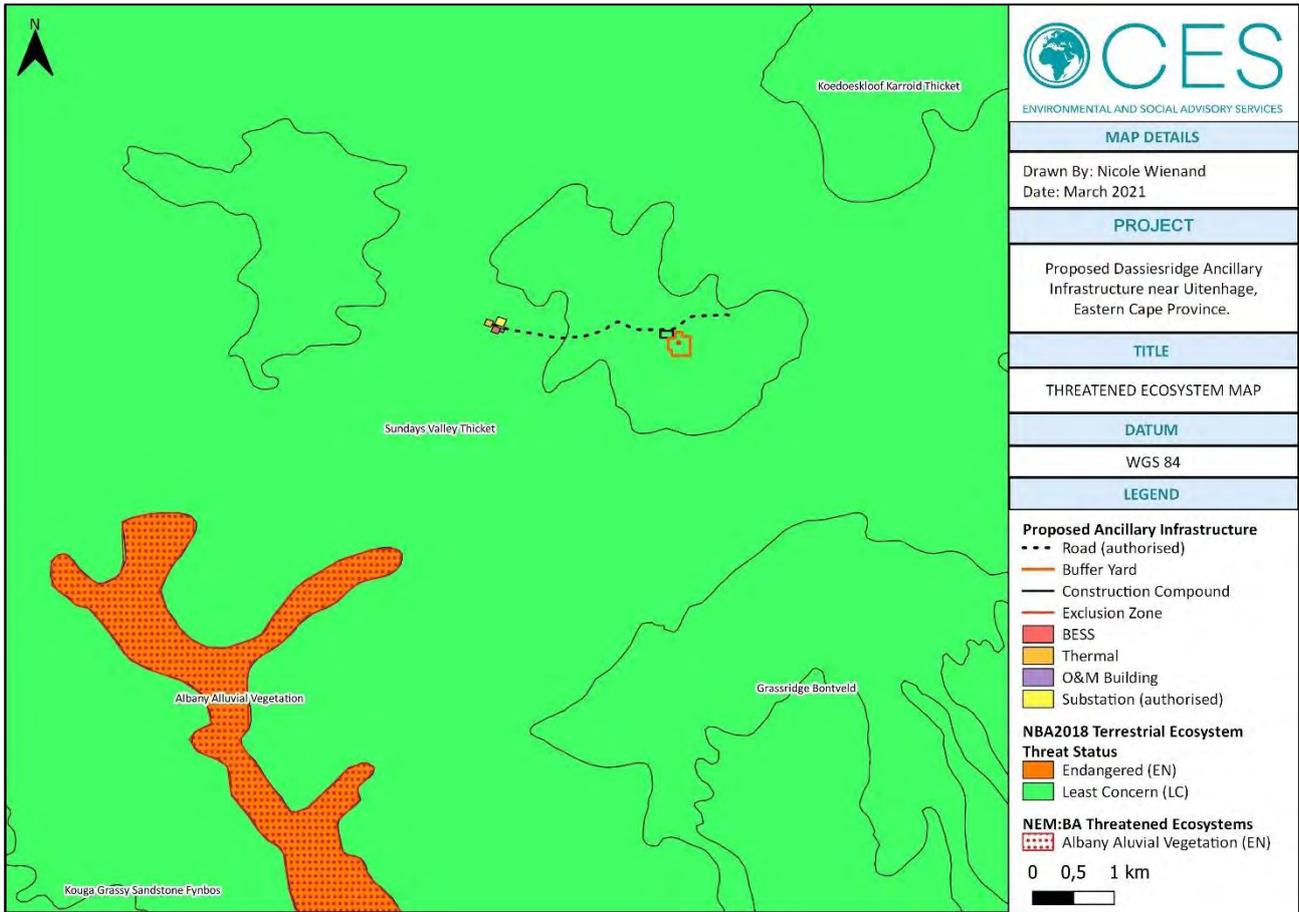


Figure 7.19: Threatened Ecosystems Map of the Umoyilanga Ancillary Infrastructure Site.

7.10 PROTECTED AREAS

The National Protected Areas Expansion Strategy (NPAES, 2008) was developed to “achieve cost-effective protected area expansion for ecological sustainability and increased resilience to climate change.” The NPAES originated as Government recognised the importance of protected areas in maintaining biodiversity and critical ecological process. The NPAES sets targets for expanding South Africa’s protected area network, placing emphasis on those ecosystems that are least protected. In addition, the South African Protected Areas Database (SAPAD) contains spatial data for the conservation estate of South Africa. It includes spatial and attribute information for both formally protected areas and areas that have less formal protection.

The proposed Umoyilanga Ancillary Infrastructure is neither situated within a focus area (NPAES) nor within a protected area (SAPAD), as indicated in Figure 7.20.

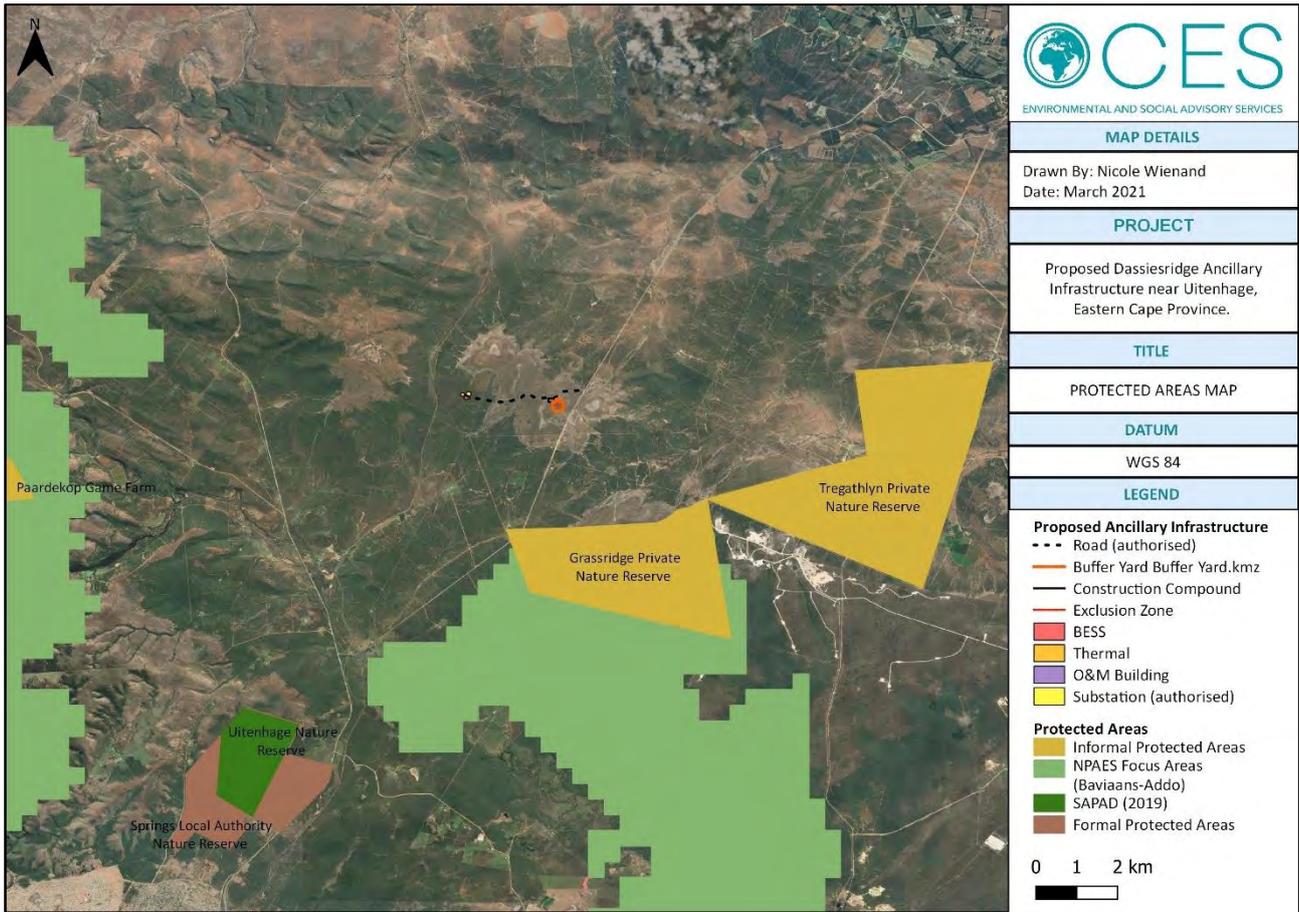


Figure 7.20: Protected Areas Map of the Umoyilanga Ancillary Infrastructure Site and Surrounds.

7.11 SOCIAL SETTING

According to the NMBM IDP (2017/18 to 2021/22, third edition), Nelson Mandela Bay is located on the southern coast of South Africa, on the shores of Algoa Bay. The NMBM is one of two metropolitan municipalities in the Eastern Cape Province and it incorporates Gqeberha (Port Elizabeth), Kariega (Uitenhage), and Despatch, as well as their surrounding agricultural areas.

Social challenges within the NMBM include unemployment and inequality. According to the NMBM IDP (2017/18 to 2021/22, third edition), job creation and sustainable livelihood will be at the centre of all municipal programmes of development.

“Altogether 640 000 people were living in poverty in the Nelson Mandela Bay Metropolitan area (ECSECC, 2017), which is 15.98% higher than the 552 000 in 2006. In 2016, 65.1% of the African population group lived in poverty, as compared to the 67.72% in 2006, with 40.6% of the Coloured and 8% of the Asian population groups living in poverty. Currently, approximately 30% of formal households in the city cannot afford basic services in terms of the Indigent Programme, with an average of 16.1% of households receiving no income (CSurvey, 2016).

The unemployment rate in the Metro is at 36.8% (CS, 2016) - up by 4.2 % from the same period last year (31.8%). The number of unemployed in the Bay increased from 159 000 to 202 000. The impact of high unemployment remains a great concern to the residents and all key stakeholders in the Metro.” – NMBM IDP (2017/18 to 2021/22), third edition, page 38.

According to the SRVLM IDP (2016/2017), the SRVLM is one of the nine local municipalities in the Sarah Baartman District. It is a Category B municipality with a collective executive system combined with a ward participatory system established in terms of the Local Government Municipal Structures Act 117. The SRVLM is situated approximately 50 km from Coega Industrial Development Zone (IDZ) in the NMBM. The municipality can boast its ecotourism and agricultural potential. The Addo Elephant National Park and its citrus production are two important drivers in the SRVLM. The valley is characterised by harsh climate conditions, with summer temperatures rising in excess of 40°C. Rainfall is spread over the year and is between 250 – 500 mm per annum. The valley is characterised by wide, fertile flood plains and is associated with low-lying land and steep, less fertile soil. The area outside the Sundays River includes the Paterson area, the coastal belt, and the west of Alexandria (SRVLM IDP, 2016/2017).

7.12 ARCHAEOLOGICAL AND CULTURAL HERITAGE

According to the Archaeological Assessment Report (Exigo, March 2021), an analysis of historical aerial imagery and archive maps of areas subject to this assessment suggests a landscape that seems to have remained relatively pristine during the last century. This inference was confirmed during an archaeological site assessment where no heritage remains were encountered within the site. The following observations were made during the site survey:

- The Stone Age: Stone Age remains associated with geo-morphological exposures; rock outcrops and drainage lines are known to exist in the larger Kariega (Uitenhage) area. However, no Stone Age scatters, or occurrences were observed in the project footprint area.
- The Iron Age Farmer Period: A frontier zone between the north and the south, this part of the Eastern Cape contains traces of precolonial Iron Age Farmer Period remnants. However, the site inspection produced no Iron Age farmer sites or remains.
- The Historical/Colonial Period: Kariega (Uitenhage) and its surroundings have a long and extensive Colonial Period settlement history. From around the first half of the 19th century, the area was frequented by explorers, missionaries and farmers who all contributed to a recent history of contact and conflict. Still, no features or structures dating to Historical Period farming occur in the proposed site and no features relating to the built environment of the early Historical Period were observed in the proposed site.
- Graves: No human burial sites were observed within the proposed site.

The National Screening Tool Report classifies the entire proposed Umoyilanga Ancillary Infrastructure site as having LOW archaeological and cultural heritage theme sensitivity, as indicated in Figure 7.21. Please refer to the **Archaeological Assessment Report** (Appendix C) for more information.



Figure 7.21: National Screening Tool Archaeological and Cultural Heritage Theme Sensitivity Map of the Proposed Umoyilanga Ancillary Infrastructure Site.

8. IMPACT ASSESSMENT

8.1 CES ASSESSMENT METHODOLOGY

8.1.1 Pre-Mitigation Evaluation Criteria

This rating scale adopts four (4) key factors to determine the overall significance of the impact prior to mitigation:

1. **Temporal Scale:** This scale defines the duration of any given impact over time. This may extend from the short-term (less than 5 years, equivalent to the construction phase) to permanent. Generally, the longer the impact occurs the greater the significance of any given impact.
2. **Spatial Scale:** This scale defines the spatial extent of any given impact. This may extend from the local area to an impact that crosses international boundaries. The wider the impact extends, the more significant it is likely to be.
3. **Severity/Benefits Scale:** This scale defines how severe negative impacts would be, or how beneficial positive impacts would be. This negative/positive scale is critical in determining the overall significance of any impacts.
4. **Likelihood Scale:** This scale defines the risk or chance of any given impact occurring. While many impacts generally do occur, there is considerable uncertainty in terms of others. The scale varies from unlikely to definite, with the overall impact significance increasing as the likelihood increases.

For each impact, these four (4) scales are ranked and assigned a score. These scores are combined and used to determine the overall impact significance prior to mitigation.

Table 8.1: Pre-Mitigation Evaluation Criteria.

TEMPORAL SCALE		
Short term	Less than 5 years	
Medium term	Between 5-20 years	
Long term	Between 20 and 40 years (a generation) and from a human perspective also permanent	
Permanent	Over 40 years and resulting in a permanent and lasting change that will always be there	
SPATIAL SCALE		
Localised	At localised scale and a few hectares in extent	
Study Area	The proposed site and its immediate environs	
Regional	District and Provincial level	
National	Country	
International	Internationally	
SEVERITY SCALE	SEVERITY	BENEFIT
Slight	Slight impacts on the affected system(s) or party(ies)	Slightly beneficial to the affected system(s) and party(ies)
Moderate	Moderate impacts on the affected system(s) or party(ies)	Moderately beneficial to the affected system(s) and party(ies)
Severe/ Beneficial	Severe impacts on the affected system(s) or party(ies)	A substantial benefit to the affected system(s) and party(ies)
Very Severe/ Beneficial	Very severe change to the affected system(s) or party(ies)	A very substantial benefit to the affected system(s) and party(ies)
LIKELIHOOD SCALE		
Unlikely	The likelihood of these impacts occurring is slight	
May Occur	The likelihood of these impacts occurring is possible	
Probable	The likelihood of these impacts occurring is probable	
Definite	The likelihood is that this impact will definitely occur	

Table 8.2: Significance Descriptions.

SIGNIFICANCE RATE		DESCRIPTION
LOW NEGATIVE	LOW POSITIVE	Impacts of low significance are typically acceptable impacts for which mitigation is desirable but not essential. The impact by itself is insufficient, even in combination with other low impacts, to prevent the development being approved. These impacts will result in negative medium to short term effects on the natural environment or on social systems.
MODERATE NEGATIVE	MODERATE POSITIVE	Impacts of moderate significance are impacts that require mitigation. The impact is insufficient by itself to prevent the implementation of the project but in conjunction with other impacts may prevent its implementation. These impacts will usually result in a negative medium to long-term effect on the natural environment or on social systems.
HIGH NEGATIVE	HIGH POSITIVE	Impacts that are rated as being high are serious impacts and may prevent the implementation of the project if no mitigation measures are implemented, or the impact is very difficult to mitigate. These impacts would be considered by society as constituting a major and usually long-term change to the environment or social systems and result in severe effects.
VERY HIGH NEGATIVE	VERY HIGH POSITIVE	Impacts that are rated as very high are very serious impact which may be sufficient by itself to prevent the implementation of the project. The impact may result in permanent change. Very often these impacts are unmitigable and usually result in very severe effects or very beneficial effects.

8.1.2 Post-Mitigation Criteria

Once mitigation measures are proposed, the following three (3) factors are then considered to determine the overall significance of the impact after mitigation.

- 1. Reversibility Scale:** This scale defines the degree to which an environment can be returned to its original/partially original state.
- 2. Irreplaceable loss Scale:** This scale defines the degree of loss which an impact may cause.
- 3. Mitigation potential Scale:** This scale defines the degree of difficulty of reversing and/or mitigating the various impacts ranges from very difficult to easily achievable. Both the practical feasibility of the measure, the potential cost and the potential effectiveness is taken into consideration when determining the appropriate degree of difficulty.

Table 8.3: Post-Mitigation Criteria.

REVERSIBILITY	
Reversible	The activity will lead to an impact that can be reversed provided appropriate mitigation measures are implemented.
Irreversible	The activity will lead to an impact that is permanent regardless of the implementation of mitigation measures.
IRREPLACEABLE LOSS	
Resource will not be lost	The resource will not be lost/destroyed provided mitigation measures are implemented.
Resource will be partly lost	The resource will be partially destroyed even though mitigation measures are implemented.
Resource will be lost	The resource will be lost despite the implementation of mitigation measures.
MITIGATION POTENTIAL	
Easily achievable	The impact can be easily, effectively and cost effectively mitigated/reversed.
Achievable	The impact can be effectively mitigated/reversed without much difficulty or cost.
Difficult	The impact could be mitigated/reversed but there will be some difficulty in ensuring effectiveness and/or implementation, and significant costs.
Very Difficult	The impact could be mitigated/reversed but it would be very difficult to ensure effectiveness, technically very challenging and financially very costly.

The following assumptions and limitations are inherent in the rating methodology:

- **Value Judgements:** Although this scale attempts to provide a balance and rigor to assessing the significance of impacts, the evaluation relies heavily on the values of the person making the judgment. For this reason, impacts of especially a social nature need to reflect the values of the affected society.
- **Cumulative Impacts:** These affect the significance rating of an impact because it considers the impact in terms of both on-site and off-site sources. This is particularly problematic in terms of impacts beyond the scope of the proposed development and the BA. For this reason, it is important to consider impacts in terms of their cumulative nature.
- **Seasonality:** Certain impacts will vary in significance based on seasonal change. Thus, it is difficult to provide a static assessment. Seasonality will need to be implicit in the temporal scale and, with management measures being imposed accordingly (e.g. dust suppression measures being implemented during the dry season).

8.2 IDENTIFICATION OF GENERAL IMPACTS AND ASSESSMENT

PLANNING AND DESIGN PHASE

IMPACT 1: COMPLIANCE WITH RELEVANT LEGISLATION

Cause and Comment: *Preferred Alternative:* During the Planning and Design Phase, failure to obtain the necessary authorisations and/or permits, as well as failure to adhere to existing policies and legal obligations, could lead to the project conflicting with local, provincial, and national policies and legislation. This could result in a lack of institutional support for the project, overall project failure and undue social and environmental impacts.

No-Go Alternative: The no-go alternative will not require authorisation or permitting.

Mitigation Measures:

- Activities, which trigger listed activities in terms of the National Environmental Management Act (NEMA) (Act No. 107 of 1998, as amended) Environmental Impact Assessment (EIA) Regulations (2014 and subsequent 2017 amendments), must not commence prior to receipt of an Environmental Authorisation (EA) from the national Department of Environment, Forestry and Fisheries (DEFF).
- Any required water uses, in terms of Section 21 of the NWA, must not commence prior to receipt of the necessary water use authorisation(s) from the Department of Water and Sanitation (DWS).
- All additional permitting and authorisation requirements, including plant removal permits, must be obtained prior to the commencement of any vegetation clearance and/or construction activities.
- A suitably qualified Environmental Control Officer (ECO) must be appointed prior to the commencement of the construction phase to monitor the Applicant's compliance with the conditions of the EMPr, as well as all the relevant permits and authorisations.
- All phases of the Umoyilanga Ancillary Infrastructure development must comply with the relevant municipal by-laws and should consider the available best practice guidelines.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Long-Term	Regional/ National	Severe	May Occur	HIGH NEGATIVE (-)	Reversible	Resource could be lost	Achievable	LOW NEGATIVE (-)
No-Go Alternative	<i>Not Applicable</i>									

CONSTRUCTION PHASE

IMPACT 2: INCREASE IN AIR EMISSIONS (DUST)

Cause and Comment: *Preferred Alternative:* Dust created as a result of the construction activities, such as vegetation clearance, could be a nuisance during the construction phase.
No-Go Alternative: The no-go alternative will not result in an increase in air emissions in the form of dust.

Mitigation Measures:

- Exhaust emissions from construction vehicles must be minimised by ensuring that all vehicles are properly equipped and serviced.
- Vegetation clearance must be limited to the approved and demarcated development footprints.
- If fine building materials, such as sand, are to be transported on the back of trucks, they must be adequately covered.
- A “complaints register”, consisting of all public complaints and actions in response to these complaints, must be maintained during the construction phase.
- A speed limit of 30km/h must not be exceeded on gravel roads.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Short-Term	Localised	Moderate	Probable	MODERATE NEGATIVE (-)	Reversible	Resource will not be lost	Easily Achievable	LOW NEGATIVE (-)
No-Go Alternative	<i>Not Applicable</i>									

IMPACT 3: INCREASE IN NOISE LEVELS

Cause and Comment: *Preferred Alternative:* Noise will be created on the site during the construction phase due to the operation of construction equipment, noise generated by construction vehicles both on-site and during travel to and from the site as well as noise generated by the construction workers which are all likely to result in an increase in noise levels and potentially be a nuisance to individuals in proximity to the site.

No-Go Alternative: The no-go alternative will not result in an increase in noise levels.

Mitigation Measures:

- All construction vehicles must be in sound working order and meet the necessary noise level requirements.
- All relevant municipal by-laws, with regards to noise control, must apply.
- A “complaints register”, consisting of all public complaints and actions in response to these complaints, must be maintained during the construction phase.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Short-Term	Localised	Slight	Probable	LOW NEGATIVE (-)	Reversible	Resource will not be lost	Easily Achievable	LOW NEGATIVE (-)
No-Go Alternative	<i>Not Applicable</i>									

IMPACT 4: SEDIMENTATION AND STORMWATER MANAGEMENT

Cause and Comment: *Preferred Alternative:* Sediment is likely to be created during the construction phase due to construction activities in proximity to watercourses. These sediments could be carried into the watercourses during rainfall events as a result of increased runoff due to the increase in impermeable surfaces. In addition, inadequate stormwater management could result in increased soil erosion within the proposed site and surrounds.

No-Go Alternative: The no-go alternative will not result in an increase in sedimentation or erosion.

Mitigation Measures:

- A Stormwater Management Plan must be compiled and implemented throughout the construction phase.
- Where possible, vegetation must be retained to avoid soil erosion.
- Construction activities should be demarcated, and vegetation clearing, and topsoil removal limited to these areas.
- Stockpiled materials, including cleared vegetation, must not be stored within 100 m of watercourses and should not exceed 2 m in height.
- Stockpiles should be covered during windy periods.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct & Indirect	Short-Term	Localised	Moderate	May Occur	LOW NEGATIVE (-)	Reversible	Resource will not be lost	Easily Achievable	LOW NEGATIVE (-)
No-Go Alternative	<i>Not Applicable</i>									

IMPACT 5: SOIL AND WATER CONTAMINATION DUE TO HAZARDOUS SUBSTANCES

Cause and Comment: *Preferred Alternative:* Accidental spillages of chemicals and other potentially hazardous substances, such as fuel, during the construction phase could result in the pollution of the soils as well as surface- and groundwater pollution.

No-Go Alternative: The no-go alternative will not require the use of hazardous substances.

Mitigation Measures:

- All stationary machinery must be equipped with a drip tray to retain any oil leaks.
- Any chemicals to be used during the construction phase must be stored safely on bunded surfaces in the site camp.
- Cement mixing must take place on a contained and impermeable surface, should it be undertaken on site.
- Emergency plans, and spill kits, must be in place in case of accidental spillages on site.
- If required, chemical toilets must be maintained and serviced regularly to reduce the risk of surface- and groundwater contamination.
- Any hazardous substances and waste must be stored in impermeable bunded areas or in secondary containers with 110% of the volume of the contents within it.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct & Indirect	Short-Term	Localised	Severe	May Occur	HIGH NEGATIVE (-)	Reversible	Resource will not be lost	Achievable	MODERATE NEGATIVE (-)
No-Go Alternative	<i>Not Applicable</i>									

IMPACT 6: FIRE RISK

Cause and Comment: Preferred Alternative: The proposed construction of the Umoyilanga Ancillary Infrastructure will increase the risk of fires, which could potentially result in the loss of grazing and wildlife habitats, as well as pose a safety risk to livestock, wildlife and construction workers in proximity to the development.

No-Go Alternative: The risk of fires, particularly during the drier months, exists in the absence of the proposed development.

Mitigation Measures:

- Open fires must not be permitted on site during the construction phase.
- Waste must not be burned onsite.
- Smoking must be restricted to designated smoking areas, which have easy access to fire-fighting equipment.
- The Contractor, or the appointed fire marshal, should take all reasonable steps to prevent the accidental occurrence and the spreading of fires.
- The Contractor and/or the appointed fire marshal must ensure that there is always fire-fighting equipment available on site during the construction phase.
- The Contractor and/or the appointed fire marshal must ensure that all site personnel are aware of the risk of fires, the procedure to be followed in the event of a fire and that all site personnel have access to the relevant contact details of the nearest Fire and Emergency Services.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct & Indirect	Short-Term	Study Area	Severe	May Occur	HIGH NEGATIVE (-)	Reversible	Resource will be partly lost	Difficult	MODERATE NEGATIVE (-)
No-Go Alternative	Existing	Long-Term	Study Area	Moderate	May Occur	MODERATE NEGATIVE (-)	N/A	N/A	N/A	N/A

IMPACT 7: SOCIO-ECONOMIC BENEFITS

Cause and Comment: Preferred Alternative: The construction of the Umoyilanga Ancillary Infrastructure will create short-term employment opportunities. These employment opportunities will contribute to the skills development of individuals and a short-term income which will benefit individuals and their families.

No-Go Alternative: The no-go alternative will not result in the creation of additional socio-economic benefits.

Mitigation Measures:

- Where suitable, preference should be given to the employment of individuals residing in the communities which are located close to the site.
- A Community Liaison Officer (CLO) should be appointed for the duration of the construction phase. This individual should have knowledge of the local communities and assist with the employment processes. The CLO should be available and accessible to the general public, the developer and all individuals employed by the developer during the construction phase.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Short-Term	Regional	Moderate	Definite	MODERATE POSITIVE (+)	N/A	N/A	Easily Achievable	MODERATE POSITIVE (+)
No-Go Alternative	Not Applicable									

IMPACT 8: LOSS OF POTENTIAL AGRICULTURAL LAND DUE TO DEVELOPMENT

Cause and Comment: Preferred Alternative: The vegetation clearing required for the construction of the Umoyilanga Ancillary Infrastructure will result in the loss of grazing, which is currently used for livestock and wildlife grazing.

No-Go Alternative: The no-go alternative will result in the loss of agricultural land in the area due to the development of the Umoyilanga (Dassiesridge) WEF and associated infrastructure.

Mitigation Measures:

- Where possible, vegetation must be retained to avoid soil erosion.
- Construction activities should be demarcated, and vegetation clearing, and topsoil removal limited to these areas.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct & Cumulative	Long-Term	Study Area	Moderate	Definite	MODERATE NEGATIVE (-)	Irreversible	Resource will be partly lost	Achievable	MODERATE NEGATIVE (-)
No-Go Alternative	Existing	Long-Term	Study Area	Moderate	Definite	MODERATE NEGATIVE (-)	N/A	N/A	N/A	N/A

IMPACT 9: WASTE MANAGEMENT

Cause and Comment: Preferred Alternative: The inadequate management of waste which is produced during the construction phase is likely to result in the pollution of the site and the immediate surrounds.

No-Go Alternative: The no-go alternative will not require waste management measures.

Mitigation Measures:

- All general waste, which is temporarily stored, on site must be done so in windproof/sealable containers before being disposed of at a registered landfill site.
- Waste must not be burned on site.
- Construction workers must be informed that littering is prohibited within the construction site and surrounding areas.
- A Waste Management Plan and any required Method Statements should be compiled and implemented during the construction phase.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Short-Term	Study Area	Moderate	Probable	MODERATE NEGATIVE (-)	Reversible	Resource will not be lost	Achievable	LOW NEGATIVE (-)
No-Go Alternative	Not Applicable									

IMPACT 10: VISUAL AND AESTHETIC IMPACTS

Cause and Comment: *Preferred Alternative:* The construction activities associated with the development of the Umoyilanga Ancillary Infrastructure are likely to have an adverse impact on the visual and aesthetic quality of the site and the immediate surrounds.

No-Go Alternative: The no-go alternative will not impact the visual and aesthetic quality of the area.

Mitigation Measures:

- All general waste, which is temporarily stored, on site must be done so in windproof/sealable containers before being disposed of at a registered landfill site.
- Soil disturbance and vegetation clearance should be limited to the approved and demarcated development footprints.
- Temporary disturbed areas must be rehabilitated as soon as practically possible.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Short-Term	Study Area	Slight	Probable	LOW NEGATIVE (-)	Irreversible	Resource will be partly lost	Difficult	LOW NEGATIVE (-)
No-Go Alternative	<i>Not Applicable</i>									

OPERATIONAL PHASE

IMPACT 11: SEDIMENTATION AND STORMWATER MANAGEMENT

Cause and Comment: *Preferred Alternative:* The creation of impermeable surfaces due to the operation of the Umoyilanga Ancillary Infrastructure could contribute to increased runoff during rainfall events. Sediment, created during the operation of the Umoyilanga Ancillary Infrastructure, could be carried into watercourses during rainfall events. In addition, the increase in runoff and inadequate stormwater management could result in an increase in soil erosion within the site and in the surrounding areas.

No-Go Alternative: The no-go alternative will not result in an increase in impermeable surfaces.

Mitigation Measures:

- The Stormwater Management Plan, compiled and implemented during the construction phase, must include operational phase management measures for implementation throughout the operational phase.
- Stockpiled materials must not be stored within 100 m of watercourses and should not exceed 2 m in height.
- The ECO should monitor the site regularly for signs of erosion. Remedial action must be taken at the first signs of erosion.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct & Indirect	Long-Term	Study Area	Moderate	May Occur	MODERATE NEGATIVE (-)	Reversible	Resource will not be lost	Achievable	LOW NEGATIVE (-)
No-Go Alternative	<i>Not Applicable</i>									

IMPACT 12: SOIL AND WATER CONTAMINATION DUE TO HAZARDOUS SUBSTANCES

Cause and Comment: Preferred Alternative: Accidental spillages of chemicals and other potentially hazardous substances during the operational phase could result in the pollution of the soils as well as surface- and groundwater pollution.

No-Go Alternative: The no-go alternative will not require the use of hazardous substances.

Mitigation Measures:

- All stationary machinery, which is used for maintenance purposes, must be equipped with a drip tray to retain any oil leaks.
- Emergency plans must be in place and spill kits must readily available in case of accidental spillages on site.
- Any chemicals which are stored on site must be stored safely on bunded surfaces in the site camp and any hazardous substances and waste must be stored in impermeable bunded areas or in secondary containers with 110% of the volume of the contents within it.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct & Indirect	Long-Term	Localised	Severe	May Occur	MODERATE NEGATIVE (-)	Reversible	Resource will not be lost	Achievable	LOW NEGATIVE (-)
No-Go Alternative	Not Applicable									

IMPACT 13: FIRE RISK

Cause and Comment: Preferred Alternative: The operation of the Li-ion battery technology alternative for the BESS preferred alternative has fire risks associated with it, such as fire risks due to thermal runaway. This will result in an increased fire risk within the study area due to the existing (see no-go alternative) fire risk which is at its peak during dry periods.

No-Go Alternative: The risk of fires, particularly during the drier months, exists in the absence of the operation of the Umoyilanga Ancillary Infrastructure.

Mitigation Measures:

- The Umoyilanga Ancillary Infrastructure, especially the BESS, must be maintained frequently to reduce the risk of annual degradation of the facility.
- Batteries should be encased in protective covers and/or insulated.
- Waste must not be burned onsite.
- The maintenance personnel, or the appointed fire marshal, must take all responsible steps to prevent the accidental occurrence and the spreading of fires.
- The maintenance personnel and/or the appointed fire marshal must ensure that there is always fire-fighting equipment available on site during the operational phase.
- The maintenance personnel must be aware of the risk of fires, the procedure to be followed in the event of a fire and they must have access to the relevant contact details of the nearest Fire and Emergency Services.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct & Indirect	Long-Term	Study Area	Severe	May Occur	HIGH NEGATIVE (-)	Reversible	Resource will be partly lost	Difficult	MODERATE NEGATIVE (-)
No-Go Alternative	Existing	Long-Term	Study Area	Moderate	May Occur	MODERATE NEGATIVE (-)	N/A	N/A	N/A	N/A

IMPACT 14: SOCIO-ECONOMIC BENEFITS

Cause and Comment: *Preferred Alternative:* The operation of the Umoyilanga Ancillary Infrastructure will create long-term employment opportunities. These will primarily be employment opportunities involving the operation and maintenance of the Ancillary Infrastructure. These employment opportunities will contribute to the skills development of individuals and a long-term income which will benefit individuals and their families.

No-Go Alternative: The no-go alternative will not result in the creation of additional socio-economic benefits.

Mitigation Measures:

→ Where suitable, preference should be given to the employment of individuals residing in the communities which are located close to the site.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Long-Term	Regional	Moderate	Definite	MODERATE POSITIVE (+)	N/A	N/A	Easily Achievable	MODERATE POSITIVE (+)
No-Go Alternative	Not Applicable									

IMPACT 15: WASTE MANAGEMENT

Cause and Comment: *Preferred Alternative:* The inadequate management of waste which is produced during the operational phase is likely to result in the pollution of the study area and immediate surrounds.

No-Go Alternative: The no-go alternative will not require waste management measures.

Mitigation Measures:

→ All general waste, which is temporarily stored, on site must be done so in windproof/sealable containers before being disposed of at a registered landfill site.

→ Waste must not be burned on site.

→ Maintenance staff must be informed that littering is prohibited within the construction site and surrounding areas.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	Reversible	Resource will not be lost	Easily Achievable	LOW NEGATIVE (-)
No-Go Alternative	Not Applicable									

IMPACT 16: VISUAL AND AESTHETIC IMPACTS

Cause and Comment: *Preferred Alternative:* The operation of the Umoyilanga Ancillary Infrastructure could have an adverse impact on the visual and aesthetic quality of the study area and immediate surrounds.

No-Go Alternative: The no-go alternative will not impact the visual and aesthetic quality of the area.

Mitigation Measures:

→ All general waste, which is temporarily stored, on site must be done so in windproof/sealable containers before being disposed of at a registered landfill site.

→ The rehabilitation of disturbed areas must be monitored to ensure successful rehabilitation and the resultant decrease in the visual impact.

→ Maintenance staff must be informed that littering is prohibited within the construction site and surrounding areas.

→ The Ancillary Infrastructure must be maintained to reduce the risk of degradation of the infrastructure.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	Irreversible	Resource will be partly lost	Difficult	LOW NEGATIVE (-)
No-Go Alternative	<i>Not Applicable</i>									

IMPACT 17: SUPPORT OF RENEWABLE ENERGY INFRASTRUCTURE FUNCTIONING

Cause and Comment: Preferred Alternative: The Umoyilanga Ancillary Infrastructure will supplement the development of the authorised Umoyilanga (Dassiesridge WEF) and associated infrastructure.

No-Go Alternative: The no-go alternative will not support renewable energy infrastructure functioning.

Mitigation Measures:

→ The Ancillary Infrastructure must be maintained to reduce the risk of degradation of the infrastructure.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Long-Term	Study Area	Beneficial	Definite	HIGH POSITIVE (+)	N/A	N/A	Achievable	HIGH POSITIVE (+)
No-Go Alternative	<i>Not Applicable</i>									

DECOMMISSIONING PHASE

As per the temporal scales (“long-term”) indicated in the significance statement for the operational phase in the section above, the Umoyilanga Ancillary Infrastructure, excluding the temporary Buffer Yard, is likely to be used over an extensive period of time, and decommissioning is not foreseen in the near future. Should the infrastructure be decommissioned in the long-term, the impacts associated with the decommissioning phase could be similar to those for the construction phase and most of the mitigation measures stipulated for the construction phase will, therefore, be relevant. If necessary, the EMPr should be updated to include relevant decommissioning mitigation measures and recommendations prior to the commencement of the decommissioning phase. **The following decommissioning phase impacts and mitigation measures are applicable to the decommissioning of the temporary Buffer Yard.**

IMPACT 18: INCREASE IN AIR EMISSIONS (DUST)																																											
<p>Cause and Comment: <i>Preferred Alternative:</i> Dust created as a result of the decommissioning activities could be a nuisance during the decommissioning phase. <i>No-Go Alternative:</i> The no-go alternative will not result in an increase in air emissions in the form of dust.</p>																																											
<p>Mitigation Measures:</p> <ul style="list-style-type: none"> → Exhaust emissions from vehicles, used during the decommissioning phase, must be minimised by ensuring that all vehicles are properly equipped and serviced. → A “complaints register”, consisting of all public complaints and actions in response to these complaints, must be maintained during the decommissioning phase. → Exposed surfaces should be revegetated as soon as practically possible. → A speed limit of 30km/h must not be exceeded on gravel roads. 																																											
<p>Significance Assessment:</p> <table border="1"> <thead> <tr> <th>Impact</th> <th>Nature</th> <th>Duration</th> <th>Extent</th> <th>Severity</th> <th>Likelihood</th> <th>Significance Before Mitigation</th> <th>Reversibility</th> <th>Irreplaceable Loss</th> <th>Mitigation Potential</th> <th>Significance After Mitigation</th> </tr> </thead> <tbody> <tr> <td>Preferred Alternative</td> <td>Direct</td> <td>Short-Term</td> <td>Localised</td> <td>Moderate</td> <td>Probable</td> <td style="background-color: #f4a460;">MODERATE NEGATIVE (-)</td> <td>Reversible</td> <td>Resource will not be lost</td> <td>Easily Achievable</td> <td style="background-color: #f4a460;">LOW NEGATIVE (-)</td> </tr> <tr> <td>No-Go Alternative</td> <td colspan="10"><i>Not Applicable</i></td> </tr> </tbody> </table>											Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation	Preferred Alternative	Direct	Short-Term	Localised	Moderate	Probable	MODERATE NEGATIVE (-)	Reversible	Resource will not be lost	Easily Achievable	LOW NEGATIVE (-)	No-Go Alternative	<i>Not Applicable</i>									
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No-Go Alternative	<i>Not Applicable</i>																																										

IMPACT 19: INCREASE IN NOISE LEVELS																																											
<p>Cause and Comment: <i>Preferred Alternative:</i> Noise will be created on the site during the decommissioning phase due to the operation of heavy equipment, noise generated by vehicles both on-site and during travel to and from the site as well as noise generated by the workers which are all likely to result in an increase in noise levels and potentially be a nuisance to individuals in proximity to the site. <i>No-Go Alternative:</i> The no-go alternative will not result in an increase in noise levels.</p>																																											
<p>Mitigation Measures:</p> <ul style="list-style-type: none"> → All vehicles and machinery must be in sound working order and meet the necessary noise level requirements. → All relevant municipal by-laws, with regards to noise control, must apply. → A “complaints register”, consisting of all public complaints and actions in response to these complaints, must be maintained during the decommissioning phase. 																																											
<p>Significance Assessment:</p> <table border="1"> <thead> <tr> <th>Impact</th> <th>Nature</th> <th>Duration</th> <th>Extent</th> <th>Severity</th> <th>Likelihood</th> <th>Significance Before Mitigation</th> <th>Reversibility</th> <th>Irreplaceable Loss</th> <th>Mitigation Potential</th> <th>Significance After Mitigation</th> </tr> </thead> <tbody> <tr> <td>Preferred Alternative</td> <td>Direct</td> <td>Short-Term</td> <td>Localised</td> <td>Slight</td> <td>Probable</td> <td style="background-color: #f4a460;">LOW NEGATIVE (-)</td> <td>Reversible</td> <td>Resource will not be lost</td> <td>Easily Achievable</td> <td style="background-color: #f4a460;">LOW NEGATIVE (-)</td> </tr> <tr> <td>No-Go Alternative</td> <td colspan="10"><i>Not Applicable</i></td> </tr> </tbody> </table>											Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation	Preferred Alternative	Direct	Short-Term	Localised	Slight	Probable	LOW NEGATIVE (-)	Reversible	Resource will not be lost	Easily Achievable	LOW NEGATIVE (-)	No-Go Alternative	<i>Not Applicable</i>									
Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation																																	
Preferred Alternative	Direct	Short-Term	Localised	Slight	Probable	LOW NEGATIVE (-)	Reversible	Resource will not be lost	Easily Achievable	LOW NEGATIVE (-)																																	
No-Go Alternative	<i>Not Applicable</i>																																										

IMPACT 20: SEDIMENTATION AND STORMWATER MANAGEMENT										
<p>Cause and Comment: <i>Preferred Alternative:</i> Sediment created during the decommissioning phase could be carried into the watercourses during rainfall events as a result of increased runoff due to impermeable surfaces and the creation of bare surfaces. In addition, inadequate stormwater management could result in increased soil erosion within the site and surrounds.</p>										

No-Go Alternative: The no-go alternative will not result in an increase in sedimentation or erosion.

Mitigation Measures:

- The Stormwater Management Plan, compiled and implemented during the construction phase, must include recommendations for the decommissioning phase.
- The site must be re-vegetated as soon as practically possible.
- Stockpiled materials must not be stored within 100 m of watercourses and should not exceed 2 m in height.
- Stockpiles should be covered during windy periods.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct & Indirect	Short-Term	Localised	Moderate	May Occur	LOW NEGATIVE (-)	Reversible	Resource will not be lost	Easily Achievable	LOW NEGATIVE (-)
No-Go Alternative	Not Applicable									

IMPACT 21: SOIL AND WATER CONTAMINATION DUE TO HAZARDOUS SUBSTANCES

Cause and Comment: *Preferred Alternative:* Accidental spillages of chemicals and other potentially hazardous substances, such as fuel, during the decommissioning phase could result in the pollution of the soils as well as surface- and groundwater pollution.

No-Go Alternative: The no-go alternative will not require the use of hazardous substances.

Mitigation Measures:

- All stationary machinery must be equipped with a drip tray to retain any oil leaks.
- Any chemicals to be used during the decommissioning phase must be stored safely on bunded surfaces in the site camp.
- Emergency plans, and spill kits, must be in place in case of accidental spillages on site.
- Any hazardous substances and waste must be stored in impermeable bunded areas or in secondary containers with 110% of the volume of the contents within it.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct & Indirect	Short-Term	Localised	Moderate	May Occur	MODERATE NEGATIVE (-)	Reversible	Resource will not be lost	Achievable	LOW NEGATIVE (-)
No-Go Alternative	Not Applicable									

IMPACT 22: FIRE RISK

Cause and Comment: *Preferred Alternative:* The decommissioning activities could increase the risk of fires, which could potentially result in the loss of grazing and wildlife habitats, as well as pose a safety risk to livestock, wildlife, and workers in proximity to the development.

No-Go Alternative: The risk of fires, particularly during the drier months, exists in the absence of the decommissioning activities.

Mitigation Measures:

- Open fires must not be permitted on site during the decommissioning phase.

- Waste must not be burned onsite.
- Smoking must be restricted to designated smoking areas, which have easy access to fire-fighting equipment.
- The Contractor, or the appointed fire marshal, should take all reasonable steps to prevent the accidental occurrence and the spreading of fires.
- The Contractor and/or the appointed fire marshal must ensure that there is always fire-fighting equipment available on site during the decommissioning phase.
- The Contractor and/or the appointed fire marshal must ensure that all site personnel are aware of the risk of fires, the procedure to be followed in the event of a fire and that all site personnel have access to the relevant contact details of the nearest Fire and Emergency Services.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct & Indirect	Short-Term	Study Area	Moderate	May Occur	MODERATE NEGATIVE (-)	Reversible	Resource will be partly lost	Difficult	MODERATE NEGATIVE (-)
No-Go Alternative	Existing	Long-Term	Study Area	Moderate	May Occur	MODERATE NEGATIVE (-)	N/A	N/A	N/A	N/A

IMPACT 23: SOCIO-ECONOMIC BENEFITS

Cause and Comment: *Preferred Alternative:* The decommissioning of the temporary Buffer Yard will create short-term employment opportunities. These employment opportunities will create a short-term income which will benefit individuals and their families.

No-Go Alternative: The no-go alternative will not result in the creation of additional socio-economic benefits.

Mitigation Measures:

- Where suitable, preference should be given to the employment of individuals residing in the communities which are located close to the site.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Short-Term	Regional	Slight	Definite	LOW POSITIVE (+)	N/A	N/A	Easily Achievable	LOW POSITIVE (+)
No-Go Alternative	Not Applicable									

IMPACT 24: WASTE MANAGEMENT

Cause and Comment: *Preferred Alternative:* The inadequate management of waste which is produced during the decommissioning phase is likely to result in the pollution of the site and the immediate surrounds.

No-Go Alternative: The no-go alternative will not require waste management measures.

Mitigation Measures:

- All general waste, which is temporarily stored, on site must be done so in windproof/sealable containers before being disposed of at a registered landfill site.
- Waste must not be burned on site.
- Workers must be informed that littering is prohibited within the site and surrounding areas.
- The Waste Management Plan and any required Method Statements should be implemented during the decommissioning phase.

Significance Assessment:										
Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Short-Term	Study Area	Moderate	Probable	MODERATE NEGATIVE (-)	Reversible	Resource will not be lost	Achievable	LOW NEGATIVE (-)
No-Go Alternative	<i>Not Applicable</i>									

IMPACT 25: VISUAL AND AESTHETIC IMPACTS

Cause and Comment: *Preferred Alternative:* The decommissioning activities are likely to have an adverse impact on the visual and aesthetic quality of the site and the immediate surrounds.

No-Go Alternative: The no-go alternative will not impact the visual and aesthetic quality of the area.

Mitigation Measures:
 → All general waste, which is temporarily stored, on site must be done so in windproof/sealable containers before being disposed of at a registered landfill site.
 → The site must be rehabilitated as soon as practically possible.

Significance Assessment:										
Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Short-Term	Study Area	Slight	Probable	LOW NEGATIVE (-)	Irreversible	Resource will be partly lost	Difficult	LOW NEGATIVE (-)
No-Go Alternative	<i>Not Applicable</i>									

8.3 SPECIALIST IMPACTS AND ASSESSMENT

CONSTRUCTION PHASE

SPECIALIST IMPACT 1: IMPACTS ON THE TERRESTRIAL HABITAT OF STRATEGIC WATER SOURCE AREAS

Cause and Comment: *Preferred Alternative:* During the construction phase, the clearance of vegetation and associated construction activities will directly impact the terrestrial habitat of Strategic Water Source Areas resulting in increased run-off and possible erosion and loss of topsoil. This in turn could impact on the water quality entering the nearby drainage lines (non-perennial rivers). However, if mitigation measures are implemented this impact will be of low significance.

Cumulative Impact: Portions of the Strategic Water Source Area have already been impacted by other WEF and powerline developments in the area. However, the footprint of the proposed Ancillary Infrastructure is relatively small compared to the existing infrastructure within the broader area. The additional impact of the proposed Ancillary Infrastructure on the SWSA will therefore have a low cumulative impact.

No-Go Alternative: The proposed Umoyilanga Ancillary Infrastructure is located within the approved site for the Umoyilanga WEF which will impact the SWSA irrespective of whether the Ancillary Infrastructure is constructed or not. The current or “no-go” impacts on the SWSA are therefore classified as low.

Mitigation Measures:

- An Erosion Management Plan and/or Method Statement should be compiled and implemented during the Construction Phase.
- Vegetation clearance must be kept to a minimum and retained where possible to avoid soil erosion.
- Lay down areas must not be located within any watercourses or drainage lines.
- Disturbed areas must be rehabilitated as soon as possible after construction.
- The site should be monitored regularly for signs of erosion. Remedial action must be taken at the first signs of erosion.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Long-Term	Study Area	Moderate	May Occur	MODERATE NEGATIVE (-)	Reversible	Resource will be partly lost	Achievable	LOW NEGATIVE (-)
Cumulative	Cumulative	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	It is difficult to implement mitigation measures specific to the cumulative impacts as the Applicant only has jurisdiction over their developments and not over other developments or farming activities in the area. However, it is imperative that the Applicant implement the mitigation measures listed above for the direct impacts.			N/A
No-Go Alternative	Existing	Short-Term	Localised	Moderate	Probable	LOW NEGATIVE (-)	N/A	N/A	N/A	N/A

SPECIALIST IMPACT 2: LOSS OF GRASSRIDGE BONTVELD

Cause and Comment: Preferred Alternative: The clearing of land for the construction of the proposed Umoyilanga Ancillary Infrastructure will result in the permanent loss of up to 3.5 ha of Grassridge Bontveld. The loss of habitat is difficult to mitigate and the overall significance will therefore be moderate even after mitigation measures are applied.

Cumulative Impact: Portions of this vegetation type have already been lost due to the construction of the Grassridge WEF, the PPP mining activities, the existing Eskom Overhead Line (OHL), and powerlines adjacent to the site as well as from grazing of livestock on neighbouring farms. However, the footprint of the proposed Umoyilanga Ancillary Infrastructure is relatively small compared to the adjacent project infrastructure and the approved Umoyilanga WEF. The additional (cumulative) loss of vegetation as a consequence of the construction of the Umoyilanga Ancillary Infrastructure is therefore classified as low negative.

No-Go Alternative: If the proposed Umoyilanga Ancillary Infrastructure is not approved, the current land use impacts such as grazing and the infestation of alien species will continue. The No-go Alternative is therefore classified as low negative.

Mitigation Measures:

- Construction vehicles and machinery must not encroach on identified 'no-go' areas or areas outside of the development footprint.
- Topsoil (20 cm, where possible) must be collected and stored in an area of low sensitivity and used to rehabilitate impacted areas that are no longer required during the operational phase (e.g. laydown areas).
- The exclusion zone in the centre of the Buffer Yard has been created to protect sensitive species. This area must be demarcated as a no-go area and the ECO must ensure that no activities encroach into this space. It is recommended that a 10m buffer be placed around the exclusion zone.
- Only indigenous species must be used for rehabilitation.
- Employees must be prohibited from making open fires during the construction phase.
- The Alien Invasive Management Plan compiled for the Umoyilanga (Dassiesridge) WEF must be implemented.
- An in-situ search and rescue plan must be developed and implemented for succulents and geophytes that will be impacted by the construction of the project site.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Moderate	Definite	MODERATE NEGATIVE (-)	Reversible	Resource will be partly lost	Achievable	MODERATE NEGATIVE (-)
Cumulative	Cumulative	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	It is difficult to implement mitigation measures specific to the cumulative impacts as the Applicant only has jurisdiction over their developments and not over other developments or farming activities in the area. However, it is imperative that the Applicant implement the mitigation measures listed above for the direct impacts.			N/A
No-Go Alternative	Existing	Short-Term	Localised	Moderate	Probable	LOW NEGATIVE (-)	N/A	N/A	N/A	N/A

SPECIALIST IMPACT 3: LOSS OF SUNDAYS THICKET

Cause and Comment: Preferred Alternative: The clearing of land for the construction of the proposed Umoyilanga Ancillary Infrastructure will result in the direct loss of up to 2.1 ha of Sundays Thicket. Given the small footprint of the infrastructure which has been placed next to an authorised substation and therefore an area that will be disturbed, it is unlikely that the loss of vegetation in this area will impact on the extent and long-term conservation of this vegetation type, which is listed as Least Threatened. The overall significance of the project activities at this site, provided the recommended mitigation measures are implemented, are classified as moderate negative.

Cumulative Impact: Portions of this vegetation type have already been lost due to the construction of the Grassridge WEF, the PPP mining activities, and powerlines adjacent to the site as well as from grazing of livestock on neighbouring farms. However, the footprint of the proposed Ancillary Infrastructure is relatively small compared to the adjacent project infrastructure and the approved Umoyilanga (Dassiesridge) WEF. The additional (cumulative) loss of vegetation as a consequence of the construction of the Umoyilanga Ancillary Infrastructure is therefore classified as low negative.

No-Go Alternative: If the proposed Umoyilanga Ancillary Infrastructure is not approved, the current land use impacts such as grazing and the infestation of alien species will continue. The No-go Alternative is therefore classified as low negative.

Mitigation Measures:

→ Refer to mitigation measures listed under the impact for Grassridge Bontveld.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Moderate	Definite	MODERATE NEGATIVE (-)	Reversible	Resource will be partly lost	Achievable	MODERATE NEGATIVE (-)
Cumulative	Cumulative	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	It is difficult to implement mitigation measures specific to the cumulative impacts as the Applicant only has jurisdiction over their developments and not over other developments or farming activities in the area. However, it is imperative that the Applicant implement the mitigation measures listed above for the direct impacts.			N/A
No-Go Alternative	Existing	Short-Term	Localised	Moderate	Probable	LOW NEGATIVE (-)	N/A	N/A	N/A	N/A

SPECIALIST IMPACT 4: LOSS OF PLANT SPECIES OF CONSERVATION CONCERN

Cause and Comment: *Preferred Alternative:* The permanent loss of plant species of conservation such as *Rhombophyllum rhomboideum* (EN), *Euryops ericifolius* (EN), amongst others, may occur. Some of these are restricted range species with small Areas of Extent. The severity of the impact will be of high significance if a population of one or more of these species is affected. However, if populations of these species are avoided by the careful placement of infrastructure or translocated, where the avoidance of these individuals is not possible, the impact can be reduced to moderate significance.

Cumulative Impact: SCC have likely already been lost as a result of the existing developments in the area. As such, the loss of SCC associated with the proposed Umoyilanga Ancillary Infrastructure will likely contribute to the cumulative loss of SCC within the region. However, if the mitigation measures as described in this report are implemented and adhered to, this impact can be reduced to moderate negative.

No-Go Alternative: The No-go alternative will not require the clearance of vegetation and will therefore not result in the loss of plant SCC.

Mitigation Measures:

→ A botanical micro-siting of the development footprints, by an experienced botanist with knowledge of the SCC that have been identified as possibly occurring within the site, must be undertaken. If populations of endangered SCC are found, infrastructure should be shifted to avoid these. Where this is not possible, SCC must be translocated to the nearest available habitat on the same property.

→ If the translocation of SCC is required, a permit must be obtained from the relevant issuing authority.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
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Preferred Alternative	Direct	Permanent	Study Area	Severe	Definite	HIGH NEGATIVE (-)	Reversible	Resource will be partly lost	Achievable	MODERATE NEGATIVE (-)
Cumulative	Cumulative	Long-Term	Study Area	Severe	May Occur	HIGH NEGATIVE (-)	Reversible	Resource will be partly lost	Achievable	MODERATE NEGATIVE (-)
No-Go Alternative	Not Applicable									

SPECIALIST IMPACT 5: LOSS OF FAUNAL SPECIES OF CONSERVATION CONCERN

Cause and Comment: Preferred Alternative: The disturbance due to construction and the removal of potential habitat could have a severe negative impact on SCC if they inhabit the area. Species-specific mitigations have therefore been proposed.

- Sensitive Species 18 (EN) and White-tailed Rat (*Mystromys albicaudatus*) (VU) is very likely to occur on site on the crests and ridges in the Bontveld vegetation (calcareous deposits).
- Sensitive Species 5 (VU) and Southern Tree Hyrax (*Dendrohyrax arboreus*) (VU) may utilise the bush clumps.
- Black Footed Cat (*Felis nigripes*) may occur onsite.
- Other mammal SCC will move away from the areas during construction.

Cumulative Impact: The addition of the proposed Umoyilanga Ancillary Infrastructure will exacerbate the impact on faunal SCC caused by existing developments and activities (including the Grassridge WEF, farming, mining, amongst others).

No-Go Alternative: Under the no-go alternative there will be no clearance of habitat within the project corridor therefore there will be no loss of faunal SCC. The no-go alternative is therefore negligible.

Mitigation Measures:

- 300 – 500 m buffers must be applied to rocky outcrops (Sensitive Species 18) (SANBI, 2020).
- Avoid placing infrastructure in bush clumps (Species 5, *Dendrohyrax arboreus*).
- Micro-siting to be done immediately prior to construction and must include the identification of rocky outcrops and animal dens.
- Faunal Search and Rescue to be undertaken prior to vegetation clearance.
- Avoid any dens (potentially used by *Felis nigripes*) – suggest a minimum of 300 m buffer around dens and must be demarcated and declared a No-Go area. Note culverts may be used as dens.
- ECO should be trained in Snake removal techniques
- ECO should walk ahead of clearing construction machinery and move slow moving species e.g. tortoises and cryptic species out of harm's way and into suitable neighbouring habitat.
- Any faunal species that may die as a result of construction must be recorded (photographed, GPS coordinates) and if somewhat intact, preserved and donated to SANBI.
- Any faunal species observed onsite must be recorded (photographed, GPS coordinates) and loaded onto iNaturalist.
- Staff and Contractors are not permitted to capture, collect, or eat any faunal species onsite.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Severe	Definite	HIGH NEGATIVE (-)	Reversible	Resource will be partly lost	Achievable	MODERATE NEGATIVE (-)

Cumulative	Cumulative	Long-Term	Study Area	Severe	May Occur	HIGH NEGATIVE (-)	Reversible	Resource will be partly lost	Achievable	MODERATE NEGATIVE (-)
No-Go Alternative	Not Applicable									

SPECIALIST IMPACT 6: DISRUPTION OF ECOSYSTEM FUNCTION AND PROCESS

Cause and Comment: Preferred Alternative: Fragmentation is one of the most important impacts on vegetation as it creates breaks in previously continuous vegetation, causing a reduction in the gene pool and a decrease in species richness and diversity. It also impacts on fauna as it separates habitats and necessitates fauna having to move across exposed areas like roads to get to another section of their habitat or territory. This impact occurs when more and more areas are cleared, resulting in the isolation of functional ecosystems, which results in reduced biodiversity and reduced movement due to the absence of ecological corridors.

Cumulative Impact: Disruption of ecosystem function and process due to habitat fragmentation has already occurred within the broader area due to roads, mining, the construction of the Grassridge WEF, game farming, amongst other land uses. Due to the small footprint of the proposed Umoyilanga Ancillary Infrastructure and the extent of remaining intact habitat surrounding the development footprint the cumulative impact associated with the additive effect of the Ancillary infrastructure is therefore classified as low.

No-Go Alternative: Under the no go alternative, habitat fragmentation has already occurred.

Mitigation Measures:

- Rehabilitate laydown areas.
- Where possible, use existing access roads and servitudes and upgrade these where necessary.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Moderate	Definite	MODERATE NEGATIVE (-)	Reversible	Resource will be partly lost	Achievable	MODERATE NEGATIVE (-)
Cumulative	Cumulative	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	It is difficult to implement mitigation measures specific to the cumulative impacts as the Applicant only has jurisdiction over their developments and not over other developments or farming activities in the area. However, it is imperative that the Applicant implement the mitigation measures listed above for the direct impacts.			N/A
No-Go Alternative	Existing	Short-Term	Localised	Moderate	Probable	LOW NEGATIVE (-)	Reversible	Resource will be partly lost	Achievable	N/A

SPECIALIST IMPACT 7: ESTABLISHMENT OF ALIEN PLANT SPECIES

Cause and Comment: Preferred Alternative: The removal of existing natural vegetation creates 'open' habitats which favours the establishment of undesirable vegetation in areas that are typically very difficult to eradicate and could pose a threat to surrounding ecosystems. Coupled with the low regeneration rate of thicket and bush clumps, alien invasive species such as *Opuntia ficus-indica*, *Opuntia aurantiaca*, and *Acacia mearnsii* can become quickly established.

Cumulative Impact: Scattered alien invasive species have already established in the surrounding area. Therefore, should the proposed Umoyilanga Ancillary Infrastructure lead to the further establishment of alien invasive species in the project area, the invasion by alien species could be exacerbated. Considering the footprint of the proposed Umoyilanga Ancillary Infrastructure, the cumulative impact associated therewith has been classified as low.

No-Go Alternative: There is already evidence of *Opuntia ficus-indica* and *Opuntia aurantiaca* within the site. Under the no-go alternative, these species are likely to continue multiplying if left unchecked. The current no-go alternative is thus rated as low negative.

Mitigation Measures:

- The site must be checked regularly for the presence of alien invasive species.
- The Alien Invasive Management Plan compiled for the Umoyilanga (Dassiesridge) WEF must be implemented and adhered to.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Moderate	Definite	MODERATE NEGATIVE (-)	Reversible	Resource will be partly lost	Achievable	MODERATE NEGATIVE (-)
Cumulative	Cumulative	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	It is difficult to implement mitigation measures specific to the cumulative impacts as the Applicant only has jurisdiction over their developments and not over other developments or farming activities in the area. However, it is imperative that the Applicant implement the mitigation measures listed above for the direct impacts.			N/A
No-Go Alternative	Existing	Short-Term	Localised	Moderate	Probable	LOW NEGATIVE (-)	N/A	N/A	N/A	N/A

SPECIALIST IMPACT 8: DISTURBANCE TO FAUNAL SPECIES AND POTENTIAL REDUCTION IN ABUNDANCE AND MORTALITY OF FAUNAL SPECIES

Cause and Comment: Preferred Alternative: The construction of the proposed Ancillary Infrastructure will cause the majority of highly mobile faunal species to move away from the site of construction. Those that remain in the project footprint could come into contact with staff and vehicles/machinery. If night lights are used these may attract species such as bats and waste may attract scavengers.

Cumulative Impact: Existing developments within the project area, such as mining, the construction of the Grassridge WEF, farming, amongst others, have already caused a disturbance to fauna within the project area. As such, the construction of the Ancillary infrastructure will contribute to the disturbance to faunal species within the project area. However, given the small development footprint of the Ancillary infrastructure and the extent of surrounding intact vegetation, the cumulative impact associated with the additive effect of the Ancillary infrastructure is therefore low.

No-Go Alternative: Under the no go alternative, faunal species will continue to use the area as before and the impact is therefore negligible.

Mitigation Measures:

- A faunal Search and Rescue must be undertaken prior to vegetation clearance.
- An ECO must be appointed to walk ahead of clearing construction machinery and move slow moving species (e.g. tortoises) out of harm's way and into suitable neighbouring habitat.
- Any faunal species that may die as a result of construction must be recorded (photographed, GPS coordinates) and if somewhat intact, preserved and donated to SANBI.
- Any faunal species observed onsite must be recorded (photographed, GPS coordinates) and loaded onto iNaturalist.
- Staff and Contractors are not permitted to capture, collect, or eat any faunal species onsite.
- Waste must be stored in a designated area and sealed so scavengers cannot get to it.
- Preferably no night lighting should be used, but if used these must be down lighting and low wattage.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Moderate	Definite	HIGH NEGATIVE (-)	Reversible	Resource will be partly lost	Achievable	MODERATE NEGATIVE (-)
Cumulative	Cumulative	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	It is difficult to implement mitigation measures specific to the cumulative impacts as the Applicant only has jurisdiction over their developments and not over other developments or farming activities in the area. However, it is imperative that the Applicant implement the mitigation measures listed above for the direct impacts.			N/A
No-Go Alternative	Not Applicable									

SPECIALIST IMPACT 9: REDUCED FAUNAL HABITAT WITHIN THE FOOTPRINT OF THE ANCILLARY INFRASTRUCTURE – GRASSRIDGE BONTVELD

Cause and Comment: *Preferred Alternative:* The project will result in the permanent habitat loss of 3.5 ha of Grassridge Bontveld, known habitats of Sensitive Species 18 and *Mystromys albicaudatus*.

Cumulative Impact: Portions of faunal habitat have already been lost due to activities associated with other WEF and powerline infrastructure adjacent to the site as well as from grazing of livestock on neighbouring farms. The additive affect associated with the proposed Ancillary Infrastructure will therefore be a low cumulative impact.

No-Go Alternative: Under the no-go alternative, habitat fragmentation is occurring at a very slow rate due to overgrazing and the infestation of alien species. Under the no-go alternative the impact is low negative.

Mitigation Measures:

- A faunal Search and Rescue must be undertaken prior to vegetation clearance.
- Where feasible, the development footprint must avoid rocky outcrops and bush clumps.
- An ECO must be appointed to walk ahead of clearing construction machinery and move slow moving species (e.g. tortoises) out of harm's way and into suitable neighbouring habitat.
- Any faunal species that may die as a result of construction must be recorded (photographed, GPS Coordinates) and if somewhat intact, preserved and donated to SANBI.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Moderate	Definite	HIGH NEGATIVE (-)	Reversible	Resource will be partly lost	Achievable	MODERATE NEGATIVE (-)
Cumulative	Cumulative	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	It is difficult to implement mitigation measures specific to the cumulative impacts as the Applicant only has jurisdiction over their developments and not over other developments or farming activities in the area. However, it is imperative that the Applicant implement the mitigation measures listed above for the direct impacts.			N/A
No-Go Alternative	Existing	Short-Term	Localised	Moderate	Probable	LOW NEGATIVE (-)	N/A	N/A	N/A	N/A

SPECIALIST IMPACT 10: REDUCED FAUNAL HABITAT WITHIN THE FOOTPRINT OF THE ANCILLARY INFRASTRUCTURE – SUNDAYS VALLEY THICKET

Cause and Comment: *Preferred Alternative:* The project will result in the permanent habitat loss 2.1 ha of Sundays Valley Thicket.

Cumulative Impact: Portions of faunal habitat have already been lost due to activities associated with other WEF and powerline infrastructure adjacent to the site as well as from grazing of livestock on neighbouring farms. The additive affect associated with the proposed Ancillary infrastructure will therefore be a low cumulative impact.

No-Go Alternative: Under the no go alternative, habitat fragmentation is occurring at a very slow rate due to overgrazing and the infestation of alien species. Under the no-go alternative the impact is low negative.

Mitigation Measures:

- A faunal Search and Rescue must be undertaken prior to vegetation clearance.
- Where feasible, the development footprint must avoid rocky outcrops and bush clumps.
- An ECO must be appointed to walk ahead of clearing construction machinery and move slow moving species (e.g. tortoises) out of harm's way and into suitable neighbouring habitat.
- Any faunal species that may die as a result of construction must be recorded (photographed, GPS Coordinates) and if somewhat intact, preserved and donated to SANBI.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Moderate	Definite	MODERATE NEGATIVE (-)	Reversible	Resource will be partly lost	Achievable	MODERATE NEGATIVE (-)
Cumulative	Cumulative	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	It is difficult to implement mitigation measures specific to the cumulative impacts as the Applicant only has jurisdiction over their developments and not over other developments or farming activities in the area. However, it is imperative that the Applicant implement the mitigation measures listed above for the direct impacts.			N/A
No-Go Alternative	Existing	Short-Term	Localised	Moderate	Probable	LOW NEGATIVE (-)	N/A	N/A	N/A	N/A

SPECIALIST IMPACT 11: IMPACT ON ARCHAEOLOGICAL AND CULTURAL HERITAGE RESOURCES

Cause and Comment: *Preferred Alternative:* The construction of the proposed Umoyilanga Ancillary Infrastructure could result in the damage to- or destruction of heritage sites. No specific action in terms of mitigation is required for the Umoyilanga Ancillary Infrastructure Development Project. However, the following general procedure is required for the site.

No-Go Alternative: The no-go alternative is unlikely to result in impacts on archaeological and cultural heritage resources.

Mitigation Measures:

- Site Monitoring: Regular examination of trenches and excavations, and particularly stone features identified in the project area.
- Should any unmarked human burials/remains be found during the course of construction, work in the immediate vicinity should cease and the find must immediately be reported to the archaeologist, or the South African Heritage Resources Agency (SAHRA). Under no circumstances may burials be disturbed or removed until such time as necessary statutory procedures required for grave relocation have been met.
- As Palaeontological remains occur where bedrock has been exposed, all geological features should be regarded as sensitive.
- Water sources such as drainage lines, fountains and pans would often have attracted human activity in the past. As Stone Age material occur in the larger landscape, such resources should be regarded as potentially sensitive in terms of possible subsurface deposits.

Significance Assessment:										
Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Moderate	May Occur	MODERATE NEGATIVE (-)	Irreversible	Resource will be lost	Achievable	LOW NEGATIVE (-)
No-Go Alternative	<i>Not Applicable.</i>									

OPERATIONAL PHASE

SPECIALIST IMPACT 12: INFESTATION OF ALIEN PLANT SPECIES

Cause and Comment: *Preferred Alternative:* If laydown areas are not rehabilitated, these disturbed areas can become places for alien invasive species to become established and if left unmitigated these species can spread and establish themselves in intact vegetation resulting in the displacement of indigenous species and possible local extinctions of SCC.

Cumulative Impact: Scattered alien invasive species have already established in the surrounding area. Therefore, should the proposed Umoyilanga Ancillary Infrastructure lead to the further establishment of alien invasive species in the project area, the invasion by alien species could be exacerbated. Considering the footprint of the proposed Umoyilanga Ancillary Infrastructure, the cumulative impact associated therewith has been classified as low.

No-Go Alternative: There is already evidence of *Opuntia ficus-indica* and *Opuntia aurantiaca* within the site. Under the no-go alternative these species are likely to continue multiplying if left unchecked. The current no-go alternative is thus low.

Mitigation Measures:

- The site must be checked regularly for the presence of alien invasive species. When alien invasive species are found, immediate action must be taken to remove them.
- An Alien Invasive Management Plan must be incorporated into the EMPr.
- The ECO must create a list with accompanying photographs of possible alien invasive species that could occur on site prior to construction. This photo guide must be used to determine if any alien invasive species are present.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Severe	Definite	HIGH NEGATIVE (-)	Reversible	Resource will be partly lost	Easily Achievable	LOW NEGATIVE (-)
Cumulative	Cumulative	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	It is difficult to implement mitigation measures specific to the cumulative impacts as the Applicant only has jurisdiction over their developments and not over other developments or farming activities in the area. However, it is imperative that the Applicant implement the mitigation measures listed above for the direct impacts.			N/A
No-Go Alternative	Existing	Short-Term	Localised	Moderate	Probable	LOW NEGATIVE (-)	N/A	N/A	N/A	N/A

SPECIALIST IMPACT 13: IMPACT ON ARCHAEOLOGICAL AND CULTURAL HERITAGE RESOURCES

Cause and Comment: *Preferred Alternative:* The operation of the Umoyilanga Ancillary Infrastructure could result in the damage to- or destruction of heritage sites. No specific action in terms of mitigation is required for the Umoyilanga Ancillary Infrastructure Development Project. However, the following general procedure is required for the site.

No-Go Alternative: The no-go alternative is unlikely to result in impacts on archaeological and cultural heritage resources.

Mitigation Measures:

- Site Monitoring: Regular examination of trenches and excavations, and particularly stone features identified in the project area.
- Should any unmarked human burials/remains be found during the course of the operational phase, work in the immediate vicinity should cease and the find must immediately be reported to the archaeologist, or the South African Heritage Resources Agency (SAHRA). Under no circumstances may burials be disturbed or removed until such time as necessary statutory procedures required for grave relocation have been met.
- Water sources such as drainage lines, fountains and pans would often have attracted human activity in the past. As Stone Age material occur in the larger landscape, such resources should be regarded as potentially sensitive in terms of possible subsurface deposits.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Moderate	May Occur	MODERATE NEGATIVE (-)	Irreversible	Resource will be lost	Achievable	LOW NEGATIVE (-)
No-Go Alternative	<i>Not Applicable.</i>									

DECOMMISSIONING PHASE

Although the Buffer Yard will be temporary and decommissioned after the construction phase of the authorised Umoyilanga (Dassiesridge) WEF, it is unlikely that the remainder of the proposed Umoyilanga Ancillary Infrastructure will be decommissioned in the near future. Should the infrastructure be decommissioned, the impacts associated with the decommissioning phase could be similar to those for the construction phase and most of the mitigation measures stipulated for the construction phase will, therefore, be relevant. The decommissioning phase EMP must include additional decommissioning phase recommendations and mitigation measures relating to the ecological environment based on case studies of the decommissioning of the relevant infrastructure components and it must consider the relevant legislation, policies, and guidelines at the time of decommissioning.

SPECIALIST IMPACT 14: INFESTATION OF ALIEN PLANT SPECIES

Cause and Comment: *Preferred Alternative:* Disruption of habitats often results in the infestation of alien species unless these are controlled. Should this happen the impact will be of moderate significance as the alien species could result in the displacement of indigenous species and possible local extinctions of SCC.

Cumulative Impact: Scattered alien invasive species have already established in the surrounding area. Therefore, should the decommissioning of the proposed Umoyilanga Ancillary Infrastructure lead to the further establishment of alien invasive species in the project area, the invasion of alien species could be exacerbated. Considering the footprint of the proposed Umoyilanga Ancillary Infrastructure, the cumulative impact associated therewith has been classified as low.

No-Go Alternative: There is already evidence of *Opuntia ficus-indica* and *Opuntia aurantiaca* within the site. Under the no-go alternative these species are likely to continue multiplying if left unchecked. The current no-go alternative is thus low.

Mitigation Measures:

- The site must be checked regularly for the presence of alien invasive species. When alien invasive species are found, immediate action must be taken to remove them.
- An Alien Invasive Management Plan must be incorporated into the EMPr.
- The ECO must create a list with accompanying photographs of possible alien invasive species that could occur on site prior to construction. This photo guide must be used to determine if any alien invasive species are present.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Severe	Definite	MODERATE NEGATIVE (-)	Reversible	Resource will be partly lost	Easily Achievable	LOW NEGATIVE (-)
Cumulative	Cumulative	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	It is difficult to implement mitigation measures specific to the cumulative impacts as the Applicant only has jurisdiction over their developments and not over other developments or farming activities in the area. However, it is imperative that the Applicant implement the mitigation measures listed above for the direct impacts.			N/A
No-Go Alternative	Existing	Short-Term	Localised	Moderate	Probable	LOW NEGATIVE (-)	N/A	N/A	N/A	N/A

SPECIALIST IMPACT 15: LOSS OF INDIGENOUS VEGETATION

Cause and Comment: *Preferred Alternative:* the decommissioning of the proposed Umoyilanga Ancillary Infrastructure will require laydown areas and will disrupt vegetation that has re-established around the areas that were disturbed during the construction phase. The loss of vegetation will be similar to the construction phase impacts.

Cumulative Impact: Portions of indigenous vegetation have already been lost due to the construction of the Grassridge WEF, the PPP mining activities, and powerlines adjacent to the site as well as from grazing of livestock on neighbouring farms. However, the additional (cumulative) loss of vegetation as a consequence of the decommissioning of the Umoyilanga Ancillary Infrastructure is anticipated to be minimal and therefore classified as low negative.

No-Go Alternative: There is already evidence of *Opuntia ficus-indica* and *Opuntia aurantiaca* within the site. Under the no-go alternative these species are likely to continue multiplying if left unchecked. The current no-go alternative is thus low.

Mitigation Measures:

- Construction vehicles and machinery must not encroach into identified 'no-go' areas or areas outside the project footprint.
- Only indigenous species must be used for rehabilitation.
- Laydown areas must not be located within any watercourses or drainage lines.
- Laydown areas used for construction should be used for the decommissioning phase.
- Employees must be prohibited from making open fires during the decommissioning phase.

→ An Alien Invasive Management Plan for the site must be created.

→ An *in-situ* search and rescue plan must be developed and implemented for succulents and geophytes that will be impacted by the decommissioning of the project site.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Severe	Definite	MODERATE NEGATIVE (-)	Reversible	Resource will be partly lost	Easily Achievable	LOW NEGATIVE (-)
Cumulative	Cumulative	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	It is difficult to implement mitigation measures specific to the cumulative impacts as the Applicant only has jurisdiction over their developments and not over other developments or farming activities in the area. However, it is imperative that the Applicant implement the mitigation measures listed above for the direct impacts.			N/A
No-Go Alternative	Existing	Short-Term	Localised	Moderate	Probable	LOW NEGATIVE (-)	N/A	N/A	N/A	N/A

SPECIALIST IMPACT 16: IMPACTS OF DECOMMISSIONING NOISE ON SURROUNDING FAUNAL POPULATIONS

Cause and Comment: *Preferred Alternative:* Faunal species will be disturbed during decommissioning due to noise and vibrations of heavy plant and machinery. Faunal Species that vacate the immediate area may return following completion of the decommissioning phase or new individuals or species may inhabit the area. Heavy plant or machinery may cause unintentional mortalities of faunal species.

Cumulative Impact: The adjacent WEF and powerlines have already caused an increase in ambient noise in the area. The additional noise generated from the decommissioning of the Ancillary Infrastructure will be a short-term impact and will be of moderate significance.

No-Go Alternative: Under the no-go alternative, some faunal populations at the study site will still be impacted by noise from activities associated with the adjacent wind energy facilities and powerlines.

Mitigation Measures:

- Vehicles and machinery must meet best practice standards.
- Staff and Contractors' vehicles must comply with speed limits of 30 km/hr.
- The project must start and be completed within the minimum timeframe. i.e. may not be started and left incomplete.

Significance Assessment:

Impact	Nature	Duration	Extent	Severity	Likelihood	Significance Before Mitigation	Reversibility	Irreplaceable Loss	Mitigation Potential	Significance After Mitigation
Preferred Alternative	Direct	Permanent	Study Area	Severe	Definite	MODERATE NEGATIVE (-)	Reversible	Resource will be partly lost	Easily Achievable	LOW NEGATIVE (-)
Cumulative	Cumulative	Long-Term	Study Area	Slight	May Occur	LOW NEGATIVE (-)	It is difficult to implement mitigation measures specific to the cumulative impacts as the Applicant only has jurisdiction over their developments and not over other developments or farming activities in the area. However, it is imperative that the Applicant implement the mitigation measures listed above for the direct impacts.			N/A

No-Go Alternative	Existing	Short-Term	Localised	Moderate	Probable	LOW NEGATIVE (-)	N/A	N/A	N/A	N/A
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9. RECOMMENDATIONS & CONCLUSIONS

9.1 RECOMMENDATIONS

It is recommended that the following general and specialist mitigation measures are included in the EMPr for each of the phases of the Umoyilanga Ancillary Infrastructure.

9.1.1 General Impact Recommendations and Mitigation

GENERAL IMPACTS - PLANNING & DESIGN PHASE MITIGATION FOR EMPr

- Activities, which trigger listed activities in terms of the National Environmental Management Act (NEMA) (Act No. 107 of 1998, as amended) Environmental Impact Assessment (EIA) Regulations (2014 and subsequent 2017 amendments), must not commence prior to receipt of an Environmental Authorisation (EA) from the national Department of Environment, Forestry and Fisheries (DEFF).
- Any required water uses, in terms of Section 21 of the NWA, must not commence prior to receipt of the necessary water use authorisation(s) from the Department of Water and Sanitation (DWS).
- All additional permitting and authorisation requirements, including plant removal permits, must be obtained prior to the commencement of any vegetation clearance and/or construction activities.
- A suitably qualified Environmental Control Officer (ECO) must be appointed prior to the commencement of the construction phase to monitor the Applicant's compliance with the conditions of the EMPr, as well as all the relevant permits and authorisations.
- All phases of the Umoyilanga Ancillary Infrastructure development must comply with the relevant municipal by-laws and should consider the available best practice guidelines.

GENERAL IMPACTS - CONSTRUCTION PHASE MITIGATION FOR EMPr

- Exhaust emissions from construction vehicles must be minimised by ensuring that all vehicles are properly equipped and serviced.
- Vegetation clearance must be limited to the approved and demarcated development footprints.
- If fine building materials, such as sand, are to be transported on the back of trucks, they must be adequately covered.
- A "complaints register", consisting of all public complaints and actions in response to these complaints, must be maintained during the construction phase.
- A speed limit of 30km/h must not be exceeded on gravel roads.
- All construction vehicles must be in sound working order and meet the necessary noise level requirements.
- All relevant municipal by-laws, with regards to noise control, must apply.
- A Stormwater Management Plan must be compiled and implemented throughout the construction phase.
- Where possible, vegetation must be retained to avoid soil erosion.
- Construction activities should be demarcated, and vegetation clearing, and topsoil removal limited to these areas.
- Stockpiled materials, including cleared vegetation, must not be stored within 100 m of watercourses and should not exceed 2 m in height.
- Stockpiles should be covered during windy periods.
- All stationary machinery must be equipped with a drip tray to retain any oil leaks.

- Any chemicals to be used during the construction phase must be stored safely on bunded surfaces in the site camp.
- Cement mixing must take place on a contained and impermeable surface, should it be undertaken on site.
- Emergency plans, and spill kits, must be in place in case of accidental spillages on site.
- If required, chemical toilets must be maintained and serviced regularly to reduce the risk of surface- and groundwater contamination.
- Any hazardous substances and waste must be stored in impermeable bunded areas or in secondary containers with 110% of the volume of the contents within it.
- Open fires must not be permitted on site during the construction phase.
- Waste must not be burned onsite.
- Smoking must be restricted to designated smoking areas, which have easy access to fire-fighting equipment.
- The Contractor, or the appointed fire marshal, should take all reasonable steps to prevent the accidental occurrence and the spreading of fires.
- The Contractor and/or the appointed fire marshal must ensure that there is always fire-fighting equipment available on site during the construction phase.
- The Contractor and/or the appointed fire marshal must ensure that all site personnel are aware of the risk of fires, the procedure to be followed in the event of a fire and that all site personnel have access to the relevant contact details of the nearest Fire and Emergency Services.
- Where suitable, preference should be given to the employment of individuals residing in the communities which are located close to the site.
- A Community Liaison Officer (CLO) should be appointed for the duration of the construction phase. This individual should have knowledge of the local communities and assist with the employment processes. The CLO should be available and accessible to the general public, the developer and all individuals employed by the developer during the construction phase.
- All general waste, which is temporarily stored, on site must be done so in windproof/sealable containers before being disposed of at a registered landfill site.
- Construction workers must be informed that littering is prohibited within the construction site and surrounding areas.
- A Waste Management Plan and any required Method Statements should be compiled and implemented during the construction phase.
- Soil disturbance and vegetation clearance should be limited to the approved and demarcated development footprints.
- Temporary disturbed areas must be rehabilitated as soon as practically possible.

GENERAL IMPACTS - OPERATIONAL PHASE MITIGATION FOR EMPr

- The Stormwater Management Plan, compiled and implemented during the construction phase, must include operational phase management measures for implementation throughout the operational phase.
- Stockpiled materials must not be stored within 100 m of watercourses and should not exceed 2 m in height.
- The ECO should monitor the site regularly for signs of erosion. Remedial action must be taken at the first signs of erosion.
- All stationary machinery, which is used for maintenance purposes, must be equipped with a drip tray to retain any oil leaks.
- Emergency plans must be in place and spill kits must readily available in case of accidental spillages on site.

- Any chemicals which are stored on site must be stored safely on bunded surfaces in the site camp and any hazardous substances and waste must be stored in impermeable bunded areas or in secondary containers with 110% of the volume of the contents within it.
- The Umoyilanga Ancillary Infrastructure, especially the BESS, must be maintained frequently to reduce the risk of annual degradation of the facility.
- Batteries should be encased in protective covers and/or insulated.
- Waste must not be burned onsite.
- The maintenance personnel, or the appointed fire marshal, must take all responsible steps to prevent the accidental occurrence and the spreading of fires.
- The maintenance personnel and/or the appointed fire marshal must ensure that there is always fire-fighting equipment available on site during the operational phase.
- The maintenance personnel must be aware of the risk of fires, the procedure to be followed in the event of a fire and they must have access to the relevant contact details of the nearest Fire and Emergency Services.
- Where suitable, preference should be given to the employment of individuals residing in the communities which are located close to the site.
- All general waste, which is temporarily stored, on site must be done so in windproof/sealable containers before being disposed of at a registered landfill site.
- Waste must not be burned on site.
- Maintenance staff must be informed that littering is prohibited within the construction site and surrounding areas.
- All general waste, which is temporarily stored, on site must be done so in windproof/sealable containers before being disposed of at a registered landfill site.
- The rehabilitation of disturbed areas must be monitored to ensure successful rehabilitation and the resultant decrease in the visual impact.
- Maintenance staff must be informed that littering is prohibited within the construction site and surrounding areas.
- The Ancillary Infrastructure must be maintained to reduce the risk of degradation of the infrastructure.

GENERAL IMPACTS - DECOMMISSIONING PHASE RECOMMENDATIONS FOR EMPr

As per the temporal scales (“long-term”) indicated in the significance statement for the operational phase in the section above, the Umoyilanga Ancillary Infrastructure, excluding the temporary Buffer Yard, is likely to be used over an extensive period of time, and decommissioning is not foreseen in the near future. Should the infrastructure be decommissioned in the long-term, the impacts associated with the decommissioning phase could be similar to those for the construction phase and most of the mitigation measures stipulated for the construction phase will, therefore, be relevant. If necessary, the EMPr should be updated to include relevant decommissioning mitigation measures and recommendations prior to the commencement of the decommissioning phase. **The following decommissioning phase impacts and mitigation measures are applicable to the decommissioning of the temporary Buffer Yard.**

- Exhaust emissions from vehicles, used during the decommissioning phase, must be minimised by ensuring that all vehicles are properly equipped and serviced.
- A “complaints register”, consisting of all public complaints and actions in response to these complaints, must be maintained during the decommissioning phase.
- Exposed surfaces should be revegetated as soon as practically possible.
- A speed limit of 30km/h must not be exceeded on gravel roads.
- All vehicles and machinery must be in sound working order and meet the necessary noise level requirements.
- All relevant municipal by-laws, with regards to noise control, must apply.

- A “complaints register”, consisting of all public complaints and actions in response to these complaints, must be maintained during the decommissioning phase.
- The Stormwater Management Plan, compiled and implemented during the construction phase, must include recommendations for the decommissioning phase.
- The site must be re-vegetated as soon as practically possible.
- Stockpiled materials must not be stored within 100 m of watercourses and should not exceed 2 m in height.
- Stockpiles should be covered during windy periods.
- All stationary machinery must be equipped with a drip tray to retain any oil leaks.
- Any chemicals to be used during the decommissioning phase must be stored safely on bunded surfaces in the site camp.
- Emergency plans, and spill kits, must be in place in case of accidental spillages on site.
- Any hazardous substances and waste must be stored in impermeable bunded areas or in secondary containers with 110% of the volume of the contents within it.
- Open fires must not be permitted on site during the decommissioning phase.
- Waste must not be burned onsite.
- Smoking must be restricted to designated smoking areas, which have easy access to fire-fighting equipment.
- The Contractor, or the appointed fire marshal, should take all reasonable steps to prevent the accidental occurrence and the spreading of fires.
- The Contractor and/or the appointed fire marshal must ensure that there is always fire-fighting equipment available on site during the decommissioning phase.
- The Contractor and/or the appointed fire marshal must ensure that all site personnel are aware of the risk of fires, the procedure to be followed in the event of a fire and that all site personnel have access to the relevant contact details of the nearest Fire and Emergency Services.
- Where suitable, preference should be given to the employment of individuals residing in the communities which are located close to the site.
- All general waste, which is temporarily stored, on site must be done so in windproof/sealable containers before being disposed of at a registered landfill site.
- Waste must not be burned on site.
- Workers must be informed that littering is prohibited within the site and surrounding areas.
- The Waste Management Plan and any required Method Statements should be implemented during the decommissioning phase.
- The site must be rehabilitated as soon as practically possible.

9.1.2 Specialist Impact Recommendations and Mitigation

SPECIALISTS’ IMPACTS - CONSTRUCTION PHASE MITIGATION FOR EMPR

- An Erosion Management Plan / Method Statement should be compiled and implemented during the Construction Phase.
- Vegetation clearance must be kept to a minimum and retained where possible to avoid soil erosion.
- Lay down areas must not be located within any watercourses or drainage lines.
- Disturbed areas must be rehabilitated as soon as possible after construction.
- The site should be monitored regularly for signs of erosion. Remedial action must be taken at the first signs of erosion.
- Construction vehicles and machinery must not encroach on identified ‘no-go’ areas or areas outside of the development footprint.

- Topsoil (20 cm, where possible) must be collected and stored in an area of low sensitivity and used to rehabilitate impacted areas that are no longer required during the operational phase (e.g. laydown areas).
- The exclusion zone in the centre of the Buffer Yard has been created to protect sensitive species. This area must be demarcated as a no-go area and the ECO must ensure that no activities encroach into this space. It is recommended that a 10m buffer be placed around the exclusion zone.
- Only indigenous species must be used for rehabilitation.
- Employees must be prohibited from making open fires during the construction phase.
- The Alien Invasive Management Plan compiled for the Umoyilanga (Dassiesridge) WEF must be implemented.
- An *in-situ* search and rescue plan must be developed and implemented for succulents and geophytes that will be impacted by the construction of the project site.
- A botanical micro-siting of the development footprints, by an experienced botanist with knowledge of the SCC that have been identified as possibly occurring within the site, must be undertaken. If populations of endangered SCC are found, infrastructure should be shifted to avoid these. Where this is not possible, SCC must be translocated to the nearest available habitat on the same property.
- If the translocation of SCC is required, a permit must be obtained from the relevant issuing authority.
- 300 – 500 m buffers must be applied to rocky outcrops (Sensitive Species 18) (SANBI, 2020).
- Avoid placing infrastructure in bush clumps (Species 5, *Dendrohyrax arboreus*).
- Micro-siting to be done immediately prior to construction and must include the identification of rocky outcrops and animal dens.
- Faunal Search and Rescue to be undertaken prior to vegetation clearance.
- Avoid any dens (potentially used by *Felis nigripes*) – suggest a minimum of 300 m buffer around dens and must be demarcated and declared a No-Go area. Note culverts may be used as dens.
- ECO should be trained in Snake removal techniques
- ECO should walk ahead of clearing construction machinery and move slow moving species e.g. tortoises and cryptic species out of harm's way and into suitable neighbouring habitat.
- Any faunal species observed onsite must be recorded (photographed, GPS coordinates) and loaded onto iNaturalist.
- Staff and Contractors are not permitted to capture, collect, or eat any faunal species onsite.
- Rehabilitate laydown areas.
- Where possible, use existing access roads and servitudes and upgrade these where necessary.
- The site must be checked regularly for the presence of alien invasive species.
- The Alien Invasive Management Plan compiled for the Umoyilanga (Dassiesridge) WEF must be implemented and adhered to.
- A faunal Search and Rescue must be undertaken prior to vegetation clearance.
- An ECO must be appointed to walk ahead of clearing construction machinery and move slow moving species (e.g. tortoises) out of harm's way and into suitable neighbouring habitat.
- Staff and Contractors are not permitted to capture, collect, or eat any faunal species onsite.
- Waste must be stored in a designated area and sealed so scavengers cannot get to it.
- Preferably no night lighting should be used, but if used these must be down lighting and low wattage.
- A faunal Search and Rescue must be undertaken prior to vegetation clearance.
- Where feasible, the development footprint must avoid rocky outcrops and bush clumps.
- An ECO must be appointed to walk ahead of clearing construction machinery and move slow moving species (e.g. tortoises) out of harm's way and into suitable neighbouring habitat.
- Any faunal species that may die as a result of construction must be recorded (photographed, GPS Coordinates) and if somewhat intact, preserved and donated to SANBI.
- Site Monitoring: Regular examination of trenches and excavations, and particularly stone features identified in the project area.
- Should any unmarked human burials/remains be found during the course of construction, work in the immediate vicinity should cease and the find must immediately be reported to the archaeologist, or the

South African Heritage Resources Agency (SAHRA). Under no circumstances may burials be disturbed or removed until such time as necessary statutory procedures required for grave relocation have been met.

- As Palaeontological remains occur where bedrock has been exposed, all geological features should be regarded as sensitive.
- Water sources such as drainage lines, fountains and pans would often have attracted human activity in the past. As Stone Age material occur in the larger landscape, such resources should be regarded as potentially sensitive in terms of possible subsurface deposits.

SPECIALISTS’ IMPACTS – OPERATIONAL PHASE MITIGATION FOR EMPr

- The site must be checked regularly for the presence of alien invasive species. When alien invasive species are found, immediate action must be taken to remove them.
- An Alien Invasive Management Plan must be incorporated into the EMPr.
- The ECO must create a list with accompanying photographs of possible alien invasive species that could occur on site prior to construction. This photo guide must be used to determine if any alien invasive species are present.
- Site Monitoring: Regular examination of trenches and excavations, and particularly stone features identified in the project area.
- Should any unmarked human burials/remains be found during the course of the operational phase, work in the immediate vicinity should cease and the find must immediately be reported to the archaeologist, or the South African Heritage Resources Agency (SAHRA). Under no circumstances may burials be disturbed or removed until such time as necessary statutory procedures required for grave relocation have been met.
- Water sources such as drainage lines, fountains and pans would often have attracted human activity in the past. As Stone Age material occur in the larger landscape, such resources should be regarded as potentially sensitive in terms of possible subsurface deposits.

SPECIALISTS’ IMPACTS – DECOMMISSIONING PHASE MITIGATION FOR EMPr

Although the Buffer Yard will be temporary and decommissioned after the construction phase of the authorised Umoyilanga (Dassiesridge) WEF, it is unlikely that the remainder of the proposed Umoyilanga Ancillary Infrastructure will be decommissioned in the near future. Should the infrastructure be decommissioned, the impacts associated with the decommissioning phase could be similar to those for the construction phase and most of the mitigation measures stipulated for the construction phase will, therefore, be relevant. The decommissioning phase EMPr must include additional decommissioning phase recommendations and mitigation measures relating to the ecological environment based on case studies of the decommissioning of the relevant infrastructure components and it must consider the relevant legislation, policies, and guidelines at the time of decommissioning.

- The site must be checked regularly for the presence of alien invasive species. When alien invasive species are found, immediate action must be taken to remove them.
- An Alien Invasive Management Plan must be incorporated into the EMPr.
- The ECO must create a list with accompanying photographs of possible alien invasive species that could occur on site prior to construction. This photo guide must be used to determine if any alien invasive species are present.
- Construction vehicles and machinery must not encroach into identified ‘no-go’ areas or areas outside the project footprint.
- Only indigenous species must be used for rehabilitation.

- Laydown areas must not be located within any watercourses or drainage lines.
- Laydown areas used for construction should be used for the decommissioning phase.
- Employees must be prohibited from making open fires during the decommissioning phase.
- An Alien Invasive Management Plan for the site must be created.
- An in-situ search and rescue plan must be developed and implemented for succulents and geophytes that will be impacted by the decommissioning of the project site.
- Vehicles and machinery must meet best practice standards.
- Staff and Contractors' vehicles must comply with speed limits of 30 km/hr.
- The project must start and be completed within the minimum timeframe. i.e. may not be started and left incomplete.

9.2 CONCLUSIONS

9.2.1 Summary of Identified Impacts

Table 9.1 and Table 9.2 consist of a summary of the potential general (Table 9.1) and specialist (Table 9.2) impacts associated with the proposed Umoyilanga Ancillary Infrastructure.

Table 9.1: Summary of the Potential General Impacts.

IMPACT	BOTH LAYOUT ALTERNATIVES		NO-GO ALTERNATIVE
	PRIOR TO MITIGATION	POST-MITIGATION	
GENERAL IMPACTS			
PLANNING AND DESIGN PHASE			
IMPACT 1: COMPLIANCE WITH RELEVANT LEGISLATION	HIGH NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
CONSTRUCTION PHASE			
IMPACT 2: INCREASE IN AIR EMISSIONS (DUST)	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
IMPACT 3: INCREASE IN NOISE LEVELS	LOW NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
IMPACT 4: SEDIMENTATION AND STORMWATER MANAGEMENT	LOW NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
IMPACT 5: SOIL AND WATER CONTAMINATION DUE TO HAZARDOUS SUBSTANCES	HIGH NEGATIVE (-)	MODERATE NEGATIVE (-)	NOT APPLICABLE
IMPACT 6: FIRE RISK	HIGH NEGATIVE (-)	MODERATE NEGATIVE (-)	MODERATE NEGATIVE (-)
IMPACT 7: SOCIO-ECONOMIC BENEFITS	MODERATE POSITIVE (+)	MODERATE POSITIVE (+)	NOT APPLICABLE
IMPACT 8: LOSS OF POTENTIAL AGRICULTURAL LAND DUE TO DEVELOPMENT	MODERATE NEGATIVE (-)	MODERATE NEGATIVE (-)	MODERATE NEGATIVE (-)
IMPACT 9: WASTE MANAGEMENT	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
IMPACT 10: VISUAL AND AESTHETIC IMPACTS	LOW NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
OPERATIONAL PHASE			
IMPACT 11: SEDIMENTATION AND STORMWATER MANAGEMENT	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
IMPACT 12: SOIL AND WATER CONTAMINATION DUE TO HAZARDOUS SUBSTANCES	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
IMPACT 13: FIRE RISK	HIGH NEGATIVE (-)	MODERATE NEGATIVE (-)	MODERATE NEGATIVE (-)
IMPACT 14: SOCIO-ECONOMIC BENEFITS	MODERATE POSITIVE (+)	MODERATE POSITIVE (+)	NOT APPLICABLE
IMPACT 15: WASTE MANAGEMENT	LOW NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
IMPACT 16: VISUAL AND AESTHETIC IMPACTS	LOW NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
IMPACT 17: SUPPORT OF RENEWABLE ENERGY INFRASTRUCTURE FUNCTIONING	HIGH POSITIVE (+)	HIGH POSITIVE (+)	NOT APPLICABLE
DECOMMISSIONING PHASE			
As per the temporal scales (“long-term”) indicated in the significance statement for the operational phase in the section above, the Umoyilanga Ancillary Infrastructure, <u>excluding the temporary Buffer Yard</u> , is likely to be used over an extensive period of time, and decommissioning is not foreseen in the near future. Should the infrastructure be decommissioned in the long-term, the impacts associated with the decommissioning phase could be similar to those for the construction phase and most of the mitigation measures stipulated for the construction phase will, therefore, be relevant. If necessary, the EMPr should be updated to include relevant decommissioning mitigation measures and recommendations prior to the commencement of the decommissioning phase. The following decommissioning phase impacts and mitigation measures are applicable to the decommissioning of the temporary Buffer Yard.			
IMPACT 18: INCREASE IN AIR EMISSIONS (DUST)	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
IMPACT 19: INCREASE IN NOISE LEVELS	LOW NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
IMPACT 20: SEDIMENTATION AND STORMWATER MANAGEMENT	LOW NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
IMPACT 21: SOIL AND WATER CONTAMINATION DUE TO HAZARDOUS SUBSTANCES	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE

IMPACT 22: FIRE RISK	MODERATE NEGATIVE (-)	MODERATE NEGATIVE (-)	MODERATE NEGATIVE (-)
IMPACT 23: SOCIO-ECONOMIC BENEFITS	LOW POSITIVE (+)	LOW POSITIVE (+)	NOT APPLICABLE
IMPACT 24: WASTE MANAGEMENT	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
IMPACT 25: VISUAL AND AESTHETIC IMPACTS	LOW NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE

Table 9.2: Summary of the Potential Specialist Impacts.

IMPACT SPECIALIST IMPACTS	BOTH LAYOUT ALTERNATIVES		CUMULATIVE IMPACT	NO-GO ALTERNATIVE
	PRIOR TO MITIGATION	POST-MITIGATION		
CONSTRUCTION PHASE				
SPECIALIST IMPACT 1: IMPACTS ON THE TERRESTRIAL HABITAT OF STRATEGIC WATER SOURCE AREAS	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)
SPECIALIST IMPACT 2: LOSS OF GRASSRIDGE BONTVELD	MODERATE NEGATIVE (-)	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)
SPECIALIST IMPACT 3: LOSS OF SUNDAYS THICKET	MODERATE NEGATIVE (-)	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)
SPECIALIST IMPACT 4: LOSS OF PLANT SPECIES OF CONSERVATION CONCERN	HIGH NEGATIVE (-)	MODERATE NEGATIVE (-)	HIGH NEGATIVE (-)	MODERATE NEGATIVE (-)
SPECIALIST IMPACT 5: LOSS OF FAUNAL SPECIES OF CONSERVATION CONCERN	HIGH NEGATIVE (-)	MODERATE NEGATIVE (-)	HIGH NEGATIVE (-)	MODERATE NEGATIVE (-)
SPECIALIST IMPACT 6: DISRUPTION OF ECOSYSTEM FUNCTION AND PROCESS	MODERATE NEGATIVE (-)	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)
SPECIALIST IMPACT 7: ESTABLISHMENT OF ALIEN PLANT SPECIES	MODERATE NEGATIVE (-)	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)
SPECIALIST IMPACT 8: DISTURBANCE TO FAUNAL SPECIES AND POTENTIAL REDUCTION IN ABUNDANCE AND MORTALITY OF FAUNAL SPECIES	HIGH NEGATIVE (-)	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	NOT APPLICABLE
SPECIALIST IMPACT 9: REDUCED FAUNAL HABITAT WITHIN THE FOOTPRINT OF THE ANCILLARY INFRASTRUCTURE – GRASSRIDGE BONTVELD	HIGH NEGATIVE (-)	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)
SPECIALIST IMPACT 10: REDUCED FAUNAL HABITAT WITHIN THE FOOTPRINT OF THE ANCILLARY INFRASTRUCTURE – SUNDAYS VALLEY THICKET	MODERATE NEGATIVE (-)	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)
SPECIALIST IMPACT 11: IMPACT ON ARCHAEOLOGICAL AND CULTURAL HERITAGE RESOURCES	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	NOT RATED	NOT APPLICABLE
OPERATIONAL PHASE				
SPECIALIST IMPACT 12: INFESTATION OF ALIEN PLANT SPECIES	HIGH NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)
SPECIALIST IMPACT 13: IMPACT ON ARCHAEOLOGICAL AND CULTURAL HERITAGE RESOURCES	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	NOT RATED	NOT APPLICABLE
DECOMMISSIONING PHASE				
<p>Although the Buffer Yard will be temporary and decommissioned after the construction phase of the authorised Umoyilanga (Dassiesridge) WEF, it is unlikely that the remainder of the proposed Umoyilanga Ancillary Infrastructure will be decommissioned in the near future. Should the infrastructure be decommissioned, the impacts associated with the decommissioning phase could be similar to those for the construction phase and most of the mitigation measures stipulated for the construction phase will, therefore, be relevant. The decommissioning phase EMP must include additional decommissioning phase recommendations and mitigation measures relating to the ecological environment based on case studies of the decommissioning of the relevant infrastructure components and it must consider the relevant legislation, policies, and guidelines at the time of decommissioning.</p>				
SPECIALIST IMPACT 14: INFESTATION OF ALIEN PLANT SPECIES	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)
SPECIALIST IMPACT 15: LOSS OF INDIGENOUS VEGETATION	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)
SPECIALIST IMPACT 16: IMPACTS OF DECOMMISSIONING NOISE ON SURROUNDING FAUNAL POPULATIONS	MODERATE NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)	LOW NEGATIVE (-)

9.2.2 EAP Recommendations

Based on the National Screening Tool Report, the BA and the specialist sensitivities identified for the proposed Umoyilanga Ancillary Infrastructure development, **it is the opinion of the EAP that no fatal flaws have been identified and there is no reason not to authorise the proposed Umoyilanga Ancillary Infrastructure as long as the recommended mitigation, monitoring and management measures are implemented during the relevant phases of the development.**

APPENDIX A: CURRICULUM VITAE OF THE ENVIRONMENT TEAM

- Dr Alan Carter (CES, *Executive and Principal Consultant*)
- Ms Caroline Evans (CES, *Principal Consultant*)
- Ms Rosalie Evans (CES, *Senior Consultant*)

ALAN ROBERT CARTER

Curriculum Vitae



CONTACT DETAILS

Name of Company	Coastal and Environmental Services (Pty) Ltd. t/a CES
Designation	East London Branch – Executive
Profession	Executive
Years with firm	18 (Eighteen) Years
E-mail	a.carter@cesnet.co.za
Office number	+27 (0) 43 – 7267809 / 8313
Nationality	South African
Professional Affiliations	SACNASP: South African Council for Natural Scientific Profession EAPSA: Environmental Assessment Practitioners Southern Africa IWMSA: Institute Waste Management Southern Africa TSBPA: Texas State Board of Public Accountancy (USA)
Key areas of expertise	<ul style="list-style-type: none">• Marine Ecology• Environmental and coastal management• Waste management• Financial accounting and project feasibility studies• Environmental management systems, auditing and due-diligence

PROFILE

Dr Alan Carter

Alan has extensive training and experience in both financial accounting and environmental science disciplines with international accounting firms in South Africa and the USA. He is a member of the American Institute of Certified Public Accountants (licensed in Texas) and holds a PhD in Plant Sciences. He is also a certified ISO14001 EMS auditor with the American National Standards Institute. Alan has been responsible for leading and managing numerous and varied consulting projects over the past 25 years.

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EMPLOYMENT EXPERIENCE

- October 2013 – Present: Executive (EOH Coastal & Environmental Services, East London, South Africa)
- January 2002 – September 2013: Director (Coastal & Environmental Services, East London, South Africa)
- January 1999 – December 2001: Manager (Arthur Andersen LLP, Public Accounting Firm, Chicago, Illinois USA)
- December 1996 – December 1998: Senior Accountant/Auditor (Ernst & Young LLP, Public Accounting Firm, Austin, Texas, USA.)
- January 1994 – December 1996: Senior Accountant/Auditor (Ernst & Young, Charteris & Barnes, Chartered Accountants, East London, South Africa)
- July 1991 – December 1994: Associate Consultant (Coastal & Environmental Services, East London, South Africa)
- March 1989 – June 1990: Data Investigator (London Stock Exchange, London, England, United Kingdom)

ACADEMIC QUALIFICATIONS

- Ph.D. Plant Science (Marine) Rhodes University 1987
- B. Compt. Hons. Accounting Science University of South Africa 1997
- B. Com. Financial Accounting Rhodes University 1995
- B.Sc. Hons. Plant Science Rhodes University 1983
- B.Sc. Plant Science & Zoology Rhodes University 1982

CONTINUING PROFESSIONAL DEVELOPMENT

- Environmental Management Systems Lead Auditor Training Course - American National Standards Institute and British Standards Institute (2000)
- ISO 14001:2015 Implementing Changes - British Standards Institute (2015)
- Numerous other workshops and training courses

ALAN ROBERT CARTER
*Curriculum Vitae***PROFESSIONAL
EXPERIENCE****Environmental Impact Assessment, Feasibility and Pre-feasibility Assessments:-**

- Managed numerous projects and prepared environmental impact assessment (EIA) reports in terms of relevant EIA legislation and regulations for development proposals including: Infrastructure projects: bulk water and waste water, roads, electrical, mining, ports, aquaculture, renewable energy (solar and wind), industrial processes, housing developments, golf estates and resorts, etc. (2002 – present).
- Projects have also included preparation of applications in terms of other statutory requirements, such as water-use and mining licence /permit applications.
- Managed projects to develop pre-feasibility and feasibility assessments for various projects, including various tourism developments, infrastructure projects, etc.
- Managed project for the East London Industrial Development Zone (ELIDZ) to develop a Conceptual Framework for a Mariculture Zone within the ELIDZ (2009).
- Managed pre-feasibility study to establish a Mariculture Zone within the Coega Industrial Development Zone (2014).
- Assisted City of Johannesburg in the process to proclaim four nature reserves in terms of relevant legislation (2015-2016).
- Acted as Environmental Control Officer (ECO) for numerous projects including solar and wind farms, roads, industrial processes, etc.

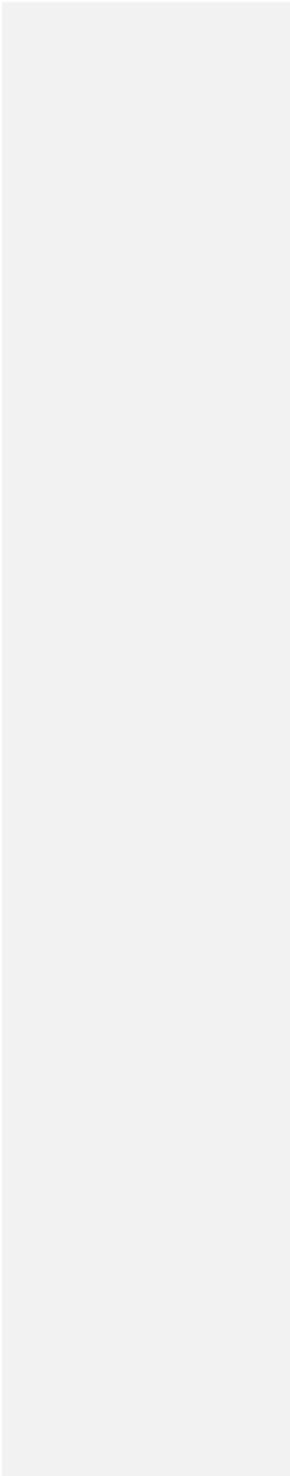
Strategic Environmental Assessment:-

- Managed Strategic Environmental Assessment (SEA) project toward the development of a Biofuel Industry in the Eastern Cape Province of South Africa (2014-2016)
- Managed Strategic Environmental Assessment (SEA) projects for two South African ports (2006 – 2007).
- Managed Strategic Environmental Assessment (SEA) projects for five (5) local municipalities in the Eastern Cape as part of the municipal Spatial Development Framework plans (2004 – 2005).
- Involved in the financial assessment of various land-use options and carbon credit potential as part of a larger Strategic Environmental Assessment (SEA) for assessing forestry potential in Water Catchment Area 12 in the Eastern Cape of South Africa (2006).

Climate change, emissions trading and renewable energy:-

- Provided specialist peer review services for National Department of Environmental Affairs relating to climate change impact assessments for large infrastructure projects (2017-2018).
- Conducted climate change impact assessment for a proposed coal-fired power station in Africa (2017-2018).

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- Participated in the development of a web-based Monitoring & Evaluation (M&E) system for climate change Mitigation and Adaptation in South Africa for National Department of Environmental Affairs (DEA) (2015-2016).
- Managed project to develop a Climate Change Strategy for Buffalo City Metro Municipality (2013).
- Managed projects to develop climate change strategies for two district municipalities in the Eastern Cape Province (2011).
- Conducted specialist carbon stock and greenhouse gas emissions impact and life cycle assessment as part of the Environmental, Social and Health Impact Assessment for a proposed sugarcane to ethanol project in Sierra Leone (2009 - 2010) and a proposed Jatropha bio-diesel project in Mozambique (2009 - 2010).
- Managed project to develop the Eastern Cape Province Climate Change Strategy (2010).
- Managed project to develop a Transnet National Ports Authority Climate Change Risk Strategy (2009)
- Participated in a project to develop a Renewable Energy roadmap for the East London Industrial Development Zone (ELIDZ) (2013).
- Participated in a project for the East London Industrial Development Zone (ELIDZ) and Eastern Cape Government to prepare a Renewable Energy Strategy (2009).
- Contributed to the development of Arthur Andersen LLP's International Climate Change and Emissions Trading Services (2001).
- Conducted carbon credit (Clean Development Mechanism - CDM) feasibility assessment for a variety of renewable energy projects ranging from biogas to solar PV.
- Participated in the preparation of CDM applications for two solar PV projects in the Eastern Cape.

Waste Management:-

- Managed project to develop Integrated Waste Management Plans for six local municipalities on behalf of the Sarah Baartman District Municipality in the Eastern Cape Province (2016).
- Managed project to develop Integrated Waste Management Plans for four local municipalities on behalf of Alfred Nzo District Municipality in the Eastern Cape Province (2015).
- Managed project to develop Integrated Waste Management Plans for eight local municipalities on behalf of Chris Hani District Municipality in the Eastern Cape Province (2011).
- Managed a project to develop a zero-waste strategy for a community development in the Eastern Cape Province (2010).
- Managed waste management status quo analysis for a District Municipality in the Eastern Cape Province (2003).
- For three consecutive years, managed elements of the evaluation of the environmental financial reserves of the three largest solid waste companies (Waste Management, Inc., Republic Services, Inc., Allied Waste, Inc.) and number of smaller waste companies in the USA as part of the annual financial audit process for SEC reporting purposes. Ensured compliance with RCRA and

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CERCLA environmental regulations.

- Managed elements of the evaluation of the environmental financial reserves of the largest hazardous waste company in the USA (Safety-Kleen, Inc.), as part of the audit process for SEC reporting purposes. Ensured compliance with RCRA and CERCLA environmental regulations.

Environmental Due Diligence and Business Risk:-

- Conducted environmental due diligence projects on behalf of the German Development Bank for a forestry pulp and paper operation in Swaziland (2010) and for a large diversified South African agricultural/agro-processing company (2011)
- Managed project for the Transnet National Ports Authority to identify the environmental risks and liabilities associated with the operations of the Port of Durban as part of a broader National initiative to assess business and financial risks relating to environmental management (2006).
- Managed project to determine the financial feasibility of various proposed tourism developments for the Kouga Development Agency in the Eastern Cape Province (2006)
- Contributed significantly to a study to determine the financial and environmental feasibility of three proposed tourism development projects at Coffee Bay on the Wild Coast (2004).
- Conducted sustainability and cost/benefit analysis of various waste water treatment options (including a marine pipeline at Hood Point) for the West Bank of East London (2004).
- Conducted analysis of permit fees and application processing costs for off-road vehicle use on the South African coastline for the Department of Environmental Affairs and Tourism, Marine & Coastal Management (2003).
- Involved in the determination of the historical cost element of environmental remediation insurance claims for a number of multinational companies, including Dow Chemicals, Inc. and International Paper, Inc.
- Evaluated the environmental budgeting process of the US Army and provided best practice guidance for improving the process.

Policy and Guidelines:-

- Development of Administration / Application Fee Structure for the Reclamation of Land, Coastal Use Permits, Coastal Waters
- Discharge Permits, Dumping Of Waste at Sea, Off-Road Vehicle Regulations Promulgated in Terms of the National Environmental Management Act: Integrated Coastal Management Act (Act No. 24 Of 2008) (2017).
- Managed project to develop an Estuarine Management Plan for the Buffalo River Estuary for the National Department of Environmental Affairs (2017).
- Managed project to develop a Coastal Management Programme for Amathole District Municipality, Eastern Cape (2015 – 2016).
- Managed project to develop a sustainability diagnostic report as part of the development of the Eastern Cape Development Plan and Vision 2030 (2013).
- Managed project for the Department of Environmental Affairs and Tourism, Marine & Coastal Management to determine the cost implications associated

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Curriculum Vitae

with the implementation of the Integrated Coastal Management Act (2007).

- Managed project to develop a Conservation Plan and Municipal Open Space System (MOSS) for Buffalo City Municipality (2007)
- Managed project to develop a Sanitation Policy and Strategy for Buffalo City Municipality, Eastern Cape (2004 – 2006).
- Managed project to develop an Integrated Environmental Management Plan and Integrated Coastal Zone Management Plan for Buffalo City Municipality, Eastern Cape (2004 – 2005).
- Managed projects to develop and implement an Environmental Management System (EMS) for the Chris Hani and Joe Gqabi (formerly Ukhahlamba) District Municipalities in the Eastern Cape generally in line with ISO14001 EMS standards (2004 – 2005).
- Managed project to develop a State of the Environment Report and Environmental Implementation Plans for Amathole, Chris Hani, OR Tambo and Joe Gqabi District Municipalities in the Eastern Cape Province (2005 – 20010).
- Conducted analysis of permit fees and application processing costs for off-road vehicle use on the South African coastline for the Department of Environmental Affairs and Tourism, Marine & Coastal Management (2003).

Environmental auditing and compliance:-

- Conducted environmental legal compliance audit for various large Transnet Freight Rail facilities (2018).
- Managed projects to develop Environmental & Social Management Systems (ESMS) in line with IFC Performance Standards for three (3) wind farms in South Africa (2015-2018).
- Managed project to develop an Environmental & Social Management System (ESMS) in line with IFC Performance Standards for a telecoms company in Zimbabwe on behalf of the German Development Bank (2013)
- Participated in numerous ISO14001 Environmental Management System (EMS) audits for large South African corporations including SAPPI, BHP Billiton, SAB Miller, Western Platinum Refinery, Dorbyl Group and others (2002 – present).
- Reviewed the SHE data reporting system of International Paper, Inc. (IP) for three successive years as part of the verification of the IP SHE Annual Report, which included environmental assessments of 12 IP pulp and paper mills located throughout the USA.
- Conducted Environmental Management System (EMS) reviews for a number of large US corporations, including Gulfstream Aerospace Corporation

Public financial accounting:-

- While with Ernst & Young LLP, (USA), functioned as lead financial auditor for various public and private companies, mostly in the technology business segment of up to \$200 million in annual sales. Client experience included assistance in a \$100 million debt offering, a \$100 million IPO and SEC annual and quarterly reporting requirements.
- Completed three years of articles (training contract) in fulfilment of the certification requirements of the South African Institute of Chartered

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Accountants which included auditing, accounting and preparation of tax returns for many small to medium sized commercial entities.

Refereed Publications:-

- Carter, A.R. 1985. Reproductive morphology and phenology, and culture studies of *Gelidium pristoides* (Rhodophyta) from Port Alfred in South Africa. *Botanica Marina* 28: 303-311.
- Carter, A.R. 1993. Chromosome observations relating to bispore production in *Gelidium pristoides* (Gelidiales, Rhodophyta). *Botanica Marina* 36: 253-256.
- Carter, A.R. and R.J. Anderson. 1985. Regrowth after experimental harvesting of the agarophyte *Gelidium pristoides* (Gelidiales: Rhodophyta) in the eastern Cape Province. *South African Journal of Marine Science* 3: 111-118.
- Carter, A.R. and R.J. Anderson. 1986. Seasonal growth and agar contents in *Gelidium pristoides* (Gelidiales, Rhodophyta) from Port Alfred, South Africa. *Botanica Marina* 29: 117-123.
- Carter, A.R. and R.H. Simons. 1987. Regrowth and production capacity of *Gelidium pristoides* (Gelidiales, Rhodophyta) under various harvesting regimes at Port Alfred, South Africa. *Botanica Marina* 30: 227-231.
- Carter, A.R. and R.J. Anderson. 1991. Biological and physical factors controlling the spatial distribution of the intertidal alga *Gelidium pristoides* in the eastern Cape Province, South Africa. *Journal of the Marine Biological Association of the United Kingdom* 71: 555-568.

Published reports:-

- Water Research Commission. 2006. Profiling Estuary Management in Integrated Development Planning in South Africa with Particular Reference to the Eastern Cape. Project No. K5/1485.
- Turpie J., N. Sihlophe, A. Carter, T. Maswime and S. Hosking. 2006. Maximising the socio-economic benefits of estuaries through integrated planning and management: A rationale and protocol for incorporating and enhancing estuary values in planning and management. Un-published Water Research Commission Report No. K5/1485

Conference Proceedings:-

- Carter, A.R. 2002. Climate change and emission inventories in South Africa. Invited plenary paper at the 5th International System Auditors Convention, Pretoria. Held under the auspices of the South African Auditor & Training Certification Association Conference (SAATCA).
- Carter, A.R. 2003. Accounting for environmental closure costs and remediation liabilities in the South African mining industry. Proceedings of the Mining and Sustainable Development Conference. Chamber of Mines of South Africa, Vol. 2: 6B1-5
- Carter, A.R. and S. Fergus. 2004. Sustainability analysis of wastewater treatment options on the West Bank of East London, Buffalo City. Proceedings of the Annual National Conference of the International Association for Impact

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Assessment, South African Affiliate: Pages 295-301.

- Carter, A., L. Greyling, M. Parramon and K. Whittington-Jones. 2007. A methodology for assessing the risk of incurring environmental costs associated with port activities. Proceedings of the 1st Global Conference of the Environmental Management Accounting Network.
- Hawley, GL, McMaster AR and Carter AR. 2009, Carbon, carbon stock and life-cycle assessment in assessing cumulative climate change impacts in the environmental impact process. Proceedings of the Annual National Conference of the International Association for Impact Assessment, South African Affiliate.
- Hawley, GL, McMaster AR and Carter AR. 2010. The Environmental and Social Impact Assessment and associated issues and challenges. African, Caribbean and Pacific Group of States (ACP), Science and Technology Programme, Sustainable Crop Biofuels in Africa.
- Carter, A.R. 2011. A case study in the use of Life Cycle Assessment (LCA) in the assessment of greenhouse gas impacts and emissions in biofuel projects. 2nd Environmental Management Accounting Network- Africa Conference on Sustainability Accounting for Emerging Economies. Abstracts: Pages 69-70.

CERTIFICATION

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.



Alan Robert Carter

Date: 22 January 2020

CAROLINE ANN EVANS
Curriculum Vitae**CONTACT DETAILS**

Name of Company	CES – Environmental and Social Advisory Services
Designation	Grahamstown Branch
Profession	Principal Environmental Consultant
Years with firm	7 Years
E-mail	c.evans@cesnet.co.za
Office number	+27 (0)46 622 2364
Nationality	South African
Professional Body	SACNASP, South African Council for Natural Scientific Profession, Professional 2017 IAIA
Key areas of expertise	<ul style="list-style-type: none">➤ Project Management➤ Renewable Energy

PROFILE**Ms Caroline Evans**

Ms Caroline Evans is a Principal Environmental Consultant based in the Grahamstown branch. She holds a BSc degree in Zoology and Environmental Science (with distinction) and a BSc Honours degree in Environmental Science (with distinction), both from Rhodes University. Caroline has completed accredited courses in environmental impact assessments and wetland assessments.

Caroline's primary focuses include Project Management, the general Environmental Impact Assessment Process, Visual Impact Assessments and Wetland Impact Assessments. Examples of fields in which Caroline was the project manager and lead report writer include Wind Energy Facilities and the associated infrastructure (including powerlines), Solar PV, Waste Water Treatment Works, Housing Developments and Agricultural Developments. Her experience with wind energy facilities and associated infrastructure includes the project management and report writing for the Umsobomvu WEF, Dassiesridge WEF, Scarlet Ibis WEF, Albany WEF, Waaihoek WEF and the Great Kei WEF.

Caroline is well versed in South African policy and legislation relating to development, particularly in the Eastern Cape Province. In addition, Caroline's project management experience has helped her gain knowledge and experience in the technical and financial management and coordination of large specialist teams, competent authority and stakeholder engagement, and client liaison.

CAROLINE ANN EVANS*Curriculum Vitae***EMPLOYMENT
EXPERIENCE****CES, Senior Environmental Consultant***August 2020 – present*

- Project Management
- Renewable Energy Consultant

EOH Coastal and Environmental Services, Senior Environmental Consultant*August 2016 – July 2020*

- Project Management
- Renewable Energy Consultant
- Wetland Specialist

EOH Coastal and Environmental Services, Environmental Consultant*November 2013 – July 2016***Rhodes University, Department of Environmental Science, Graduate Assistant***January 2010 – January 2012***ACADEMIC
QUALIFICATIONS****Rhodes University, Eastern Cape, South Africa***B.Sc. Honours Environmental Science (with distinction)
2011***Rhodes University, Eastern Cape, South Africa***B.Sc. Zoology & Environmental Science (with distinction)
2007-2010***COURSES**

- Rhodes University, Eastern Cape
“Tools for Wetland Assessment” 2010. (with distinction)
- Rhodes University, Eastern Cape
“Urban Ecology” 2010. (with distinction)
- Rhodes University, Eastern Cape
“Post Graduate Statistics” 2010. (with distinction)
- Rhodes University, Eastern Cape
“Environmental Impact Assessment” 2013. (with distinction)

**CONSULTING
EXPERIENCE****ENVIRONMENTAL IMPACT ASSESSMENTS:**

- Project: Albany Wind Energy Facility (Grahamstown, EC)
Role: Project Manager and Report Production
- Project: Umsobomvu Wind Energy Facility (Middelburg, EC / Noupoot, NC)
Role: Project Manager and Report Production
- Project: Waainek Wind Energy Facility Post-Construction Bird and Bat
Monitoring (Grahamstown, EC)

CAROLINE ANN EVANS
Curriculum Vitae



Role: Project Manager and Report Production

- Project: Dassiesridge Wind Energy Facility (Uitenhage, EC)
Role: Project Manager and Report Production
- Project: Waaihoek Wind Energy Facility (Utrecht, KZN)
Role: Project Manager and Report Production
- Project: Waaihoek Wind Energy Facility (Utrecht, KZN)
Role: Project Manager and Report Production
- Project: Great Kei Wind Energy Facility (Komga, EC)
Role: Assistant Project Manager and Report Production
- Project: Doordraai Citrus Plantation (Cookhouse, EC)
Role: Project Manager and Report Production
- Project: Fishwater Flats WWTW Biogas (Port Elizabeth, EC)
Role: Report Production
- Project: Olivewood Golf and Residential Estate (Chintsa, EC)
Role: Report Production

BASIC ASSESSMENTS:

- Project: Albany Powerline (Grahamstown, EC)
Role: Project Manager and Report Production
- Project: Scarlet Ibis Wind Energy Facility (NMBM, EC)
Role: Project Manager and Report Production
- Project: Grey Jade Waterfall Feedlot Biogas (Berlin, EC)
Role: Project Manager and Report Production
- Project: Black Lite Solar 5MW PV (Berlin, EC)
Role: Project Manager and Report Production
- Project: Sitrusrand Kirkwood Citrus (Kirkwood, EC)
Role: Project Manager
- Project: Kareekrans Middleton Pivot (Middleton, EC)
Role: Project Manager
- Project: Uitsig Boerdery Kirkwood Citrus (Kirkwood, EC)
Role: Project Manager

OTHER REPORTS:

- Project: Eastern Cape Biofuels Strategic Environmental Assessment (EC)
Role: Report Production
- Project: Coega Industrial Development Zone (EC)

CAROLINE ANN EVANS
Curriculum Vitae



Role: Report Production

- Project: Umsobomvu WEF EA Amendments (EC & NC)
Role: Project Manager and Report Production
 - Project: Dassiesridge WEF EA Amendments (EC)
Role: Project Manager and Report Production
 - Project: Great Kei WEF EA Amendments (EC)
Role: Project Manager and Report Production
 - Project: Ukomeleza WEF EA Amendments (EC)
Role: Project Manager and Report Production
 - Project: Motherwell WEF EA Amendments (EC)
Role: Project Manager and Report Production
 - Project: Golden Valley II WEF EA Amendments (EC)
Role: Project Manager and Report Production
 - Project: Peddie WEF and PV EA Amendments (EC)
Role: Project Manager and Report Production
 - Project: Nqamakwe WEF and PV EA Amendments (EC)
Role: Project Manager and Report Production
 - Project: Thomas River Renewable Energy Facility EA Amendments (EC)
Role: Project Manager and Report Production
 - Project: Qunu WEF and PV EA Amendments (EC)
Role: Project Manager and Report Production
- SPECIALIST REPORTS:**
- Project: Umsobomvu Wind Energy Facility (Middelburg, EC / Noupoort, NC)
Role: Visual Impact Assessment
 - Project: Dassiesridge Wind Energy Facility (Uitenhage, EC)
Role: Visual Impact Assessment
 - Project: Great Kei Wind Energy Facility (Komga, EC)
Role: Visual Impact Assessment
 - Project: Waaihoek Wind Energy Facility (Utrecht, KZN)
Role: Visual Impact Assessment & Wetland Impact Assessment
 - Project: Olivewood Golf and Residential Estate (Chintsa, EC)
Role: Visual Impact Assessment
 - Project: Oyster Bay Wind Energy Facility (Oyster Bay, EC)
Role: Wetland Impact Assessment

CAROLINE ANN EVANS
Curriculum Vitae



CERTIFICATION

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

A handwritten signature in black ink, appearing to read 'Caroline Ann Evans', written over a horizontal line.

CAROLINE ANN EVANS

Date: June 2019

ROSALIE ANN GREEFF (NÉE EVANS)

Curriculum Vitae



CONTACT DETAILS

Legal Name of Company	Coastal and Environmental Services (Pty) Ltd
Trading Name of Company	CES
Designation	Port Elizabeth Branch
Profession	Senior Environmental Consultant
Years with firm	Six (6) Years, Five (5) Months
E-mail	r.evans@cesnet.co.za
Office number (Head Office)	+27 (0)46 622 2364
Nationality	South African
Professional Body	International Association for Impact Assessment (IAIA) Member No. 5809 Land Rehabilitation Society of Southern Africa (LaRSSA) Member No. 52119
Key areas of expertise	<ul style="list-style-type: none"> ➤ Project Management ➤ Basic Assessment Processes ➤ Scoping and Environmental Impact Assessment (EIA) Processes ➤ GIS Mapping ➤ Reviewing Reports ➤ Part 2 Environmental Authorisation (EA) Amendment Processes ➤ Public Participation Processes ➤ NEMA Section 24 (G) Applications ➤ MPRDA Section 53 Applications

PROFILE

Ms Rosalie Evans

Rosalie is a Senior Environmental Consultant with six (6) and a half years’ experience and she is based in the Port Elizabeth branch. She holds a BA Honours Degree in Geography and Environmental Studies and a Degree in Social Dynamics with majors in Geography and Psychology, both from Stellenbosch University. Rosalie’s honours dissertation analysed the role of small grains in soil carbon sequestration in the agricultural sector of the Western Cape.

In 2016, Rosalie completed the Introduction to Environmental Impact Assessment Procedure Short Course by Coastal and Environmental Services and the Department of Environmental Science Rhodes University as well as the Estuary Management Short Course by Nelson Mandela University (NMU). In addition, Rosalie is a member of the Land Rehabilitation Society of Southern Africa (LaRSSA) and a member of the International Association for Impact Assessment (IAIA).

Rosalie’s key focus areas include renewable energy developments, linear developments, residential developments and agricultural developments. Her main focuses include Project Management, Basic Assessment Processes, Scoping and EIA Processes, Part 1 and Part 2 Environmental Authorisation (EA) Amendment Processes, Reviewing Reports, the Public Participation Process (PPP), NEMA Section 24 (G) Applications and associated reports, MPRDA Section 53 Applications and GIS Mapping.

ROSALIE ANN GREEFF (NÉE EVANS)
Curriculum Vitae



**EMPLOYMENT
EXPERIENCE**

Senior Environmental Consultant, CES

1 August 2018 - present
Project Management, Report Reviewing, GIS Mapping, BA and EIA Report Writing, NEMA Section 24 (G) Applications, Sub-consultant Management, MPRDA Section 53 Applications, Specialist Report Writing, & Part 2 Amendments.

Environmental Consultant, CES

1 August 2014 – 31 July 2018
GIS Mapping, BA and EIA Report Writing, NEMA Section 24 (G) Applications, MPRDA Section 53 Applications, Specialist Report Writing, Water Use Licensing Process & Public Participation Process.

Online Tutor (2nd year Geography, GGH2602), University of South Africa (UNISA)

1 August 2014 – present
Responding to/resolving e-tutor group student queries, maintaining the myUnisa GGH2602 e-tutor module site & preparing online activities for GGH2602.

Geography Junior Lecturer (1st year Geography, GGH1501), University of South Africa (UNISA)

1 June 2013 – 31 July 2014
Marking undergraduate and post-graduate assignments and examinations, responding to/resolving student queries and maintaining the myUnisa GGH1501 module site, assisting with writing study material for GGH1501 & Assisting with setting up assignments for GGH1501.

**ACADEMIC
QUALIFICATIONS**

Stellenbosch University, Stellenbosch

BA Honours in Geography & Environmental Studies
2012

Stellenbosch University, Stellenbosch

BA in Social Dynamics (Geography & Psychology)
2011

COURSES

1. Coastal & Environmental Services and the Department of Environmental Science Rhodes University, Grahamstown.
"Introduction to Environmental Impact Assessment Procedure Short Course." 2016.
2. Nelson Mandela Metropolitan University, Port Elizabeth.
"Estuary Management Short Course." 2016.

**CONSULTING
EXPERIENCE**

RENEWABLE ENERGY PROJECTS

1. Dassiesridge Battery Energy Storage System BA, Uitenhage, EC. 2020.
DEFF Basic Assessment Report & Biophysical Mapping.
2. Amended Bayview Wind Farm EIA, near Port Elizabeth, EC. 2020.
Project Management, Amended Public Participation Process Material, Amended DEFF Environmental Impact Report, Amended Environmental Management Programme & Amended Biophysical Mapping.
3. Coleskop Infrastructure (associated with the Coleskop WEF) Development Amended BA, Middelburg, EC / Noupoot, NC. 2020/21.
Project Management, Sub-Consultant Coordination, DEFF Amended Application, DEFF Amended Basic Assessment Report, DEFF Appendix 1 and Appendix 2 Generic Environmental Management Programmes, DEFF Standard NEMA EIA Regulations Environmental Management Programme & Public Participation Process.
4. Umsobomvu Infrastructure (associated with the Umsobomvu WEF) Development Amended BA, Middelburg, EC / Noupoot, NC. 2020/21.
Project Management, Sub-Consultant Coordination, DEFF Amended Basic Assessment Report, DEFF Standard Environmental Management Programme Template & Public Participation Process.
5. Water Use for 7 Wind Farms, EC & NC. 2019-2020.
Project Management, e-WULAAS Process (Phase 1) for Non-Binding Letters & DWS Liaison.
6. Dassiesridge Wind Energy Facility, Uitenhage, EC. 2020.
Project Management, DMRE Section 53 Application & DMRE Liaison.

ROSALIE ANN GREEFF (NÉE EVANS)**Curriculum Vitae**

7. Grahamstown Wind Farm, Morgan Bay, EC. 2020.
DEFF Pre-Application Liaison & Locality, Layout & Sensitivity Mapping.
8. Haga Haga Wind Energy Facility, Makhanda, EC. 2019-2020.
DEFF Pre-Application Liaison, Application Form for Part 2 EA Amendment & Biophysical Mapping.
9. Part 2 Amendment of the Ukomeleza Wind Energy Facility EA, Uitenhage, EC. 2019.
Biophysical Mapping.
10. Part 2 Amendment of the Motherwell Wind Energy Facility EA, Uitenhage, EC. 2019.
Biophysical Mapping.
11. Part 2 Amendment of the Dassiesridge Wind Energy Facility EA, Uitenhage, EC. 2019.
Biophysical Mapping & Assisting Part 2 Amendment of the EA Report Writing.
12. Part 2 Amendment of the Great Kei Wind Energy Facility EA, Komga, EC. 2019.
Biophysical Mapping & Assisting Part 2 Amendment of the EA Report Writing.
13. Part 2 Amendment of the Umsobomvu Wind Energy Facility Environmental Authorisation, Middelburg, EC/Noupoort, NC. 2019.
DEFF Application for Part 2 Amendment, Part 2 Amendment Report, Public Participation Material, DEFF Environmental Impact Report for the Umsobomvu I WEF, DEFF Environmental Impact Report for the Coleskop WEF, DEFF Environmental Impact Report for the Eskom Infrastructure MTS, Agriculture & Soils Assessment Report for the Umsobomvu I WEF, Agriculture & Soils Assessment Report for the Coleskop WEF, Agriculture & Soils Assessment Report for the Eskom MTS, Agriculture & Soils Opinion Letter & Biophysical Mapping.
14. Coleskop Infrastructure Development BA, Middelburg, EC / Noupoort, NC. 2019.
Project Management, DEFF Application, DEFF Basic Assessment Report, DEFF Environmental Management Programme Template (March 2019) & Public Participation Process Material.
15. Umsobomvu Infrastructure Development BA, Middelburg, EC / Noupoort, NC. 2019.
Project Management, DEFF Application, DEFF Basic Assessment Report, DEFF Environmental Management Programme Template (March 2019) & Public Participation Process Material.
16. Impofu Wind Farms (North, East and West) Section 53 Applications, Oyster Bay, EC. 2019.
Project Management for Three (3) Separate DMRE Section 53 Applications & DMRE Liaison.
17. Waainek Post-Construction Bird and Bat Monitoring, Grahamstown, EC. 2018.
Assisting Bat Data Analysis.
18. Albany Wind Energy Facility EIA, Grahamstown, EC. 2018/2019/2020.
Agriculture & Soils Assessment Report, DMRE Regulation 2.2 Map, Updating Ecological Assessment Report, Assisting DEFF Scoping Report, Biophysical Mapping & Public Participation Process Material.
19. Bayview Wind Farm EIA, near Port Elizabeth, EC. 2017.
Agriculture & Soils Assessment Report, Biophysical Mapping, Public Participation Process Material, Chapters of the DEFF Scoping Report, Chapters of the DEFF Environmental Impact Report, Environmental Management Programme & PPP on the Environmental Authorisation.
20. Upington SEZ & PV Solar EIA, Upington, NC. 2017.
Assisting DEFF Scoping Report & Tourism Assessment Report.
21. Scarlet Ibis Wind Energy Facility BA, Motherwell, EC. 2017.
Agriculture & Soils Assessment Report, DMRE Section 53 Application, DMRE Liaison, DMRE Regulation 2.2 Map, Public Participation Process Material, Biophysical Mapping & PPP on the Environmental Authorisation.
22. Waaihoek Wind Energy Facility EIA, Utrecht, KZN. 2015/2016.
Amended DEFF Applications (WEF & Powerline), Amended DEFF Powerline Environmental Impact Report, Appeals Process Public Participation Process & Tourism Assessment Report.
23. Umsobomvu Wind Energy Facility EIA, Middelburg, EC / Noupoort, NC. 2015.
Assisting DEFF Environmental Impact Report, Visual Assessment Report & DMRE Section 53 Application.
24. Dassiesridge Wind Energy Facility EIA, Uitenhage, EC. 2015.
Visual Assessment Report.
25. Great Kei Wind Energy Facility Section 53 Application, Komga, EC. 2015.
DMRE Section 53 Application & DMRE Liaison.

ROSALIE ANN GREEFF (NÉE EVANS)
Curriculum Vitae



LINEAR DEVELOPMENT PROJECTS

26. Woodlands 22 kV Overhead Line EMPr, Humansdorp, EC. 2020.
Project Management & Report Review.
27. Albany Overhead Line & Associated Grid Infrastructure BA, Makhandla, EC. 2020.
DEFF Basic Assessment Report, Appendix 1 and Appendix 2 Generic Environmental Management Programmes & Biophysical Mapping.
28. Driftsands Sewer Collector Augmentation (Phase II) ECO, Port Elizabeth, EC. 2019.
Review of Monthly Audit Reports.
29. Eskom Substation and Powerlines EIA, Heidelberg, GP. 2019.
Visual Assessment Report.
30. Grahamstown to Fish River Pass: Phase 2 Road Upgrade ECO, EC. 2017-2019.
Project Management & Review of Monthly Audit Reports.
31. Lizmore to Heidelberg Road Upgrade & Borrow Pits BA, Heidelberg, WC. 2017.
Baseline Sensitivity Report, DEFF Application, DEFF Basic Assessment Report, Environmental Management Programme, DMRE Regulation 2.2 Maps & Specialist Mapping.
32. Matatiele to KZN Border Road Upgrade & Borrow Pits BA, Matatiele, EC. 2016.
Baseline Sensitivity Report, DEFF Application, DEFF Basic Assessment Report, Environmental Management Programme, Public Participation Process, DMRE Application, DMRE Scoping Report & PPP on the Environmental Authorisation.
33. Specialist Input for the Route Location of possible Bypasses at Butterworth on National Route N2 Section 17 and 18, Butterworth, EC. 2016.
Project Management & Biophysical Mapping.
34. Specialist Input for the Route Location of possible Bypasses at Dutywa on National Route N2 Section 17 and 18, Dutywa, EC. 2016.
Project Management & Biophysical Mapping.
35. National Route N2 Bypass Road EIA, King William's Town, EC. 2016.
DEFF Application & DEFF Scoping Report
36. Green River to Zwelitsha and the new Breidbach Interchange Road Upgrade BA, King William's Town, EC. 2016.
Baseline Sensitivity Report, DEFF Application, DEFF Basic Assessment Report, Environmental Management Programme, DWS Water Use Applications, Public Participation Process & PPP on the Environmental Authorisation.
37. Molteno Sewer & Sewage Pump Stations BA, Molteno, EC. 2015/2016.
Project Management, DEDEAT Application, DEDEAT Basic Assessment Report, Environmental Management Programme, DWS Water Use Applications, Public Participation Process, Rehabilitation, Erosion Management & Alien Invasive Management Plan & PPP on the Environmental Authorisation.
38. Lusikisiki Regional Water Supply Scheme EIA: Zalu Dam, Lusikisiki, EC. 2015.
Visual Assessment Report & Environmental Management Programme.

RESIDENTIAL DEVELOPMENT PROJECTS

39. Khayamandi Extension on Erven 114, 609, 590 and 24337 ECO, Bethelsdorp, EC. 2019.
Review of Monthly Audit Reports & Quarterly Report Review.
40. Residential Development on a Portion of Erf 1226 in Fairview ECO, Port Elizabeth, EC. 2019.
Review of Monthly Audit Reports.
41. Victoria Drive ECO, Port Elizabeth, EC. 2019.
Review of Monthly Audit Reports & Quarterly Report Review.
42. Phase 3 & Phase 4 West End Student Residence Development BA, Port Elizabeth, EC. 2018.
Project Management, Public Participation Process Material, Biophysical Mapping, DEDEAT Basic Assessment Report, Environmental Management Programme & PPP on the Environmental Authorisation.

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Curriculum Vitae



- 43. Phase 1 & Phase 2 West End Student Residence Development BA, Port Elizabeth, EC. 2018.
Project Management, Public Participation Process Material, Biophysical Mapping, DEDEAT Basic Assessment Report, Environmental Management Programme & PPP on the Environmental Authorisation.
- 44. St Christopher’s Private School BA, Port Elizabeth, EC. 2017.
Project Management, DEDEAT Application, Biophysical Mapping & DEDEAT Basic Assessment Report.
- 45. Wells Estate Social Housing Development BA, Port Elizabeth, EC. 2017.
Project Management, DEDEAT Basic Assessment Report, Environmental Management Programme & ELC Meeting Presentation.
- 46. Subdivision & Mixed-Use Development on Erf 1 Parsonsvei EIA, EC.2017.
Project Management, DEDEAT Scoping Report & Public Participation Process.
- 47. Thriftwood Housing Development NEMA Section 24G Application, EC. 2017.
Project Management & Biophysical Mapping.
- 48. Brickvest NEMA Section 24G Application, EC. 2017.
Project Management, Biophysical Mapping, Public Participation Process Material, NEMA Section 24G Application, DWS Water Use Applications & DWS Risk Assessment.
- 49. Potsdam Housing Development EIA, Potsdam, EC. 2016.
DEDEAT Application & DEDEAT Scoping Report.
- 50. Phase 4 Housing Development BA, East London, EC. 2016.
Assisting DEDEAT Basic Assessment Report.
- 51. Olivewood Golf & Country Estate BA, Chintsa, EC. 2015/2016.
DEDEAT Basic Assessment Report & Public Participation Process.

AGRICULTURAL DEVELOPMENT PROJECTS

- 52. Development of Citrus and Associated Infrastructure on Nomzamo Farm EIA, Kirkwood, EC. 2019-2021.
Project Management, Specialist Coordination & the review of the Application.
- 53. Development of Citrus and Associated Infrastructure on Siyahluma Farm EIA, Addo, EC. 2019-2021.
Project Management, Specialist Coordination & the review of the Application.
- 54. Development of 19.9 ha of Citrus BA, Kirkwood, EC. 2019-2020.
Project Management, DEDEAT Application, DEDEAT Basic Assessment Report, Environmental Management Programme & Public Participation Process.
- 55. Dwarsleegte Farm Citrus Development BA, Kirkwood, EC. 2019-2020.
Report Review.
- 56. Development of Agricultural Lands Section 24(G), Cookhouse, EC. 2019.
Section 24(G) Application and Reporting, Environmental Management Programme, Public Participation Process & Biophysical Mapping.
- 57. Development of Agricultural Lands Section 24(G), Klipfontein, EC. 2019.
Section 24(G) Application and Reporting, Environmental Management Programme, Public Participation Process & Biophysical Mapping.
- 58. Joubert Dorndraai Citrus Farm EIA, EC. 2018.
DEDEAT Application, Public Participation Process Material, DEDEAT Scoping Report & Biophysical Mapping.

OTHER DEVELOPMENT PROJECTS

- 59. Kenton-on-Sea Private Jetty BA, Kenton-on-Sea, EC. 2020-2021.
Project Management & Report Review.
- 60. Fishwater Flats Wastewater Treatment Works ECO, Nelson Mandela Bay Municipality, EC. 2019.
Review of Monthly Audit Reports.

ROSALIE ANN GREEFF (NÉE EVANS)
Curriculum Vitae



- 61. The Refurbishment of the Kwanobuhle Wastewater Treatment Plant ECO, Nelson Mandela Bay Municipality, EC. 2019.
Review of Monthly Audit Reports.
- 62. Development of a Facility for the Recycling & Smelter of Non-ferrous Metals in the Coega SEZ, Port Elizabeth, EC. 2019.
Project Management & Specialist Coordination.
- 63. Central Balama Graphite Mine ESIA, Balama, Mozambique. 2018.
Land & Natural Resource Use Report.
- 64. Roode Heuwel Prospecting Right, Garies, NC. 2018.
Biophysical Mapping.
- 65. Kenmare Moma Titanium Minerals Mine ESIA, Mozambique. 2018.
Biophysical Mapping, Assisting Estuarine Assessment Report, Assisting PPP Posters & Presentation.
- 66. General Motors NEMA Section 24G, EC. 2017-2019.
Project Management, NEMA Section 24G Application, Public Participation Process Material, Biophysical Mapping, DWS Water Use Applications & DWS Risk Assessment.
- 67. Toliara Sand Heavy Minerals Mine ESHIA, Madagascar. 2017.
PPP Presentation & Posters & Infrastructure Mapping.
- 68. Pofadder Prospecting Right, NC. 2017.
Biophysical Mapping.
- 69. Kurlandbrik Mine Social and Labour Plan, WC. 2017.
Updated Social & Labour Plan.
- 70. Justin Le Roux Weir Development NEMA Section 24G Application, EC. 2017-2020.
Project Management, NEMA Section 24G Application, Basic Assessment Report (for rectification), Environmental Management Programme & Public Participation Process Material.
- 71. Port St Johns Beach Infrastructure EIA, Port St Johns, EC. 2017.
Estuarine Assessment Report.
- 72. Tyityaba Game Reserve Conservation Management Plan, Komga, EC. 2016.
Assisting Conservation Management Plan.
- 73. Environmental Screening for a Pumped Storage Scheme, Hogsback, EC. 2016.
Biophysical Mapping.
- 74. Eastern Cape Biodiversity Conservation Strategy and Action Plan, EC. 2016.
Assisting Mapping Specialist Data.
- 75. Bodeux Fuel Station EMP, East London, EC. 2015.
Assisting Environmental Management Programme.
- 76. Gonubie Boardwalk NEMA Section 24G Application, Gonubie, EC. 2014.
Assisting NEMA Section 24G Application.

CERTIFICATION

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

ROSALIE ANN GREEFF

Date: December 2020

APPENDIX B: EAP DECLARATION



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

File Reference Number:	(For official use only)
NEAS Reference Number:	DEA/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Dassiesridge Priority Ancillary Infrastructure, Kariega (Uitenhage), Eastern Cape.

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.environment.gov.za/documents/forms>.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:
Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:
Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

1. ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP) INFORMATION

Company of Environmental Assessment Practitioner: B-BBEE	Coastal and Environmental Services (Pty) Ltd. t/a CES		
	Contribution level (indicate 1 to 8 or non-compliant)	1	Percentage Procurement recognition 135%
EAP name:	Dr Alan Carter		
EAP Qualifications:	PhD, Plant Sciences, Rhodes University 1987 B.Compt Hons. Accounting Science, University of South Africa 1997 BSc (Honours), Plant Science, Rhodes University 1983 BSc, Plant Science & Zoology, Rhodes University 1982		
Professional affiliation/registration:	SACNASP: South African Council for Natural Scientific Profession EAPSA: Environmental Assessment Practitioner Southern Africa IWMSA: Institute Waste Management Southern Africa TSBPA: Texas State Board of Public Accountancy (USA) IAIA: International Association of Impact Assessment		
Physical address:	25 Tecoma Street Berea East London 5214		
Postal address:	PO Box 8145 Berea East London 5214		
Postal code:	5200	Cell:	083 379 9861
Telephone:	043 726 7809	Fax:	043 726 8352
E-mail:	a.carter@cesnet.co.za		

The appointed EAP must meet the requirements of Regulation 13 of GN R982 of 04 December 2014, as amended.

2. DECLARATION BY THE EAP

I, ALAN CARTER, declare that –

- I act as the independent environmental assessment practitioner in this application;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I will take into account, to the extent possible, the matters listed in Regulation 13 of the Regulations when preparing the application and any report relating to the application;
- I undertake to disclose to the applicant and the Competent Authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the Competent Authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the Competent Authority, unless access to that information is protected by law, in which case it will be indicated that such information exists and will be provided to the Competent Authority;
- I will perform all obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I am aware of what constitutes an offence in terms of Regulation 48 and that a person convicted of an offence in terms of Regulation 48(1) is liable to the penalties as contemplated in Section 49B of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;
- ~~I have a vested interest in the proposed activity proceeding, such vested interest being:~~

Signature of the Environmental Assessment Practitioner

COASTAL AND ENVIRONMENTAL SERVICES (PTY) LTD. t/a CES

Name of Company:

12TH APRIL 2021

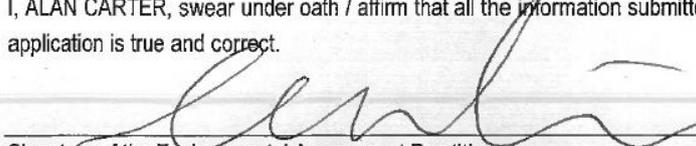
Date

Details of EAP, Declaration and Undertaking Under Oath

Page 3 of 4

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, ALAN CARTER, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.



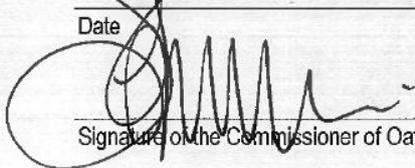
Signature of the Environmental Assessment Practitioner

COASTAL AND ENVIRONMENTAL SERVICES (PTY) LTD. t/a CES

Name of Company

12TH APRIL 2021

Date



Signature of the Commissioner of Oaths

12TH APRIL 2021

Date

LYNN SMIT
COMMISSIONER OF OATHS
REFERENCE NUMBER: 9/1/8/2 EAST LONDON
25 TECOMA STREET, BEREA
EAST LONDON, 5214

APPENDIX C: SPECIALIST REPORTS

PLEASE SEE THE SEPARATE SPECIALIST REPORTS, AS LISTED BELOW.

- Archaeological Assessment Report (Exigo, March/April 2021)
- Ecological Assessment Report (CES, March/April 2021)

APPENDIX D: SITE PHOTOGRAPHS



Plate A: 8 Point Study Area Photographs: 33°36'3.95"S, 25°29'32.25"E (western section).



Plate B: 8 Point Study Area Photographs: 33°36'9.24"S, 25°30'58.35"E (eastern section).

APPENDIX E: ENVIRONMENTAL MANAGEMENT PROGRAMME

PLEASE SEE THE SEPARATE ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR).

APPENDIX F: PROOF OF PPP

PLEASE NOTE THAT THIS SECTION WILL BE UPDATED SUBSEQUENT TO THE PUBLIC REVIEW PERIOD

APPENDIX G: COMMENTS & RESPONSE REPORT

PLEASE SEE THE SEPARATE COMMENTS AND RESPONSE REPORT ATTACHED TO THIS REPORT – TO BE INCLUDED IN THE FINAL BAR, SUBSEQUENT TO THE PUBLIC REVIEW PERIOD.