FINAL GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR) FOR THE DEVELOPMENT AND EXPANSION OF SUBSTATION INFRASTRUCTURE FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY

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(KZN DEDTEA REFERENCE NUMBER: DC/0003/2023: KZN/IA/0002110/2024)

CONSTRUCTION OF ONSITE SUBSTATIONS

AUGUST 2024

APPENDIX 2

GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE DEVELOPMENT AND EXPANSION OF SUBSTATION INFRASTRUCTURE FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY




environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

1. Background

The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment (EIA) has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation (EA). The content of an EMPr must either contain the information set out in Appendix 4 of the Environmental Impact Assessment Regulations, 2014, as amended (EIA Regulations) or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including but not limited to the applicant and the competent authority (CA).

2. Purpose

This document constitutes a generic EMPr relevant to applications for the development or expansion of substation infrastructure for the transmission and distribution of electricity, and all listed and specified activities necessary for the realisation of such infrastructure.

3. Objective

The objective of this generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and impact management actions, which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of substation infrastructure for the transmission and distribution of electricity. The use of a generic EMPr is intended to reduce the need to prepare and review individual EMPrs for applications of a similar nature.

4. Scope

The scope of this generic EMPr applies to the development or expansion of substation infrastructure for the transmission and distribution of electricity requiring EA in terms of NEMA. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, as amended, and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, as amended, and all associated listed or specified activities necessary for the realization of such infrastructure.

5. Structure of this document

This document is structured in three parts with an Appendix as indicated in the table below:

Part	Section	Heading	Content
A		Provides general guidance and information and is **not legally binding**	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved generic EMPr template	Contains generally accepted impact management outcomes and impact management actions required for the avoidance, management and mitigation of impacts

Part	Section	Heading	Content
			and risks associated with the development or expansion of substation infrastructure for the transmission and distribution of electricity, which are presented in the form of a template that has been pre-approved. The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to commencement of the activity. Where an impact management outcome is not relevant, the words "not applicable" can be inserted in the template under the "responsible persons" column. Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template **is not required** to be submitted to the CA as once the generic EMPr is gazetted for implementation, it has been approved by the CA. To allow interested and affected parties access to the pre-approved EMPr template for consideration through the decision-making process, the EAP on behalf of the applicant /proponent must make the hard copy of this EMPr available at a public location and where the applicant has a website, the EMPr should also be made available on such publicly accessible website.
	2	Site specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA will comply with the pre-approved generic EMPr template contained in Part B: Section 1, and understands that the impact management outcomes and impact management actions are **legally binding**. The preliminary infrastructure layout must be finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management outcomes and impact management actions have been either pre-approved or approved in terms of Part C. This section **must be** submitted to the CA together with the final BAR or EIAR. The information submitted to the CA will be considered to be incomplete should a signed copy of Part B: section 2 not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.

Part	Section	Heading	Content
C		Site specific sensitivities/ attributes	If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr, to manage impacts, these specific impact management outcomes and impact management actions must be included in this section. These specific environmental attributes must be referenced spatially and impact management outcomes and impact management actions must be provided. These specific impact management outcomes and impact management actions must be presented in the format of the pre-approved EMPr template (Part B: section 1) This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if Part C is applicable to the site, it **is required** to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. Once approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only **to additional** impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in Part B: section 1.
Appendix 1			Contains the method statements to be prepared prior to commencement of the activity. The method statements are **not required** to be submitted to the competent authority.

6. Completion of part B: section 1: the pre-approved generic EMPr template

The template is to be completed prior to commencement of the activity, by providing the following information for each environmental impact management action:

- For implementation
  - a 'responsible person',
  - a method for implementation,
  - a timeframe for implementation
- For monitoring
  - a responsible person

- frequency
- evidence of compliance.

The completed template must be signed and dated by the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must be signed and dated on each page by the holder of the EA. This template once signed and dated is legally binding. The holder of the EA will remain responsible for its implementation.

7. Amendments of the impact management outcomes and impact management actions

Once the activity has commenced, a holder of an EA may make amendments to the impact management outcomes and impact management actions in the following manner:

- Amendment of the impact management outcomes: in line with the process contemplated in Regulation 37 of the EIA Regulations; and
- Amendment of the impact management actions: in line with the process contemplated in Regulation 36 of the EIA Regulations.

8. Documents to be submitted as part of part B: section 2 site specific information and declaration

Part B: Section 2 has three distinct sub-sections. The first and third sub-sections are in a template format. Sub-section two requires a map to be produced.

Sub-section 1 contains the project name, the applicant's name and contact details, the site information, which includes coordinates of the property or farm in which the proposed substation infrastructure is proposed as well as the 21-digit Surveyor General code of each cadastral land parcel and, where available, the farm name.

Sub-section 2 is to be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout using the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g. threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features and within 50 m from the development footprint.

Sub-section 3 is the declaration that the applicant (s)/proponent (s) or holder of the EA in the case of a change of ownership must complete which confirms that the applicant/EA holder will comply with the pre-approved 'generic EMPr' template in Section 1 and understands that the impact management outcomes and impact management actions are legally binding.

(a) Amendments to Part B: Section 2 – site specific information and declaration

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant/proponent and submitted with the application for an amendment of the EA in terms of regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted as part of such an application for an amendment to an EA will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

PART A – GENERAL INFORMATION

1. DEFINITIONS

In this EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA Regulations has that meaning, and unless the context requires otherwise –

"clearing" means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified;

"construction camp" is the area designated for key construction infrastructure and services, including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;

"contractor" - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described.

"**hazardous substance**" is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995;

"method statement" means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and ECO. The method statement must set out the equipment, materials, labour and method(s) the Contractor proposes using to carry out an activity identified by the Project Manager when requesting the Method Statement. This must be done in such detail that the Project Manager and ECO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification;

The method statement must cover as a minimum applicable details with regard to:

(i) Construction procedures;
(ii) Plant, materials and equipment to be used;
(iii) Transporting the equipment to and from site;
(iv) How the plant/ material/ equipment will be moved while on site;
(v) How and where the plant/ material/ equipment will be stored;
(vi) The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
(vii) Timing and location of activities;
(viii) Compliance/ non-compliance; and
(ix) Any other information deemed necessary by the Project Manager.

"slope" means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units;

"solid waste" means all solid waste, including construction debris, hazardous waste, excess cement/ concrete, wrapping materials, timber, cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers);

"spoil" means excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works;

"topsoil" means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility, appearance, structure, agricultural potential, fertility and composition of the soil;

"works" means the works to be executed in terms of the Contract

2. ACRONYMS and ABBREVIATIONS

CA	Competent Authority
cEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
EAR	Environmental Audit Report
ECA	Environmental Conservation Act No. 73 of 1989
ECO	Environmental Control Officer
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
MSDS	Material Safety Data Sheet
RI&AP's	Registered Interested and affected parties

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION

The effective implementation of this generic EMPr is dependent on established and clear roles, responsibilities and reporting lines within an institutional framework. This section of the EMPr gives guidance to the various environmental roles and reporting lines, however, project specific requirements will ultimately determine the need for the appointment of specific person(s) to undertake specific roles and or responsibilities. As such, it must be noted that in the event that no specific person, for example, an environmental control officer (ECO) is appointed, the holder of the EA remains responsible for ensuring that the duties indicated in this document for action by the ECO are undertaken.

Table 1: Guide to roles and responsibilities for implementation of an EMPr

Responsible Person(s)	Role and Responsibilities
Developer's Project Manager (DPM)	Role The Project Developer is accountable for ensuring compliance with the EMPr and any conditions of approval from the competent authority (CA). Where required, an environmental control officer (ECO) must be contracted by the Project Developer to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of the environmental authorisation (EA). The Project Developer is further responsible for providing and giving mandate to enable the ECO to perform responsibilities, and he must ensure that the ECO is integrated as part of the project team while remaining independent. Responsibilities - Be fully conversant with the conditions of the EA; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s); - Issuing of site instructions to the Contractor for corrective actions required; - Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings. Overall management of the project and EMPr implementation; and - Ensure that periodic environmental performance audits are undertaken on the project implementation.
Developer Site Supervisor (DSS)	Role The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO. The DSS is responsible for the day to day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr. Responsibilities

Responsible Person(s)	Role and Responsibilities
	- Ensure that all contractors identify a contractor's Environmental Officer (cEO); - Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO; - Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO; - Issuing of site instructions to the Contractor for corrective actions required; - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	<u>Role</u> The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non-compliance with the Performance Specifications as set out in the EA and EMPr. The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested &Affected Parties' (RI&AP's), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager, and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Project Manager. The ECO must also, as specified by the EA, report to the relevant CA as and when required. <u>Responsibilities</u> The responsibilities of the ECO will include the following: - Be aware of the findings and conclusions of all EA related to the development; - Be familiar with the recommendations and mitigation measures of this EMPr; - Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them; - Undertake regular and comprehensive site inspections / audits of the construction site according to the generic EMPr and applicable licenses in order to monitor compliance as required; - Educate the construction team about the management measures contained in the EMPr and environmental licenses;

Responsible Person(s)	Role and Responsibilities
	- Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective; - Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements; - In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licenses; - Liaison between the DPM, Contractors, authorities and other lead stakeholders on all environmental concerns; - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr; - Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO); - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken; - Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken; - Assisting in the resolution of conflicts; - Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor; - In case of non-compliances, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; - Maintenance, update and review of the EMPr; - Communication of all modifications to the EMPr to the relevant stakeholders.
developer Environmental Officer (dEO)	<u>Role</u> The dEOs will report to the Project Manager and are responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities. <u>Responsibilities</u> - Be fully conversant with the EMPr; - Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures;

Responsible Person(s)	Role and Responsibilities
	- Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) ; - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared; - Assist the contractor in investigating environmental incidents and compile investigation reports; - Follow-up on pre-warnings, defects, non-conformance reports; - Measure and communicate environmental performance to the Contractor; - Conduct environmental awareness training on site together with ECO and cEO; - Ensure that the necessary legal permits and / or licenses are in place and up to date; - Acting as Developer's Environmental Representative on site and work together with the ECO and contractor;
Contractor	<u>Role</u> The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development or expansion of substation infrastructure for the transmission and distribution of electricity activities. <u>Responsibilities</u> - project delivery and quality control for the development services as per appointment; - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period; - ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely; - attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones; - ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO.

Responsible Person(s)	Role and Responsibilities
contractor Environmental Officer (cEO)	Role Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr). The Contractor's representative can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the Environmental Control Officer and the public. As a minimum the cEO shall meet the following criteria: Responsibilities - Be on site throughout the duration of the project and be dedicated to the project; - Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site; - Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements; - Attend the Environmental Site Meeting; - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; - Report back formally on the completion of corrective actions; - Assist the ECO in maintaining all the site documentation; - Prepare the site inspection reports and corrective action reports for submission to the ECO; - Assist the ECO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all substation infrastructure projects as a minimum requirement.

4.1 Document control/Filing system

The holder of the EA is solely responsible for the upkeep and management of the EMPr file. As a minimum, all documentation detailed below will be stored in the EMPr file. A hard copy of all documentation shall be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the DSS (where applicable). This duplicate file must remain current and up-to-date. The filing system must be updated and relevant documents added as required. The EMPr file must be made available at all times on request by the CA or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

4.2 Documentation to be available

At the outset of the project the following preliminary list of documents shall be placed in the filing system and be accessible at all times:

- Full copy of the signed EA from the CA in terms of NEMA, granting approval for the development or expansion;
- Copy of the generic and site specific EMPr as well as any amendments thereof;
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof;
- All method statements;
- Completed environmental checklists;
- Minutes and attendance register of environmental site meetings;
- An up-to-date environmental incident log;
- A copy of all instructions or directives issued;
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record;
- Complaints register.

4.3 Weekly Environmental Checklist

The ECOs are required to complete a Weekly Environmental Checklist, the format of which is to be agreed prior to commencement of the activity. The ECOs are required to sign and date the checklist, retain a copy in the EMPr file and submit a copy of the completed checklist to the DSS on a weekly basis.

The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the Environmental Audit Report as required in terms of the EIA Regulations.

4.4 Environmental site meetings

Minutes of the environmental site meetings shall be kept. The minutes must include an attendance register and will be attached to the Monthly Report that is distributed to attendees. Each set of minutes must clearly record “Matters for Attention” that will be reviewed at the next meeting.

4.5 Required Method Statements

The method statement will be done in such detail that the ECOs are enabled to assess whether the contractor's proposal is in accordance with the EMPr.

The method statement must cover applicable details with regard to:

- development procedures;
- materials and equipment to be used;
- getting the equipment to and from site;
- how the equipment/ material will be moved while on site;
- how and where material will be stored;
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- timing and location of activities;
- compliance/ non-compliance with the EMPr; and
- any other information deemed necessary by the ECOs.

Unless indicated otherwise by the Project Manager, the Contractor shall provide the following method statements to the Project Manager no less than 14 days prior to the commencement date of the activity:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure;
- Batch plants;
- Workshop or plant servicing;
- Handling, transport and storage of Hazardous Chemical Substance's;
- Vegetation management – Protected, clearing, aliens, felling;
- Access management – Roads, gates, crossings etc.;
- Fire plan;
- Waste management – transport, storage, segregation, classification, disposal (all waste streams);
- Social interaction – complaints management, compensation claims, access to properties etc.;
- Water – use (source, abstraction and disposal), access and all related information, crossings and mitigation;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Dust and noise management methodologies;
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The ECOs shall monitor and ensure that the contractors perform in accordance with these method statements. Completed and agreed method statements between the holder of the EA and the contractor shall be captured in Appendix 1.

4.6 Environmental Incident Log (Diary)

The ECOs are required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a means to record all environmental incidents and/or all non-compliance notice would not be issued. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this EMPr) that may be addressed immediately by the ECOs. (For example a contractor's staff member littering or a drip tray that has not been emptied);
- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the EMPr which as a single event would have a minor impact but which if cumulative and continuous would have a significant effect (for example no toilet paper available in the ablutions for an afternoon); and
- General environmental information such as road kills or injured wildlife.

The ECOs are to record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the Developer. The Log is to be kept in the EMPr file and at a minimum the following will be recorded for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The name of the Contractor responsible;
- The incident must be listed as significant or minor;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log;
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

The Environmental Incident Log will be captured in the EAR.

4.7 Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECOs via the DSS or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the EMPr file and will at a minimum include the following:

- Time and date of the non-compliance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;
- Recommended / required corrective action; and
- Date by which the corrective action to be completed.
- The contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the development site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. The ECO should be made aware of any complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. Failure to redress the cause shall be reported to the relevant CA for them to deal with the transgression, as it deems fit. The contractor is deemed not to have complied with the EMPr if, inter alia, There is a deviation from the environmental conditions, impact management outcomes and impact management actions activities, as approved in generic and site specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause, an environmental impact.

4.8 Corrective action records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the DSS, the contractor's cEO will ensure that the corrective actions required take place within the stipulated timeframe. On completion of the corrective action the cEO is to issue a Corrective Action Report in writing to the ECOs. If satisfied that the corrective action has been completed, the ECOs are to sign-off on the Corrective Action Report, and attach the report to the non-compliance notice in the EMPr file. A corrective action is considered complete once the report has signed off by the ECOs.

4.9 Photographic record

A digital photographic record will be kept. The photographic record will be used to show before, during and post rehabilitation evidence of the project as well used in cases of damages claims if they arise. Each image must be dated, and a brief description note attached.

The Contractor shall:

1. Allow the ECOs access to take photographs of all areas, activities and actions.

The ECOs shall keep an electronic database of photographic records which will include:

1. Pictures of all areas designated as work areas, camp areas, development sites and storage areas taken before these areas are set up;
2. All bunding and fencing;
3. Road conditions and road verges;
4. Condition of all farm fences;
5. Topsoil storage areas;
6. All areas to be cordoned off during construction;
7. Waste management sites;
8. Ablution facilities (inside and out);
9. Any non-conformances deemed to be "significant";
10. All completed corrective actions for non-compliances;
11. All required signage;
12. Photographic recordings of incidents;
13. All areas before, during and post rehabilitation; and
14. Include relevant photographs in the Final Environmental Audit Report.

4.10 Complaints register

The ECOs shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders and individuals. The Complaints Record shall:

1. Record the name and contact details of the complainant;
2. Record the time and date of the complaint;
3. Contain a detailed description of the complaint;
4. Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
5. Contain a copy of the ECOs written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO's written response will include a description

of any corrective action to be taken and must be signed by the Contractor, ECO and affected party. Where a damage claim is issued by the complainant, the ECOs shall respond as described in (**section 4.11**) below.

4.11 Claims for damages

In the event that a Claim for Damages is submitted by a community, landowner or individual, the ECOs shall:

1. Record the full detail of the complaint as described in (**section 4.10**) above;
2. The DPM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
3. Following consideration by the DPM, the claim is to be resolved and settled immediately, or the reason for not accepting the claim communicated in writing to the claimant. Should the claimant not accept this, the ECO shall, in writing report the incident to the Developer's negotiator and legal department; and
4. A formal record of the response by the ECOs to the claimant as well as the rectification of the method of making payments not amount will be recorded in the EMPr file.

4.12 Interactions with affected parties

Open, transparent and good relations with affected landowners, communities and regional staff are an essential aspect to the successful management and mitigation of environmental impacts.

The ECOs shall:

1. Ensure that all queries, complaints and claims are dealt within an agreed timeframe;
2. Ensure that any or all agreements are documented, signed by all parties and a record of the agreement kept in the EMPr file;
3. Ensure that a complaints telephone numbers are made available to all landowners and affected parties; and
4. Ensure that contact with affected parties is courteous at all times;

4.13 Environmental audits

Internal environmental audits of the activity and implementation of the EMPr must be undertaken. The findings and outcomes included in the EMPr file and submitted to the CA at intervals as indicated in the EA.

The ECOs must prepare a monthly EAR. The report will be tabled as the key point on the agenda of the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the Project Manager and filed in the EMPr file. At a frequency determined by the EA, the ECOs shall submit the monthly reports to the CA. At a minimum the monthly report is to cover the following:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists;
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the Bi-monthly Environmental Site Meetings.

4.14 Final environmental audits

On final completion of the rehabilitation and/or requirements of the EA a final EAR is to be prepared and submitted to the CA. The EAR must comply with Appendix 7 of the EIA Regulations.

PART B: SECTION 1: Pre-approved generic EMPr template

5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS

This section provides a pre-approved generic EMPr template with aspects that are common to the development of substation infrastructure for the transmission and distribution of electricity. There is a list of aspects identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity, and for each aspect a set of prescribed impact management outcomes and associated impact management actions have been identified. Holders of EAs are responsible to ensure the implementation of these outcomes and actions for all projects as a minimum requirement, in order to mitigate the impact of such aspects identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity.

The template provided below is to be completed by providing the information under each heading for each environmental impact management action.

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must also be duly signed and dated on each page by the contactor and the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

5.1 Environmental awareness training

Impact management outcome: All onsite staff are aware and understands the individual responsibilities in terms of this EMPr.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All staff must receive environmental awareness training prior to commencement of the activities; – The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course; – Refresher environmental awareness training is available as and when required; – All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr; – The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: a) Safety notifications; and b) No littering. – Environmental awareness training must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities; b) Mitigation measures to be implemented when carrying out specific activities; c) Emergency preparedness and response procedures; d) Emergency procedures; e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures; g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures;	**The Contractor and the contractor Environmental Officer (cEO).**	• **Compulsory Environmental Awareness Training Sessions.** • **Information Posters in accessible locations.**	**Pre-construction Phase.**	**The appointed Environmental Control Officer (ECO).**	**Monthly.**	**An Environmental Site File should be compiled and maintained by the cEO for the duration of the construction phase. This file should include proof of training, attendance registers, etc., and a copy of this file should be provided to the ECO, to append to the monthly audit reports.**

j) Fire prevention; and k) Disease prevention. – A record of all environmental awareness training courses undertaken as part of the EMPr must be available; – Educate workers on the dangers of open and/or unattended fires; – A staff attendance register of all staff to have received environmental awareness training must be available. – Course material must be available and presented in appropriate languages that all staff can understand.						

5.2 Site Establishment development

Impact management outcome: Impacts on the environment are minimised during site establishment and the development footprint are kept to demarcated development area.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management; – Location of camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through; – Sites must be located where possible on previously disturbed areas; – The camp must be fenced in accordance with ***Section 5.5: Fencing and gate installation***; and	**The Contractor.**	**Submission of relevant Method Statement(s) for approval.**	**Pre-construction Phase.**	**The appointed ECO.**	**As Method Statements are submitted, and monthly monitoring.**	**Evidence of compliance and copies of all approved Method Statements must be appended to the pre-construction audit report.**

– The use of existing accommodation for contractor staff, where possible, is encouraged.						

5.3 Access restricted areas

Impact management outcome: Access to restricted areas prevented.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identification of access restricted areas is to be informed by the environmental assessment, site walk through, and any additional areas identified during development; – Erect, demarcate and maintain a temporary barrier with clear signage around the perimeter of any access restricted area, colour coding could be used if appropriate; and – Unauthorised access and development related activity inside access restricted areas is prohibited.	**The Contractor and the ECO.**	**Demarcation and the placement of relevant signage.**	**Pre-construction Phase.**	**The ECO.**	**Monthly.**	**The ECO must monitor the site to ensure that all restricted areas have been demarcated (photographic evidence) and that construction is not taking place within these areas.**

5.4 Access roads

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities;	**The Developer Site Supervisor (DSS), the Contractor and**	**Formal access agreement.**	**Construction Phase.**	**The ECO.**	**Once-off, and monthly reporting.**	**The Contractor must provide**

– All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition – All contractors must be made aware of all these access routes. – Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense; – Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads; – In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with ***section 4.9: photographic record***; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor; – Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands – Access roads must only be developed on pre-planned and approved roads.	**the affected Landowners.**					**the ECO with a copy of the access agreement, as well as any specific (agreed-upon) conditions.**

5.5 Fencing and Gate installation

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Use existing gates provided to gain access to all parts of the area authorised for development, where possible; – Existing and new gates to be recorded and documented in accordance with **section *4.9: photographic record***; – All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner; – At points where the line crosses a fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner; – Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground;	**The Contractor.**	**Supervision.**	**Construction Phase and prior to the commencement of the Operational Phase.**	**The ECO.**	**As required and reporting monthly.**	**Photographic evidence should be included in the monthly audit reports.**

– Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate; – Original tension must be maintained in the fence wires; – All gates installed in electrified fencing must be re-electrified; – All demarcation fencing and barriers must be maintained in good working order for the duration of the development activities; – Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where applicable; – Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the landowner. – All fencing must be developed of high-quality material bearing the SABS mark; – The use of razor wire as fencing must be avoided; – Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times; – On completion of the development phase all temporary fences are to be removed; – The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.						

5.6 Water Supply Management

Impact management outcome: Undertake responsible water usage**.**

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis; – The Contractor must ensure the following: a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river;	**The Contractor.**	• **Environmental Awareness Training.** • **Monitoring and supervision.**	**Construction Phase.**	**The cEO and the ECO.**	**Daily (cEO) and monthly (ECO).**	**The cEO should report to the ECO and photographic evidence should be**

b. No damage occurs to the riverbed or banks and that the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented. – Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training. d. The use of grey water is encouraged.						**included in the monthly audit reports.**

5.7 Storm and wastewater management

Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager; – All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility; – Natural storm water runoff not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO; – Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO.	**The Contractor.**	**The implementation of the Stormwater Management Plan.**	**Construction Phase.**	**The cEO and the ECO.**	**Monthly.**	**Photographic evidence should be included in the monthly audit reports. The ECO should monitor the Contractor's compliance with the Stormwater Management Plan.**

5.8 Solid and hazardous waste management

Impact management outcome: Wastes are appropriately stored, handled and safely disposed of at a recognised waste facility**.**

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All measures regarding waste management must be undertaken using an integrated waste management approach; – Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided; – A suitably positioned and clearly demarcated waste collection site must be identified and provided; – The waste collection site must be maintained in a clean and orderly manner; – Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal; – Staff must be trained in waste segregation; – Bins must be emptied regularly; – General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company; – Hazardous waste must be disposed of at a registered waste disposal site; – Certificates of safe disposal for general, hazardous and recycled waste must be maintained.	**The Contractor.**	**The implementation of the Waste Management Plan.**	**Construction Phase.**	**The ECO.**	**Monthly.**	**Copies of the waste disposal certificates must be submitted to the ECO for inclusion in the audit reports. The ECO should monitor the Contractor's compliance with the Waste Management Plan.**

5.9 Protection of watercourses and estuaries

Impact management outcome: Pollution and contamination of the watercourse environment and or estuary erosion are prevented.

	Implementation	**Monitoring**

Impact Management Actions	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities; – In the event of a spill, prompt action must be taken to clear the polluted or affected areas; – Where possible, no development equipment must traverse any seasonal or permanent wetland – No return flow into the estuaries must be allowed and no disturbance of the Estuarine functional Zone should occur; – Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available; – There must not be any impact on the long-term morphological dynamics of watercourses or estuaries; – Existing crossing points must be favored over the creation of new crossings (including temporary access) – When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: a) Water levels during the period of construction; No altering of the bed, banks, course or characteristics of a watercourse b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must be implemented e.g. including ensuring that construction equipment is well maintained; c) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and d) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.	**The Contractor.**	**Adherence to the conditions of all General Authorisations and/or Water Use Licenses.**	**Construction Phase.**	**The ECO.**	**Monthly.**	**All conditions of the General Authorisations and/or Water Use Licenses must be included in the ECO's audit checklist. Photographic evidence should be included in the monthly audit reports.**

5.10 Vegetation clearing

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
General: – Indigenous vegetation which does not interfere with the development must be left undisturbed; – Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species; – Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing; – Permits for removal must be obtained from the relevant CA prior to the cutting or clearing of the affected species, and they must be filed; – The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals; – Trees felled due to construction must be documented and form part of the Environmental Audit Report; – Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris; – Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained; – A daily register must be kept of all relevant details of herbicide usage; – No herbicides must be used in estuaries;	**The Contractor and a Botanical Specialist (appointed to undertake Floral Search and Rescue).**	• **Applications for all necessary permits.** • **Implementation of the Alien Vegetation Management Plan.** • **Thorough Floral Search and Rescue by a suitably qualified specialist.** • **Compilation of a list of all species which require rescue and replanting, including the identification of a suitable location for replanting.** • **Monitoring.**	**Pre-Construction and Construction Phases.**	**The ECO.**	**Monthly.**	**Copies of all relevant permits must be included in the pre-construction audit report, compliance with the Alien Vegetation Management Plan must be monitored, and photographic evidence of replanting of Search and Rescue vegetation must be included in the audit reports. The ECO should provide photographic evidence of all species which have been rescued and replanted. The ECO must document all herbicide usage and ensure that a suitably qualified individual applies such herbicides (if required).**

– All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance to ***Section 5.3: Access restricted areas***. – Alien invasive vegetation must be removed and disposed of at a licensed waste management facility.						

5.11 Protection of fauna

Impact management outcome: Disturbance to fauna is minimised.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present; – The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme; – Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present; – Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds; – No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas; – No deliberate or intentional killing of fauna is allowed; – In areas where snakes are abundant, snake deterrents to be deployed on the pylons to prevent snakes climbing up, being electrocuted and causing power outages; and	**The Contractor.**	• **Implementation of the mitigation measures stipulated in the Ecological Assessment Report.** • **Relevant Faunal Permits.** • **Faunal Search and Rescue by a suitably qualified specialist.** • **Snakes which occur within the development footprints should be removed and relocated by an experienced snake handler. Snake deterrents should be**	**Pre-construction and Construction Phases.**	**The ECO.**	**Monthly.**	**The compliance with the conditions and mitigation measures must be audited by the ECO. Copies of any permits must be included in the audit reports. The ECO must ensure that any snakes, found within the development footprint, are removed by a suitably experienced snake handler. The ECO should include the type of snake(s) found in the audit reports and provide details of the removal as well as the area of relocation. Contact details of a suitably experienced**

– No Threatened or Protected species (ToPs) and/or protected fauna as listed according NEMBA (Act No. 10 of 2004) and relevant provincial ordinances may be removed and/or relocated without appropriate authorisations/permits.		**installed, where necessary.** • **Installation of bird guards and diverters, where necessary.**				**snake handler must be available on site.**

5.12 Protection of heritage resources

Impact management outcome: Impact to heritage resources is minimised.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in ***Section 5.3: Access restricted areas***; – Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance; – All work must cease immediately, if any human remains and/or other archaeological, palaeontological and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/ palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time must be allowed to remove/collect such material before development recommences.	**The Contractor.**	• **Demarcation of identified sensitive heritage resources.** • **Education in the identification of sensitive archaeological and palaeontological resources.** • **Relevant permits.**	**Pre-Construction and Construction Phases.**	**The ECO and a suitably qualified Archaeological and/or Palaeontological Specialist (if or when required).**	**Monthly (ECO) and when required (the Specialists).**	**The ECO should include photographic evidence of the demarcated site(s) in the monthly audit reports. Copies of all permits must be included in the audit reports. The ECO should advise the Contractor on the correct course of action should potentially sensitive archaeological and/or palaeontological resources be discovered within the site.**

5.13 Safety of the public

Impact management outcome: All precautions are taken to minimise the risk of injury, harm or complaints.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.; – All unattended open excavations must be adequately fenced or demarcated; – Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding; – Ensure structures vulnerable to high winds are secured; – Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.	**The Contractor.**	**Monitoring.**	**Construction Phase.**	**The cEO and the ECO.**	**As required (cEO) and monthly (ECO).**	**The cEO should compile and maintain an incident and complaints register. All incidents and complaints must be reported to the ECO and the Developer's Project Manager (DPM). The incident and complaints register must be submitted to the ECO monthly for inclusion in the audit reports.**

5.14 Sanitation

Impact management outcome: Clean and well-maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Mobile chemical toilets are installed onsite if no other ablution facilities are available; – The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances; – Where mobile chemical toilets are required, the following must be ensured:	**The Contractor.**	**The implementation of the Waste Management Plan.**	**Construction Phase.**	**The ECO.**	**As required and monthly.**	**Copies of the wase disposal certificates must be submitted to the ECO for inclusion in the audit reports. The ECO should monitor**

a) Toilets are located no closer than 100 m to any watercourse or water body; b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied, and the contents are managed in accordance with the EMPr; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; f) Toilets are serviced regularly, and the ECO must inspect toilets to ensure compliance to health standards; – A copy of the waste disposal certificates must be maintained.						**the Contractor's compliance with the Waste Management Plan as well as the general levels of sanitation on the site.**

5.15 Prevention of disease

Impact Management outcome: All necessary precautions linked to the spread of disease are taken.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Undertake environmentally friendly pest control in the camp area; – Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS; – The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area; – Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable; – Free condoms must be made available to all staff on site at central points; – Medical support must be made available; – Provide access to Voluntary HIV Testing and Counselling Services.	**The Contractor.**	• **Information posters, including contact details of suitable support.** • **Provision of medical guidance and support, where necessary.**	**Construction Phase.**	**The ECO.**	**Monthly.**	**The ECO should monitor the compliance with these management actions through verbal discussions with the Contractor and photographic evidence of information posters.**

5.16 Emergency procedures

Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; – The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation; – All staff must be made aware of emergency procedures as part of environmental awareness training; – The relevant local authority must be made aware of a fire as soon as it starts; – In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see ***Hazardous Substances section 5.17***).	**The Contractor.**	**Implementation of the Emergency Response Action Plan.**	**All phases of development.**	**The ECO.**	**Monthly.**	**The ECO should ensure that the Contractor has compiled an Emergency Response Action Plan and that emergency contact details are available at suitable locations within the construction site. Photographic evidence of the emergency contact details must be included in the audit reports.**

5.17 Hazardous substances

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible;	**The Contractor.**	• **Method Statement(s).**	**Construction Phase.**	**The cEO and the ECO.**	**Daily (cEO) and**	**The cEO and the ECO must monitor the**

– All hazardous substances must be stored in suitable containers as defined in the Method Statement; – Containers must be clearly marked to indicate contents, quantities and safety requirements; – All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers; – Bunded areas to be suitably lined with a SABS approved liner; – An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis; – All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS); – All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet; – Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available; – The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers; – The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall); – The floor of the bund must be sloped, draining to an oil separator; – Provision must be made for refueling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained; – All empty externally dirty drums must be stored on a drip tray or within a bunded area; – No unauthorised access into the hazardous substances' storage areas must be permitted; – No smoking must be allowed within the vicinity of the hazardous storage areas; – Adequate fire-fighting equipment must be made available at all hazardous storage areas;		• **Implementation of the Stormwater Management Plan.** • **Implementation of the Waste Management Plan.** • **Implementation of the Emergency Response Action Plan.**			**monthly (ECO).**	**Contractor's compliance with all relevant Method Statements, the Stormwater Management Plan, the Waste Management Plan, and the Emergency Response Action Plan (if/when required). In addition, the ECO should monitor the availability and use of spill kits and drip trays within the site. Copies of the HCS control sheet and the MSDS must be included in the audit reports.**

– Where refueling away from the dedicated refueling station is required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used; – An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times; – The responsible operator must have the required training to make use of the spill kit in emergency situations; – An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken; – In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to ***Section 5.7*** for procedures concerning ***storm- and wastewater management*** and **5*.8*** for ***solid and hazardous waste management.***						

5.18 Workshop, equipment maintenance and storage

Impact management outcome: Soil, surface water and groundwater contamination is minimised.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area; – During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts; – Leaking equipment must be repaired immediately or be removed from site to facilitate repair; – Workshop areas must be monitored for oil and fuel spills;	**The Contractor.**	• **Method Statement(s).** • **Implementation of the Stormwater Management Plan.** • **Implementation of the Waste**	**Construction Phase.**	**The cEO and the ECO.**	**Daily (cEO) and monthly (ECO).**	**The cEO and the ECO must monitor the Contractor's compliance with all relevant Method Statements, the Stormwater Management Plan, and the Waste Management. In addition, the ECO**

– Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available; – The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed; – Water drainage from the workshop must be contained and managed in accordance Section ***5.7: Storm- and wastewater management***.		**Management Plan.**				**should monitor the availability and use of spill kits and drip trays within the site.**

5.19 Batching plants

Impact management outcome: Minimise spillages and contamination of soil, surface water and groundwater**.**

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Concrete mixing must be carried out on an impermeable surface; – Batching plants areas must be fitted with a containment facility for the collection of cement laden water. – Dirty water from the batching plant must be contained to prevent soil and groundwater contamination – Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains; – A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted; – Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licenced disposal facility; – Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site; – Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to ***Section 5.20: Dust emissions***)	**The Contractor.**	• **Erect temporary fencing around the batching plant(s).** • **Method Statement(s).** • **Implementation of the Stormwater Management Plan.** • **Implementation of the Waste Management Plan.**	**Construction Phase.**	**The ECO.**	**Monthly.**	**The ECO must monitor the Contractor's compliance with the Stormwater Management Plan and the Waste Management Plan. The ECO should provide photographic evidence of the necessary temporary fencing, which is erected around batching plants. In addition, the ECO should obtain proof that excess materials have been disposed of at a registered disposal facility. Copies of any Method Statements relating to the batching**

– Any excess sand, stone and cement must be removed or reused from site on completion of construction period and disposed at a registered disposal facility; – Temporary fencing must be erected around batching plants in accordance with Section ***5.5: Fencing and gate installation***.						**plant(s) and proof of waste disposal must be included in the audit reports.**

5.20 Dust emissions

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO; – Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re- vegetated or stabilised as soon as is practically possible; – Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present; – During high wind conditions, the ECO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level; – Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind; – Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO; – Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas; – Straw stabilisation must be applied at a rate of one bale/10 m² and harrowed into the top 100 mm of top material, for all completed earthworks;	**The Contractor.**	**Implementation of impact management actions (this report) and relevant mitigation measures (Basic Assessment Report).**	**Construction Phase.**	**The cEO and ECO.**	**Daily (cEO) and monthly (ECO).**	**The compliance with these management actions, as well as the mitigation measures stipulated in the Basic Assessment Report, must be indicated in the monthly audit reports. The cEO and ECO should ensure that any complaints relating to dust are recorded in the incident and complaints register.**

– For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.						

5.21 Blasting

Impact management outcome: Impact to the environment is minimised through a safe blasting practice.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Any blasting activity must be conducted by a suitably licensed blasting contractor; and – Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	**The Contractor.**	• **Notification of the landowners and surrounding landowners.** • **Blasting activities must only occur within the authorised (EA) times.**	**Construction Phase.**	**The ECO.**	**Limited to the specific blasting times (if any blasting is required).**	**The ECO must audit the blasting activities to ensure that blasting is undertaken in accordance with all relevant legislation, guidelines, and by-laws. Proof of landowner notification must be included in the audit reports. The ECO should ensure that any complaints relating to blasting are recorded in the incident and complaints register.**

5.22 Noise

Impact Management outcome: Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only;	**The Contractor.**	• **Monitor the construction workers' adherence**	**Construction Phase.**	**The cEO and ECO.**	**Daily (cEO) and monthly (ECO).**	**The noise levels must be monitored daily by the cEO, and the cEO must**

– All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained; – Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers; – Develop a Code of Conduct for the construction phase in terms of behaviour of construction staff. Operating hours as determined by the environmental authorisation are adhered to during the development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.		**to the Code of Conduct.** • **No construction activities may take place outside of the authorised (EA) times.** • **Ensure that vehicles and machinery are serviced and maintained regularly to reduce noise.**				**report on these levels to the ECO for inclusion in the monthly audit reports. The ECO must monitor the adherence of construction workers to the Code of Conduct. The ECO should ensure that any complaints relating to noise are recorded in the incident and complaints register.**

5.23 Fire prevention

Impact management outcome: Prevention of uncontrollable fires.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Designate smoking areas where the fire hazard could be regarded as insignificant; – Firefighting equipment must be available on all vehicles located on site; – The local Fire Protection Agency (FPA) must be informed of construction activities; – Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site; – Two-way swop of contact details between ECO and FPA.	**The Contractor and the cEO.**	• **Establishment of designated smoking areas.** • **Availability of fire-fighting equipment at the site camp.** • **Posters containing emergency contact details.** • **Implementation of the Emergency Response Action Plan.**	**Construction Phase.**	**The ECO.**	**Monthly.**	**The ECO should inspect the site and liaise with the cEO and the Contractor regarding fire prevention precautions which are in place within site. The ECO should review the Emergency Response Action Plan and provide photographic evidence of the designated smoking areas, posters which contain emergency contact details and the available fire-fighting equipment. The ECO should ensure that any incidents relating to fire are recorded in the incident and complaints register and reported to the DPM.**

5.24 Stockpiling and stockpile areas

Impact management outcome: Reduce erosion and sedimentation as a result of stockpiling.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses, watercourses and water bodies; – All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods; – Topsoil stockpiles must not exceed 2 m in height; – During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.); – Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.	**The Contractor.**	**Supervision of the implementation of the management actions and the mitigation measures.**	**Construction Phase.**	**The cEO and the ECO.**	**Daily (cEO) and monthly (ECO).**	**The cEO and ECO should monitor the stockpiling of materials. The ECO should include photographic evidence of the material stockpiles and stockpile areas in the audit reports. The cEO should report any growth of alien vegetation on the stockpiles to the ECO, as well as any signs of erosion or sedimentation which occur as a result of the material stockpiles. The ECO should report on the condition of the material stockpiles in the audit reports and recommend additional mitigation measures and/or remedial actions should these be required.**

5.25 Civil works

Impact management outcome: Impact to the environment minimised during civil works to create the substation terrace.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

– Where terracing is required, topsoil must be collected and retained for the purpose of re-use later to rehabilitate disturbed areas not covered by yard stone; – Areas to be rehabilitated include terrace embankments and areas outside the high voltage yards; – Where required, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled; – These areas can be stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; – Rehabilitation of the disturbed areas must be managed in accordance with ***Section 5.35: Landscaping and rehabilitation***; – All excess spoil generated during terracing activities must be disposed of in an appropriate manner and at a recognised landfill site; and – Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes.	**The Contractor.**	• **Compliance with the conditions of the EA and EMPrs.** • **Implementation of the Erosion Management Plan.** • **Implementation of the Stormwater Management Plan.** • **Implementation of the Alien Vegetation Management Plan.** • **Implementation of the Waste Management Plan.**	**Construction, Post-construction, and Operational Phases.**	**The cEO and the ECO.**	**Daily (cEO) and monthly (ECO).**	**The cEO and ECO should monitor the site landscaping and rehabilitation against all required conditions. Photographic evidence should be provided in the audit reports as well as the recommendation of additional mitigation measures, where necessary.**

5.26 Excavation of foundation, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs as a result of excavation of foundation, cable trenching and drainage systems.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a licensed landfill site, if not used for backfilling purposes; – Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes;	**The Contractor.**	• **Method Statement(s).** • **Compliance with the conditions of the EA and EMPrs.** • **Implementation of the Erosion Management Plan.**	**Construction Phase.**	**The cEO and the ECO.**	**Daily (cEO) and monthly (ECO).**	**Copies of the waste disposal certificates must be submitted to the ECO for inclusion in the audit reports. The ECO should monitor the Contractor's compliance with the relevant**

– Management of equipment for excavation purposes must be undertaken in accordance with ***Section 5.18: Workshop, equipment maintenance and storage***; and – Hazardous substances spills from equipment must be managed in accordance with ***Section 5.17: Hazardous substances***.		• **Implementation of the Stormwater Management Plan.** • **Implementation of the Waste Management Plan.**				**conditions and Management Plans.**

5.27 Installation of foundations, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs during the installation of foundation, cable trenching and drainage system.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Batching of cement to be undertaken in accordance with **Section *5.19: Batching plants***; and – Residual solid waste must be disposed of in accordance with **Section *5.8: Solid waste and hazardous management***.	**The Contractor.**	• **Method Statement(s).** • **Implementation of the Waste Management Plan.** • **Implementation of the Erosion Management Plan.** • **Implementation of the Stormwater Management Plan.**	**Construction Phase**	**The cEO and the ECO.**	**Daily.**	**Either the cEO or the ECO should be present during the installation of foundations and cable trenching to ensure that the management actions are implemented and to provide photographic evidence for inclusion in the audit reports.**

5.28 Installation of equipment (circuit breakers, current Transformers, Isolators, Insulators, surge arresters, voltage transformers, earth switches)

Impact management outcome: No environmental degradation occurs as a result of installation of equipment.

	Implementation	**Monitoring**

Impact Management Actions	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Management of dust must be conducted in accordance with Section ***5. 20: Dust emissions***; – Management of equipment used for installation must be conducted in accordance with Section **5*.18: Workshop, equipment maintenance and storage***; – Management hazardous substances and any associated spills must be conducted in accordance with Section ***5.17: Hazardous substances***; and – Residual solid waste must be recycled or disposed of in accordance with ***Section 5.8: Solid waste and hazardous management***.	**The Contractor.**	• **Method Statement(s).** • **Implementation of the Waste Management Plan.** • **Implementation of the Erosion Management Plan.** • **Implementation of the Stormwater Management Plan.**	**Construction Phase**	**The cEO and the ECO.**	**Daily (cEO) and monthly (ECO).**	**Either the cEO or the ECO should be present during the installation of equipment to ensure that the management actions are implemented and to provide photographic evidence for inclusion in the audit reports.**

5.29 Steelwork Assembly and Erection

Impact management outcome: No environmental degradation occurs as a result of steelwork assembly and erection.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– During assembly, care must be taken to ensure that no wasted/unused materials are left on site e.g. bolts and nuts – Emergency repairs due to breakages of equipment must be managed in accordance with ***Section 5. 18: Workshop, equipment maintenance and storage*** and ***Section 5.16: Emergency procedures***.	**The Contractor.**	• **Supervision.** • **Method Statement(s).** • **Implementation of the Waste Management Plan.** • **Implementation of the Emergency Response Action Plan.**	**Construction Phase**	**The cEO and the ECO.**	**Daily (cEO) and monthly (ECO).**	**Either the cEO or the ECO should be present during the steelwork assembly and erection to ensure that the management actions are implemented and to provide photographic evidence for inclusion in the audit reports.**

5.30 Cabling and Stringing

Impact management outcome: No environmental degradation occurs as a result of stringing.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Residual solid waste (off cuts etc.) shall be recycled or disposed of in accordance with **Section *6.8: Solid waste and hazardous Management***; – Management of equipment used for installation shall be conducted in accordance with **Section 5*.18: Workshop, equipment maintenance and storage***; – Management hazardous substances and any associated spills shall be conducted in accordance with ***Section 5.17: Hazardous substances***.	**The Contractor and the cEO.**	• **Supervision.** • **Method Statement(s).** • **Implementation of the Waste Management Plan.** • **Implementation of the Emergency Response Action Plan.**	**Construction Phase.**	**The cEO and the ECO.**	**Daily (cEO) and once-off (ECO).**	**The cEO should monitor all cabling and stringing and provide feedback on the compliance with the management actions and the conditions to the ECO for inclusion in the audit reports.**

5.31 Testing and Commissioning (all equipment testing, earthing system, system integration)

Impact management outcome: No environmental degradation occurs as a result of Testing and Commissioning.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Residual solid waste must be recycled or disposed of in accordance with ***Section 5.8: Solid waste and hazardous management***.	**The Contractor.**	**Implementation of the Waste Management Plan.**	**Construction Phase.**	**The ECO.**	**Once-off.**	**The ECO should inspect the site during testing and commissioning and provide feedback on the compliance with the management actions and the conditions in the audit reports. Photographs should be taken of the equipment and the condition of the site and immediate surrounds.**

5.32 Socio-economic

Impact management outcome: enhanced socio-economic development.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Develop and implement communication strategies to facilitate public participation; – Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process; – Sustain continuous communication and liaison with neighboring owners and residents – Create work and training opportunities for local stakeholders; and – Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to local farmers.	**The Contractor and the DSS.**	**Communication and management.**	**All phases of development.**	**The cEO and the ECO.**	**Daily (cEO) and monthly (ECO).**	**The cEO should compile and maintain an incident and complaints register. This register should be submitted to the ECO on a monthly basis. Incidents and complaints should be reported to the ECO within 48 hours and the ECO should report all incidents to the DSS.**

5.33 Temporary closure of site

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in ***sections 5.17: Hazardous substances and 5.18: Workshop, equipment maintenance and storage***; – Hazardous storage areas must be well ventilated;	**The Contractor and the DSS.**	• **Supervision and management.** • **The implementation of the conditions**	**All phases of development.**	**The ECO and the DPM.**	**Whenever temporary site closure occurs.**	**The ECO should undertake a site inspection prior to the temporary closure of the site.**

– Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service; – Emergency and contact details displayed must be displayed; – Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel; – Night hazards such as reflectors, lighting, traffic signage etc. must have been checked; – Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.; – Structures vulnerable to high winds must be secured; – Wind and dust mitigation must be implemented; – Cement and materials stores must have been secured; – Toilets must have been emptied and secured; – Refuse bins must have been emptied and secured; – Drip trays must have been emptied and secured.		**of this EMPr and all relevant EMPrs.**				**The ECO should include the temporary site closure dates as well as photographic evidence of the condition of the site in the audit reports.**

5.34 Dismantling of old equipment

Impact management outcome: Impact to the environment to be minimised during the dismantling, storage and disposal of old equipment commissioning.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All old equipment removed during the project must be stored in such a way as to prevent pollution of the environment; – Oil containing equipment must be stored to prevent leaking or be stored on drip trays; – All scrap steel must be stacked neatly, and any disused and broken insulators must be stored in containers;	**The Contractor.**	**The implementation of the Waste Management Plan.**	**Construction Phase.**	**The ECO.**	**Monthly.**	**Copies of the waste disposal certificates must be submitted to the ECO for inclusion in the audit reports. The**

– Once material has been scrapped and the contract has been placed for removal, the disposal Contractor must ensure that any equipment containing pollution causing substances is dismantled and transported in such a way as to prevent spillage and pollution of the environment; – The Contractor must also be equipped to contain and clean up any pollution causing spills; and – Disposal of unusable material must be at a licensed waste disposal site.						**ECO should monitor the Contractor's compliance with the Waste Management Plan.**

5.35 Landscaping and rehabilitation

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed of to a registered waste site; – All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983 – All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983; – Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition; – Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners; – Rehabilitation of access roads outside of farmland; – Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition;	**The Contractor, a suitably qualified Botanical Specialist, and the DSS.**	• **Compliance with the conditions of the EA and EMPrs.** • **Implementation of the Erosion Management Plan.** • **Implementation of the Stormwater Management Plan.** • **Implementation of the Alien Vegetation Management Plan.** • **Implementation of the Waste Management Plan.**	**Construction, Post-construction, and Operational Phases.**	**The cEO and the ECO.**	**Daily (cEO) and monthly (ECO).**	**The cEO and ECO should monitor the site landscaping and rehabilitation against all required conditions. Photographic evidence should be provided in the audit reports as well as the recommendation of additional mitigation measures, where necessary.**

– Stockpiled topsoil must be used for rehabilitation (refer to ***Section 5.24: Stockpiling and stockpiled areas***); – Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion; – Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed; – Subsoil must be ripped before topsoil is placed; – The rehabilitation must be timed so that rehabilitation can take place at the optimal time for vegetation establishment; – Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled; – Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; – Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150 mm of topsoil. – Where required, re-vegetation including hydro-seeding can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen; b) Pioneer species are included; c) Species chosen must be indigenous to the area with the seeds used coming from the area; d) Root systems must have a binding effect on the soil; e) The final product must not cause an ecological imbalance in the area						

6 ACCESS TO THE GENERIC EMPr

Once completed and signed, to allow the public access to the generic EMPr, the holder of the EA must make the EMPr available to the public in accordance with the requirements of Regulation 26(h) of the EIA Regulations.

PART B: SECTION 2

7 SITE SPECIFIC INFORMATION AND DECLARATION

7.1 Sub-section 1: contact details and description of the project

7.1.1 Details of the applicant:

Name of applicant: **Mulilo Newcastle Wind Power (Pty) Ltd.**

Tel No: **+27 (0)21 685 3240**

Fax No: **N/A**

Postal Address: **21st Floor, Portside, 5 Buitengracht Street, Cape Town, 8001**

Physical Address: **21st Floor, Portside, 5 Buitengracht Street, Cape Town, 8001**

7.1.2 Details and expertise of the EAP:

Name of environmental consultancy: **Coastal and Environmental Services (Pty) Ltd. (t/a "CES")**

Name of EAP: **Dr Alan Carter**

Assisting EAP:

Tel No: **+27 (0)43 726 7809**

Fax No: **+27 (0)86 410 7822**

E-mail address: **a.carter@cesnet.co.za | Sinazo.Nyudwana@cesnet.co.za**

Expertise of the EAP (Curriculum Vitae included): **Yes, please see Appendix 2.**

7.1.3 Project name: **Proposed Mulilo Newcastle Wind Power Grid Connection 132kV Overhead Line, KwaZulu Natal**

7.1.4 Description of the project:

The proposed Mulilo Newcastle Wind Power (MNWP) Grid Connection (Pty) Ltd project includes a 132 kV onsite switching station and a single or double circuit 132 kV overhead transmission line with a total length of up to 23 km, connecting to an existing Substation near Newcastle.

Infrastructure Component Descriptions

1. **Overhead Power Line (OHPL)**
   a. **132kV Overhead powerline to be constructed.**
   b. **300m wide corridor to be assessed.**
   c. **Single circuit or double circuit options should be catered for.**
   d. **25-31m high OHL towers could be used.**
   e. **Combination of monopole guyed and self-supporting structures to be used. If technically necessary, lattice structures may also be required to be used where applicable.**

f. **Once constructed the OHPL will be handed back to Eskom and Eskom standards will be followed.**

g. **A servitude of 31m wide would ultimately be registered including a 4-6 m wide access road for construction and maintenance.**

h. **Generic EMP's to be used.**

2. **On-site 132kV Switching Substation**

   a. **To be handed over to Eskom after construction**

   b. **Located adjacent to the windfarm on site IPP substatio**

Infrastructure Footprints

Component	Construction Footprint	Final Footprint after Rehabilitation
Overhead Transmission Line	**Up to 40 km length** **40 000 m/250 m = 160 monopoles** **160 x 0.0072 ha = 1.152 ha**	**Up to 40 km length** **40 000 m/250 m = 160 monopoles** **160 x 0.0072 ha = 1.152 ha**
Total servitude	**Up to 40 000 m x 31 m = 124 ha**	**Up to 40 000 m x 31 m = 124 ha**
Maintenance tracks	**Up to 40 km length** **4 m width** **Which equates to 16 ha**	**Up to 40 km length** **4 m width** **Which equates to 16 ha**
On-site Switching Substation	**Up to 1 ha**	**Up to 1 ha**

The properties along the OHPL route from the Proposed Newcastle WEF Substation (West) to Incandu substation or AMSA, Newcastle (East) are listed below:

<u>MNWP Grid Connection - Preferred Route</u>

Begin – Proposed Mulilo Newcastle Wind Power WEF substation (applied for in the Mulilo Newcastle Wind Power WEF in a separate application submitted to the National Department of Forestry, Fisheries and the Environment (DFFE))

Farm 9439

Farm 2901 Remaining Extent

Farm 9389

Farm 2901 Portion 1

Farm 3305 Portion 6

Farm 2967 Portion 3

Farm 16524

Farm 2987 Remaining Extent

Farm 16423 OR Farm 9481 Portion 1 (Same property)

Farm 3344 Portion 12

Farm 9481 Portion 5

Farm 9481 Portion 3

Farm 3344 Portion 11 OR Farm 3344 Remaining Extent (Same property)

Farm 8591 Portion 1

Farm 4307 Remaining Extent

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 27

Farm 4306 Portion 39

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 13

Farm 4306 Portion 6 Remaining Extent (RE/6/4306)

Farm 4306 Portion 14

Farm 4306 Portion 29

Farm 4306 Portion 1 Remaining Extent

Farm 4306 Portion 40

End – Incandu Substation, Newcastle

Farms highlighted in red indicate the differences to the preferred alternative*

MNWP Grid Connection - Alternative 1

Begin – Proposed Newcastle WEF substation (applied for in the Mulilo Newcastle Wind Power WEF in a separate application submitted to the National Department of Forestry, Fisheries and the Environment (DFFE))

Farm 9439

Farm 2901 Remaining Extent

Farm 9389

Farm 2901 Portion 1

Farm 3305 Portion 6

Farm 2967 Portion 3

Farm 16524

Farm 16423 OR Farm 9481 Portion 1 (Same Property)

Farm 2271 Portion 1

Farm 2271 Remaining Extent

Farm 9110 Remaining Extent

Farm 9481 Portion 5

Farm 8590

Farm 8591 Remaining Extent

Farm 8591 Portion 1

Farm 4314

Farm 4308 Portion 35 Remaining Extent (RE/35/4308)

Farm 4307 Remaining Extent

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 27

Farm 4306 Portion 39

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 13

Farm 4306 Portion 6 Remaining Extent (RE/6/4306)

Farm 4306 Portion 14

Farm 4306 Portion 29

Farm 4306 Portion 1 Remaining Extent

Farm 4306 Portion 40

Farm 17680 Remaining Extent

End – AMSA, Newcastle

MNWP Grid Connection - Alternative 2

Begin – Proposed Newcastle WEF substation (applied for in the Mulilo Newcastle Wind Power WEF in a separate application submitted to the National Department of Forestry, Fisheries and the Environment (DFFE))

Farm 9439

Farm 2901 Remaining Extent

Farm 9389

Farm 2901 Portion 1

Farm 3305 Portion 6

Farm 2967 Portion 3

Farm 16524

Farm 2987 Remaining Extent

Farm 16423 OR Farm 9481 Portion 1 (Same property)

Farm 3344 Portion 12

Farm 9481 Portion 5

Farm 9481 Portion 3

Farm 3344 Portion 11 OR Farm 3344 Remaining Extent (Same property)

Farm 8591 Portion 1

Farm 4307 Remaining Extent

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 27

Farm 4306 Portion 39

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 13

Farm 4306 Portion 6 Remaining Extent (RE/6/4306)

Farm 4306 Portion 14

Farm 4306 Portion 29

Farm 4306 Portion 1 Remaining Extent

Farm 4306 Portion 40

Farm 17680 Remaining Extent

Buffer zone enters Farm 17680 Remaining Extent OR Farm 4306 Portion 20 (same property) *

End – AMSA, Newcastle

MNWP Grid Connection - Alternative 3

Begin – Proposed Newcastle WEF substation (applied for in the Mulilo Newcastle Wind Power WEF in a separate application submitted to the National Department of Forestry, Fisheries and the Environment (DFFE))

Farm 9439

Farm 2901 Remaining Extent

Farm 9389

Farm 2901 Portion 1

Farm 3305 Portion 6

Farm 2967 Portion 3

Farm 16524

Farm 2987 Remaining Extent

Farm 16423 OR Farm 9481 Portion 1 (Same property)

Farm 3344 Portion 12

Farm 9481 Portion 5

Farm 9481 Portion 3

Farm 8590

Farm 8591 Remaining Extent

Farm 8591 Portion 1

Farm 4307 Remaining Extent

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 27

Farm 4306 Portion 39

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 13

Farm 4306 Portion 6 Remaining Extent (RE/6/4306)

Farm 4306 Portion 14

Farm 4306 Portion 29

Farm 4306 Portion 1 Remaining Extent

Farm 4306 Portion 40

Farm 17680 Remaining Extent

End – AMSA, Newcastle

MNWP Grid Connection - Alternative 4

Begin – Proposed Newcastle WEF substation (applied for in the Mulilo Newcastle Wind Power WEF in a separate application submitted to the National Department of Forestry, Fisheries and the Environment (DFFE))

Farm 9439

Farm 2901 Remaining Extent

Farm 9389

Farm 2901 Portion 1

Farm 3305 Portion 6

Farm 2967 Portion 3

Farm 16524

Farm 2987 Remaining Extent

Farm 16423 OR Farm 9481 Portion 1 (Same property)

Farm 3344 Portion 12

Farm 9481 Portion 5

Farm 3344 Portion 9 (Buffer enters farm area)

Farm 3344 Portion 10 Remaining extent (Buffer enters farm area)

Farm 3344 Portion 11 OR Farm 3344 Remaining Extent (Same property)

Farm 8591 Portion 1

Farm 4314 (Buffer enters farm area)

Farm 4308 Portion 35 Remaining Extent

Farm 4307 Remaining Extent

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 27

Farm 4306 Portion 39

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 13

Farm 4306 Portion 6 Remaining Extent (RE/6/4306)

Farm 4306 Portion 14

Farm 4306 Portion 29

Farm 4306 Portion 1 Remaining Extent

Farm 4306 Portion 40

Farm 17680 Remaining Extent

End – AMSA, Newcastle

MNWP Grid Connection - Alternative 5

Begin – Proposed Newcastle WEF substation (applied for in the Mulilo Newcastle Wind Power WEF in a separate application submitted to the National Department of Forestry, Fisheries and the Environment (DFFE))

Farm 9439

Farm 2901 Remaining Extent

Farm 9389

Farm 2901 Portion 1

Farm 3305 Portion 6

Farm 2967 Portion 3

Farm 16524

Farm 2987 Remaining Extent

Farm 16423 OR Farm 9481 Portion 1 (Same property)

Farm 3344 Portion 12

Farm 9481 Portion 5

Farm 3344 Portion 9 (Buffer enters farm area)

Farm 3344 Portion 10 Remaining extent (Buffer enters farm area)

Farm 3344 Portion 11 OR Farm 3344 Remaining Extent (Same property)

Erf number 9432

Erf number 9466

Farm 8591 Portion 1

Farm 4307 Remaining Extent

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 27

Farm 4306 Portion 39

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 13

Farm 4306 Portion 6 Remaining Extent (RE/6/4306)

Farm 4306 Portion 14

Farm 4306 Portion 29

Farm 4306 Portion 1 Remaining Extent

Farm 4306 Portion 40 (Buffer enters farm area)

End – Incandu Substation, Newcastle

MNWP Grid Connection - Alternative 6

Begin – Proposed Newcastle WEF substation (applied for in the Mulilo Newcastle Wind Power WEF in a separate application submitted to the National Department of Forestry, Fisheries and the Environment (DFFE))

Farm 9439

Farm 2901 Remaining Extent

Farm 9389

Farm 2901 Portion 1

Farm 3305 Portion 6

Farm 2967 Portion 3

Farm 16524

Farm 16423 OR Farm 9481 Portion 1 (Same Property)

Farm 2271 Portion 1

Farm 2271 Remaining Extent

Farm 9110 Remaining Extent

Farm 9481 Portion 5

Farm 8590

Farm 8591 Remaining Extent

Farm 8591 Portion 1

Farm 4314

Farm 4308 Portion 35 Remaining Extent (RE/35/4308)

Farm 4307 Remaining Extent

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 27

Farm 4306 Portion 39

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 13

Farm 4306 Portion 6 Remaining Extent (RE/6/4306)

Farm 4306 Portion 14

Farm 4306 Portion 29

Farm 4306 Portion 1 Remaining Extent

Farm 4306 Portion 40 (Buffer enters farm area)

End – Incandu Substation, Newcastle

MNWP Grid Connection - Alternative 7

Begin – Proposed Mulilo Newcastle Wind Power WEF substation (applied for in the Mulilo Newcastle Wind Power WEF in a separate application submitted to the National Department of Forestry, Fisheries and the Environment (DFFE))

Farm 9439

Farm 2901 Remaining Extent

Farm 9389

Farm 2901 Portion 1

Farm 3305 Portion 6

Farm 16524

Farm 2967 Portion 3 (Corridor)

Farm 2987 Remaining Extent (Corridor)

Farm 16423 OR Farm 9481 portion 1 (same property)

Farm 9481 Portion 5

Farm 3344 Portion 12

Farm 3344 Portion 11 OR farm 3344 Remaining Extent (same property)

Farm 3344 Portion 9

Farm 3344 Portion 10 of Remaining Extent

*Government land

Erf number 9432

Erf number 9466

Farm 8591 Portion 1

Farm 4307 Remaining Extent

Farm 4306 Portion 1 of Remaining Extent (RE/1/4306)*

Farm 4306 Portion 27

Farm 4306 Portion 39

Farm 4306 Portion 1 of Remaining Extent (RE/1/4306)*

Farm 4306 Portion 13

Farm 4306 Portion 6 of Remaining Extent (RE/6/4306)

Farm 4306 Portion 14

Farm 4306 Portion 29

Farm 4306 Portion 1 of Remaining Extent (RE/1/4306)*

Farm 4306 Portion 40

Farm 17680 Remaining Extent

End – AMSA, Newcastle

MNWP Grid Connection - Alternative 8

Begin – Proposed Newcastle WEF substation (applied for in the Mulilo Newcastle Wind Power WEF in a separate application submitted to the National Department of Forestry, Fisheries and the Environment (DFFE))

Farm 9439

Farm 2901 Remaining Extent

Farm 9389

Farm 2901 Portion 1

Farm 3305 Portion 6

Farm 2967 Portion 3

Farm 16524

Farm 2987 Remaining Extent

Farm 16423 OR Farm 9481 Portion 1 (Same property)

Farm 3344 Portion 12

Farm 9481 Portion 5

Farm 9481 Portion 3

Farm 8590

Farm 8591 Remaining Extent

Farm 8591 Portion 1

Farm 4307 Remaining Extent

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 27

Farm 4306 Portion 39

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 13

Farm 4306 Portion 6 Remaining Extent (RE/6/4306)

Farm 4306 Portion 14

Farm 4306 Portion 29

Farm 4306 Portion 1 Remaining Extent

Farm 4306 Portion 40 (Buffer enters farm area)*

End – Incandu Substation, Newcastle

MNWP Grid Connection - Alternative 9

Begin – Proposed Newcastle WEF substation (applied for in the Mulilo Newcastle Wind Power WEF in a separate application submitted to the National Department of Forestry, Fisheries and the Environment (DFFE))

Farm 9439

Farm 2901 Remaining Extent

Farm 9389

Farm 2901 Portion 1

Farm 3305 Portion 6

Farm 2967 Portion 3

Farm 16524

Farm 2987 Remaining Extent

Farm 16423 OR Farm 9481 Portion 1 (Same property)

Farm 3344 Portion 12

Farm 9481 Portion 5

Farm 3344 Portion 9 (Buffer enters farm area)

Farm 3344 Portion 10 Remaining extent (Buffer enters farm area)

Farm 3344 Portion 11 OR Farm 3344 Remaining Extent (Same property)

Erf number 9432

Erf number 9466

Farm 8591 Portion 1

Farm 4314 (Buffer enters farm area)

Farm 4308 Portion 35 Remaining Extent

Farm 4307 Remaining Extent

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 27

Farm 4306 Portion 39

Farm 4306 Portion 1 Remaining Extent (RE/1/4306)

Farm 4306 Portion 13

Farm 4306 Portion 6 Remaining Extent (RE/6/4306)

Farm 4306 Portion 14

Farm 4306 Portion 29

Farm 4306 Portion 1 Remaining Extent

Farm 4306 Portion 40 (Buffer enters farm area)

End – Incandu Substation, Newcastle

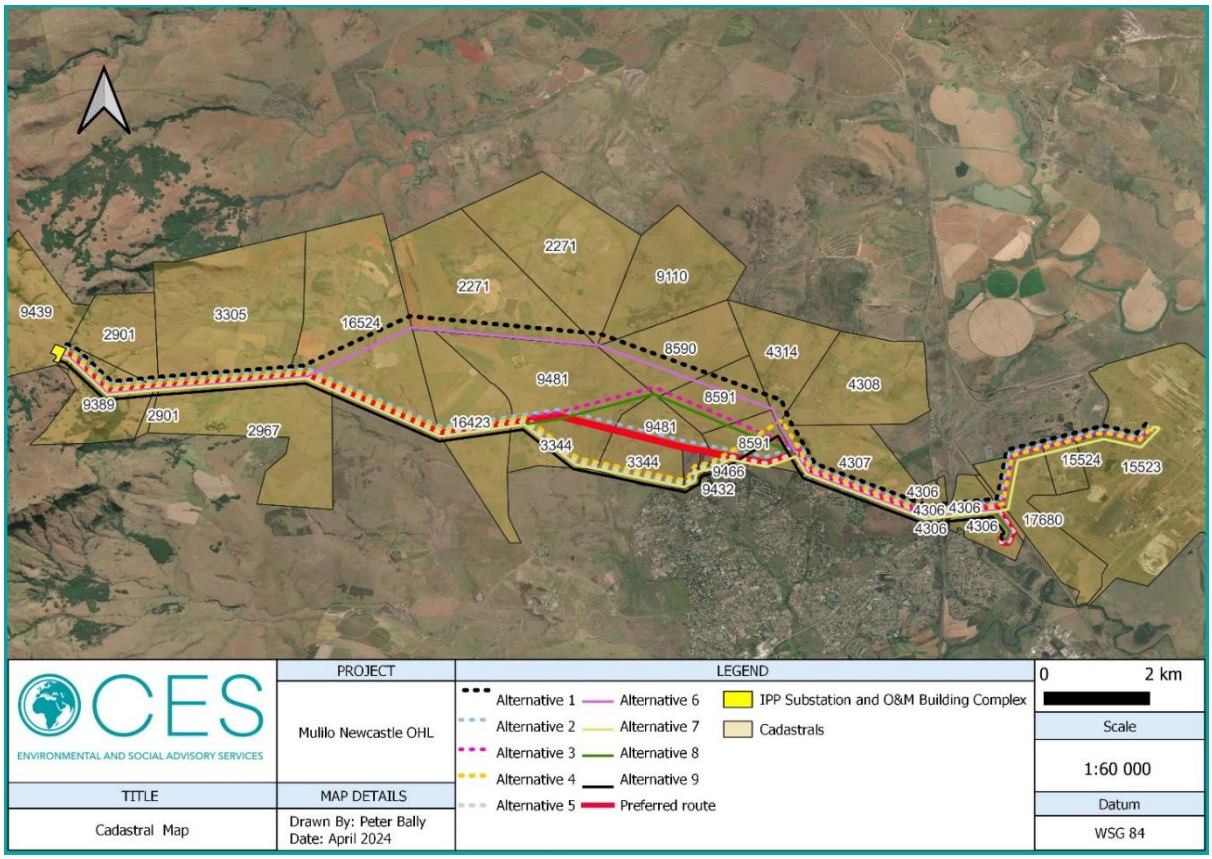


Figure 1: Layout Map of the Proposed Mulilo Newcastle Wind Power Grid Connection 132kV OHL.

7.1.5 Project location:

Table 2: 21-Digit Surveyor General (SG) Codes of the affected properties.

FARM NAME	21 DIGIT NUMBER	PORTION/FARM NO.	PROVINCE
Brack Hoek	N0HS00000000227100000	RE/2271	KwaZulu Natal
Brack Hoek	N0HS00000000227100001	1/2271	KwaZulu Natal
Glendower	N0HS00000000290100000	RE/2901	KwaZulu Natal
Glendower	N0HS00000000290100001	1/2901	KwaZulu Natal
Roose BooM	N0HS00000000330500006	6/3305	KwaZulu Natal
Northdown	N0HS00000000430600001	RE/1/4306	KwaZulu Natal
Northdown	N0HS00000000430600001	RE/1/4306	KwaZulu Natal
Northdown	N0HS00000000430600001	RE/1/4306	KwaZulu Natal
Northdown	N0HS00000000430600006	RE/6/4306	KwaZulu Natal
Northdown	N0HS00000000430600013	13/4306	KwaZulu Natal
Northdown	N0HS00000000430600014	14/4306	KwaZulu Natal
Northdown	N0HS00000000430600027	27/4306	KwaZulu Natal
Northdown	N0HS00000000430600029	29/4306	KwaZulu Natal
Northdown	N0HS00000000430600039	39/4306	KwaZulu Natal
Northdown	N0HS00000000430600040	40/4306	KwaZulu Natal
Parksville	N0HS00000000430700000	RE/4307	KwaZulu Natal
Stony Kloof	N0HS00000000431400000	4314	KwaZulu Natal
Inniskilling	N0HS00000000859000000	8590	KwaZulu Natal
Highton	N0HS00000000859100000	RE/8591	KwaZulu Natal
Highton	N0HS00000000859100001	1/8591	KwaZulu Natal
Erin	N0HS00000000911000000	RE/9110	KwaZulu Natal
Paardeplaat	N0HS00000000938900000	9389	KwaZulu Natal
Cliffdale	N0HS00000000943900000	9439	KwaZulu Natal
Unknown	N0HS00000000296700003	3/2967	KwaZulu Natal
Unknown	N0HS00000000298700000	RE/2987	KwaZulu Natal
Lentvlei	N0HS00000001652400000	16524	KwaZulu Natal
Buffalo River	N0HS00000000430800035	RE/35/4308	KwaZulu Natal
Iscor	N0HS00000001768000000	RE/17680	KwaZulu Natal
Iscor	N0HS00000001768000000	RE/17680	KwaZulu Natal

Tweefontein	N0HS00000001642300000	16423	KwaZulu Natal
Gordan	N0HS00000000948100005	5/9481	KwaZulu Natal
Gordan	N0HS00000000948100003	3/9431	KwaZulu Natal
Tweefontein	N0HS00000000334400009	9/3344	KwaZulu Natal
Tweefontein	N0HS00000000334400010	RE/10/3344	KwaZulu Natal
Tweefontein	N0HS00000000334400011	11/3344	KwaZulu Natal
Tweefontein	N0HS00000000334400012	12/3344	KwaZulu Natal
	N0HS02210001552400000	Erf 9432	KwaZulu Natala
	N0HS02210001552300000	Erf 9466	KwaZulu Natal

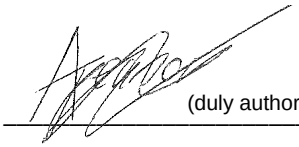
7.2 Sub-section 2: Development footprint site map

This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. The sensitivity map must be prepared from the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g. threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features within 50 m from the development footprint.

Please see Appendix 3 for the National Screening Tool Report Maps of the proposed WEF substation.

7.3 Sub-section 3: Declaration

The proponent/applicant or holder of the EA affirms that he/she will abide and comply with the prescribed impact management outcomes and impact management actions as stipulated in part B: section 1 of the generic EMPr and have the understanding that the impact management outcomes and impact management actions are legally binding. The proponent/applicant or holder of the EA affirms that he/she will provide written notice to the CA 14 day prior to the date on which the activity will commence of commencement of construction to facilitate compliance inspections.

Signature Proponent/applicant/ holder of EA  (duly authorised on behalf of Mulilo Newcastle Wind Power (Pty)Ltd

Date: 20/08/2024

7.4 Sub-section 4: amendments to site specific information (Part B; section 2)

Should the EA be transferred to a new holder, Part B: Section 2 must be completed by the new holder and submitted with the application for an amendment of the EA in terms of Regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted for an amendment to an environmental authorisation will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

PART C

8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and actions, not included in the pre-approved generic EMPr template, to manage impacts, those impact management outcomes and impact management actions must be included in this section. These specific management controls must be referenced spatially and must include impact management outcomes and impact management actions. The management controls including impact management outcomes and impact management actions must be presented in the format of the pre-approved generic EMPr template. This applies only to additional impact management outcomes and impact management actions that are necessary.

If Part C is applicable to the development as authorised in the EA, it is required to be submitted to the CA together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding.

This section will **not be required** should the site contain no specific environmental sensitivities or attributes.

SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES FOR THE MNWP GRID CONNECTION AND ASSOCIATED INFRASTRUCTURE

There are specific environmental attributes/sensitivities which are present on site and where specific mitigation was proposed by the specialists.

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
PLANNING AND DESIGN PHASE	
GENERAL IMPACTS	
STORAGE OF HAZARDOUS SUBSTANCE (ALL ALTERNATIVES)	• All hazardous substances such as paints, diesel and cement must be stored in a bunded area with an impermeable surface beneath them. • Cement mixing must be conducted at a single location which must be centrally located, where practical. This mixing must take place on an impermeable surface, and dried waste cement must be disposed of with building rubble at a suitably registered disposal site.

ENVIRONMENTAL LEGISLATION AND POLICY COMPLIANCE	• Ensure that all relevant legislation and policy is consulted and ensure that the project is compliant with such legislation and policy.
	• These must include (but not limited to):
	  ○ Local and District Spatial Development Frameworks
	  ○ Local Municipality bylaws
	• In addition, planning for the construction and operation of the proposed overhead line and associated grid infrastructure must consider available best practice guidelines.

STORMWATER MANAGEMENT AND EROSION	• Monopoles/ steel lattice structures should be placed at least 32 m away from rivers, tributaries and drainage lines. • A Stormwater Management Plan must be designed prior to the commencement of the construction phase. • The plan must also include management mitigation measures for water pollution, wastewater management and the management of surface erosion e.g. by considering the applicability of contouring, etc. • An Erosion Management Plan must be designed and implemented to ensure minimal impact.
MANAGEMENT OF GENERAL WASTE	• Develop and implement a Waste Management Plan for handling waste. • During the planning and design phase, a suitable area should be designated to the temporary storage of waste prior to disposal at a licenced facility. • General Waste must be disposed of at a registered landfill site.
SCHEDULING OF CONSTRUCTION	• Wherever possible, construction activities must be undertaken during the driest part of the year to minimize downstream sedimentation due to excavation, etc. • When not possible, suitable stream diversions structures must be used to ensure that rivers/streams are not negatively impacted by construction activity.
HERITAGE IMPACTS	
FARM HOUSES	• Photograph and general map

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
PLANNING AND DESIGN PHASE	
	• Sample/excavate old middens that will be affected • Monitor areas for possible middens during construction • Existing buildings and/or ruins cannot be disturbed, otherwise a permit is required. • Permit will require additional assessment from the Built Environment specialist
FEAUTRES	• Fully recorded, map and photograph • Permits will be required if (partially) damaged
GENERAL BUILDINGS	• Photograph and general map • Permits will be required if (partially) damaged.
GRAVES	• May not impact on graves • Keep 20m buffer from all graves. • Demarcate before construction • No permits will be issued.
HOUSES	• Pre-1960 houses need to be mapped and photographed. • Possibility of subsurface graves • Permits will be required if (partially) damaged.
KRAALS	• Fully recorded, map and photograph • Assess for graves • Permits will be required if (partially) damaged.
STONE WALLING	• Fully recorded, map and photograph • Assess for graves • Permits will be required if (partially) damaged.
OPEN STONE TOOL SCATTERS	• None required

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
GENERAL IMPACTS	

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
NUISANCE DUST	• Nuisance dust should be reduced by implementing one of or a combination of the following: • Damping down of cleared areas; • Retention of vegetation where possible; • Excavations and clearing activities should only be undertaken during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas; and • A speed limit of 40km/h must not be exceeded on dirt roads. • Any complaints or claims emanating from the lack of dust control must be attended to immediately by the Contractor.
FIRE	• Cleared vegetation and any other construction-related waste must not be burned on site during the construction phase. • Open fires must not be permitted within the site during the construction phase. • Smoking on site must be confined to a designated area and this area must be equipped with the necessary fire extinguishers and cigarette disposal facilities. • The Contractor 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.
STORMWATER MANAGEMENT	• The recommendations of the Stormwater Management Plan must be implemented to reduce runoff and reduce the risk of soil erosion and sedimentation in tributaries. • Stockpiled materials must not be stored within 50 m of a tributary or wetland. • Stockpile areas must be suitably bunded to prevent waterborne erosion of exposed soils where there is a likelihood that the soils will be washed into nearby watercourses.
DEGRADATION OF DRAINAGE LINES FROM EARTHWORKS	• There must be no earthworks, apart from roadworks inclusive of culverts, within 32m of the drainage lines to avoid contamination of water sources.
HARZADOUS SUBSTANCES	• The storage of fuels and hazardous materials must be located away from sensitive water resources. • All hazardous substances (e.g. diesel, oil drums, etc.) must be stored in a bunded area. • The recommendations of the Stormwater Management Plan and the Waste Management Plan must be implemented during construction.
MANAGEMENT OF GENERAL WASTE	• The Waste Management Plan, incorporating recycling and waste minimisation, must be implemented throughout the construction phase.

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
	• The Waste Management Plan must be explained to all employees as part of the environmental education training.
MANAGEMENT OF CONSTRUCTION WASTE	• The Waste Management Plan must be implemented throughout the construction phase. • All waste must be disposed of at an appropriately licensed landfill site. • All construction materials must be stored in a central and secure location with an appropriate impermeable surface. • The recommendations of the Stormwater Management Plan must be implemented to mitigate the impacts of potentially polluted runoff.
WATER QUALITY	• No concrete mixing will take place within 32m of any watercourse. • The concrete batching plant must be clearly demarcated, and no sprawl must be tolerated
INFILLING/ EXCAVATION IN A WATERCOURSE	• Stockpiled excavated material must not be stored within 32m of a watercourse. • Stockpile areas must be suitably bunded to prevent waterborne erosion of exposed soils where there is a likelihood that the soils will be washed into a watercourse. • Materials used for infilling must be suitably stabilized to ensure that scour and erosion of the existing bed/banks is exacerbated
DISPOSAL OF SPOIL MATERIAL	• Any stockpiling of gravel, cut, fill or any other material including spoil must only be in areas that have been approved by the ECO within the defined working area. • The Contractor should ensure that the material does not blow or wash away. If the stockpiled material is in danger of being washed or blown away, the Contractor should spray it with Dustex or cover it with a suitable material, such as hessian or plastic. Stockpiles of topsoil must not be covered with plastic. • Areas from which the topsoil is to be removed must be cleared of any foreign material which could form part of the topsoil during removal including any waste material, litter, excess vegetation and any other material which could reduce the quality of the topsoil. • Topsoil stockpiles should not exceed 2 m in height. • The removal and stockpiling of topsoil must be carried out in accordance with the approved EMPr. • Stripping of topsoil should be undertaken in such a manner as to minimise erosion by wind or runoff. • Stockpiled topsoil must not be compacted. • No stockpiling of any material will be allowed within 20 m of any “no-go” areas.

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
AGRICULTURAL IMPACTS	
LOSS OF HIGH POTENTIAL LAND	• Compensate farmers for what is lost. • Keep the construction period as short as possible
LOSS OF CULTIVATED LAND	• Compensate farmers for what is lost. • Keep the construction period as short as possible
LOSS OF GRAZING LAND	• Keep construction period as short as possible. • Employ dust-reducing practices to protect adjoining grazing land.
LOSS OF AGRICICULTURAL PRODUCTION	• Keep the construction period as short as possible. • Employ dust-reducing practices to protect adjoining grazing land.
LOSS OF AGRICULTURAL RESOURCES	• Compensate farmers for what is lost. • Replace topsoil during rehabilitation and ensure that the soil is well fertilised and rolled. • Sow seed of local plants that is adapted to the climate. • Irrigate the soil to ensure germination and establishment of the seed occurs. • Remove all alien plants and weeds until the plants are well established.
SECURITY AND STOCK THEFT	• No unauthorised individuals should be allowed to access the site without permission from the landowners and/or the developers. Theft and vandalism can be reduced by providing additional security to farmers where necessary. • The construction period is for a short period. Discuss the possible restriction of access to farm housing or farming infrastructure like watering facilities, boreholes, etc. with the farmers and come up with solutions. • Maintenance workers must not handle or remove any livestock or wildlife from the site or the surrounding properties. • Police should be notified if any illegal actions take place.
ACCESS TO FARMS	Contractors should keep gates and fences in good condition.
BLASTING AND NOISE	• Notify land owners when blasting will take place. Set up a communication committee that will deal with blasting and security issues.
DUST POLLUTION	• Keep the construction period as short as possible. • Employ dust reduction methods.
AQUATIC IMPACTS	

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
DIRECT ECOSYSTEM DESTRUCTION AND MODIFICATION IMPACTS	• For all watercourses occurring within 50m of the development activities (e.g. turbine sites, access roads, powerline pylons, etc.), the outer edge of the 50m buffer zone to such watercourses must be staked out by a surveyor and demarcated using brightly coloured shade cloth. This must be completed and approved prior to the commencement of any construction activities. • For all watercourses where activities encroach within the watercourses or buffer zones, the outer edge of the watercourses and/or remaining buffer zone must be staked out by a surveyor and demarcated using brightly coloured shade cloth. This must be completed and approved prior to the commencement of any construction activities. • The construction corridor / footprint must be staked out by a surveyor and demarcated using brightly coloured shade cloth. The construction servitude should include the turbine footprints and working area and all new and existing access / haulage roads with a maximum 3m construction working area either side of the access/ haulage roads. • All areas outside of the delineated construction servitude as defined above and/or within / inside the 50m buffer zone of watercourses must be considered no-go areas for the entire construction phase. Any contractor found working within No-Go areas must be fined as per fining schedule/system setup for the project. • The demarcation work must be signed off by the Environmental Control Officer (ECO) before any work commences. • The demarcations are to remain until construction and rehabilitation is complete.
INDIRECT HYDROLOGICAL AND GEOMORPHOLOGICAL IMPACTS	• For all watercourses occurring within 50m of the development activities (e.g. turbine sites, access roads, powerline pylons, etc.), the outer edge of the 50m buffer zone to such watercourses must be staked out by a surveyor and demarcated using brightly coloured shade cloth. This must be completed and approved prior to the commencement of any construction activities. • For all watercourses where activities encroach within the watercourses or buffer zones, the outer edge of the watercourses and/or remaining buffer zone must be staked out by a surveyor and demarcated using brightly coloured shade cloth. This must be completed and approved prior to the commencement of any construction activities. • The construction corridor / footprint must be staked out by a surveyor and demarcated using brightly coloured shade cloth. The construction servitude should include the turbine footprints and working area and all new and existing access / haulage roads with a maximum 3m construction working area either side of the access/ haulage roads. • All areas outside of the delineated construction servitude as defined above and/or within / inside the 50m buffer zone of watercourses must be considered no-go areas for the entire construction phase. Any contractor found working within No-Go areas must be fined as per fining schedule/system setup for the project.

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
	• The demarcation work must be signed off by the Environmental Control Officer (ECO) before any work commences. The demarcations are to remain until construction and rehabilitation is complete.
WATER QUALITY IMPACTS	• For all watercourses occurring within 50m of the development activities (e.g. turbine sites, access roads, powerline pylons, etc.), the outer edge of the 50m buffer zone to such watercourses must be staked out by a surveyor and demarcated using brightly coloured shade cloth. This must be completed and approved prior to the commencement of any construction activities. • For all watercourses where activities encroach within the watercourses or buffer zones, the outer edge of the watercourses and/or remaining buffer zone must be staked out by a surveyor and demarcated using brightly coloured shade cloth. This must be completed and approved prior to the commencement of any construction activities. • The construction corridor / footprint must be staked out by a surveyor and demarcated using brightly coloured shade cloth. The construction servitude should include the turbine footprints and working area and all new and existing access / haulage roads with a maximum 3m construction working area either side of the access/ haulage roads. • All areas outside of the delineated construction servitude as defined above and/or within / inside the 50m buffer zone of watercourses must be considered no-go areas for the entire construction phase. Any contractor found working within No-Go areas must be fined as per fining schedule/system setup for the project. • The demarcation work must be signed off by the Environmental Control Officer (ECO) before any work commences. • The demarcations are to remain until construction and rehabilitation is complete.
FRAGMENTATION AND ECOLOGICAL DISTURBANCE IMPACTS	• For all watercourses occurring within 50m of the development activities (e.g. turbine sites, access roads, powerline pylons, etc.), the outer edge of the 50m buffer zone to such watercourses must be staked out by a surveyor and demarcated using brightly coloured shade cloth. This must be completed and approved prior to the commencement of any construction activities. • For all watercourses where activities encroach within the watercourses or buffer zones, the outer edge of the watercourses and/or remaining buffer zone must be staked out by a surveyor and demarcated using brightly coloured shade cloth. This must be completed and approved prior to the commencement of any construction activities. • The construction corridor / footprint must be staked out by a surveyor and demarcated using brightly coloured shade cloth. The construction servitude should include the turbine footprints and working area and all new and existing access / haulage roads with a maximum 3m construction working area either side of the access/ haulage roads. • All areas outside of the delineated construction servitude as defined above and/or within / inside the 50m buffer zone of watercourses must be considered no-go

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
	areas for the entire construction phase. Any contractor found working within No-Go areas must be fined as per fining schedule/system setup for the project. • The demarcation work must be signed off by the Environmental Control Officer (ECO) before any work commences. • The demarcations are to remain until construction and rehabilitation is complete.
AVIFAUNAL MPACTS	
DIRECT HABITAT DESTRUCTION	• Laydown and other temporary infrastructure to be placed within Low sensitivity areas, preferably previously transformed areas, wherever possible; • Appropriate run-off and erosion control measures are to be implemented where required; • A site-specific Environmental Management Programme (EMPr) must be implemented, which gives appropriate and detailed description of how construction activities must be conducted to reduce unnecessary destruction of habitat (e.g., no open fires outside of designated areas); • All contractors are to adhere to the EMPr and should apply good environmental practice during construction; • All hazardous materials should be stored in the appropriate manner to prevent contamination of the site and downstream environments. Any accidental chemical, fuel and oil spills that occur at the site should be cleared and disposed of as appropriate for the nature of the spill; Existing roads and farm tracks should be used where possible; • The minimum footprint areas of infrastructure should be used wherever possible, including road widths and lengths; • No off-road driving should be permitted in areas not identified for clearing; • An Environmental Site Officer (ESO) must form part of the on-site team to ensure that the EMPr is implemented and enforced and an Environmental Control Officer (ECO) must be appointed to oversee the implementation activities and monitor compliance for the duration of the construction phase; and • Following construction, rehabilitation of areas disturbed by temporary laydown areas and facilities must be undertaken.
DISTURBANCE AND DISPLACEMENT	• A site specific EMPr must be implemented, which gives appropriate and detailed description of how construction activities must be conducted; • All contractors are to adhere to the EMPr and should apply good environmental practice during construction; • Environmental Officer to oversee activities and ensure that the site specific EMPr is implemented and enforced; • Maximum use of existing access road and servitudes;

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
	• Existing and novel access roads are to be suitably upgraded or constructed to prevent damage and erosion resulting from increased vehicular traffic and construction vehicles; • No off-road driving in undesignated areas; • Speed limits (40 km/h) should be strictly enforced on site to reduce unnecessary noise; • Construction camps should be lit with as little light as practically possible, with the lights directed downwards where appropriate; • The movement of construction personnel should be restricted to the construction areas on the project site; • No dogs or cats other than those of the landowners should be allowed on site; • The appointed Environmental Officer must be trained to identify the potential Red Data species as well as the signs that indicate possible breeding by these species; • The Environmental Officer must then, during audits/site visits, make a concerted effort to look out for such breeding activities of SCCs (e.g., cranes, Secretarybird), and such efforts may include the training of construction staff (e.g., in Toolbox talks) to identify Red Data species, followed by regular questioning of staff as to the regular whereabouts on site of these species; • If any avifaunal SCCs are confirmed to be breeding (e.g., if a nest site is found), construction activities within 500 m of the breeding site must cease, and an avifaunal specialist is to be contacted immediately for further assessment of the situation and instruction on how to proceed; • Prior to construction, an avifaunal specialist should conduct a site walkthrough, covering the final road and power line routes as well as temporary laydown areas and facilities, to identify any nests/breeding/roosting activity of sensitive species; and • The results of which may inform the final construction schedule in close proximity to that specific area, including abbreviating construction time, scheduling activities around breeding activity, and lowering levels of associated noise.
DIRECT MORTALITY	• Maximum use of existing access road and servitudes; • No off-road driving in undesignated areas; • Speed limits (40 km/h) should be strictly enforced on site to reduce probability of vehicle collisions; • The movement of construction personnel should be restricted to the construction areas on the project site; • No dogs or cats other than those of the landowners should be allowed on site;

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
	• Any holes dug e.g., for foundations of pylons should not be left open for extended periods of time to prevent entrapment by ground dwelling avifauna or their young and only be dug when required and filled in soon thereafter; • Temporary fencing must be suitably constructed, e.g., if double layers of fencing are required for security purposes, they should be positioned at least 2 m apart to reduce the probability of entrapment by larger bodied species that may find themselves between the two fences; and • Roadkill is to be reported to the ECO and removed as soon as possible.
ECOLOGICAL MPACTS	
LOSS OF LOW ESCARPMENT MOIST GRASSLAND (LC)	• Vegetation clearing must be strictly limited to the minimum extent necessary for the construction of the pylons. • As far as feasibly possible, pylons should be placed within previously degraded areas. • Any impacted areas outside of the development footprint must be rehabilitated using indigenous plant species commonly occurring within Low Escarpment Moist Grassland. • Construction workers must be prohibited from making fires. • The footprint of pylons must be micro-sited prior to construction. Should populations of threatened SCC be identified during this process, the design and placement of the project components should be amended to avoid these populations. • Cumulative impacts on this vegetation type can be reduced if environmental authorisations for developments (including the WEFs associated with the current proposed development) include conditions requiring management to improve the functioning and persistence of this ecosystem (e.g., requiring invasive alien plant clearing and the restoration of remaining natural areas as a condition of authorisation).
LOSS OF THE NORTHERN KWAZULU-NATAL MOIST GRASSLND	• Vegetation clearing must be strictly limited to the minimum extent necessary for the construction of the pylons. • As far as feasibly possible, pylons should be placed within previously degraded areas. • Any impacted areas outside of the development footprint must be rehabilitated using indigenous plant species commonly occurring within Northern KZN Moist Grassland. • Employees must be prohibited from making fires during the construction phase. • The footprint of pylons must be micro-sited prior to construction. Should populations of threatened SCC be identified during this process, the design and

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
	placement of the project components should be amended to avoid these populations. • Cumulative impacts on this vegetation type can be reduced if environmental authorisations for developments (including the WEFs associated with the current proposed development) include conditions requiring management to improve the functioning and persistence of this ecosystem (e.g., requiring invasive alien plant clearing and the restoration of remaining natural areas as a condition of authorisation).
LOSS OF KWAZULU-NATAL HIGHLAND THORNVELD	• Vegetation clearing must be strictly limited to the minimum extent necessary for the construction of the pylons. • As far as feasibly possible, pylons should be placed within previously degraded areas. • Any impacted areas outside of the development footprint must be rehabilitated using indigenous plant species commonly occurring within Northern KZN Moist Grassland. • Employees must be prohibited from making fires during the construction phase. • The footprint of pylons must be micro-sited prior to construction. Should populations of threatened SCC be identified during this process, the design and placement of the project components should be amended to avoid these populations. • Cumulative impacts on this vegetation type can be reduced if environmental authorisations for developments (including the WEFs associated with the current proposed development) include conditions requiring management to improve the functioning and persistence of this ecosystem (e.g., requiring invasive alien plant clearing and the restoration of remaining natural areas as a condition of authorisation).
LOSS OF PLANT SPECIES OF CONSERVATION CONCERN	• Once surveyed and pegged, the footprint of pylons and other related project infrastructure must be micro-sited prior to construction. Should populations of threatened SCC, particularly those that are Critically Endangered or Endangered, be identified during this process, the design and placement of the project components must be adjusted to avoid populations of these species. • Permits for the removal of plant species protected in terms of the Natal Nature Conservation Ordinance (No. 15 of 1974) must be obtained prior to vegetation clearance. • The construction area must be clearly demarcated, and construction vehicles and machinery must not operate beyond the demarcated area.
LOSS OF FRAGMENTATION OF FAUNAL HABITAT	• The mitigation measures recommended for impacts relating to the loss of ecosystems will also reduce impacts associated with the loss and fragmentation of faunal habitat, and should be implemented.

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
	• Pylons placement should avoid rocky outcrops and permanent or temporary wetlands, which are significant habitats for faunal SCC. • Pylons should be placed in previously disturbed or modified areas, as far as feasibly possible. • The construction area must be clearly demarcated, and construction vehicles and machinery must not operate beyond the demarcated area.
LOSS OF FAUNAL SPECIES OF CONSERVATION CONCERN	• All construction workers must be educated on the importance of wildlife conservation, be instructed not to harm or harass any wildlife encountered during construction. • If wildlife mortality is observed during construction, the carcass should be photographed, coordinates taken, and the incident should be reported to the environmental control officer. For significant species (including faunal SCC), the carcass should be made available for accession to a museum collection. • All individuals, including construction workers must sign a register prior to accessing the construction site. • Construction workers must not be housed on site. • Speed restrictions (40 km/h) must be implemented to reduce the chance of road kills. • Driving of construction vehicles within the project area must be restricted to daylight hours. • Existing roads must be used as far as practically possible. • All reasonable and feasible measures should be implemented to reduce noise in ecologically sensitive areas.
IMPACTS ON CRITICAL BIODIVERSITY AREAS	• Where feasible, infrastructure should be placed outside of natural areas classified as CBA or placed in previously disturbed areas. Existing roads must be utilised as far as practically and feasibly possible.
DISRUPTION OF ECOSYSTEM FUNCTION AND PROCESS	• The clearance of vegetation must be strictly limited to that which is necessary for the construction of project-related infrastructure. • Any impacted areas outside of the development footprint must be rehabilitated using indigenous plant species commonly occurring within indigenous vegetation types within the project area. • Existing access roads should be utilised.
ESTABLISHMENT OF ALIEN PLANT SPECIES	• The site must be checked regularly for the presence of alien invasive species. • All alien invasive species that establish because of the proposed development must be removed and disposed of as per the Working for Water Guidelines.

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
	• An Alien Invasive Management Plan must be compiled for the proposed project. • The cumulative impacts of developments creating new pathways for invasion can be addressed through control measures being made mandatory as part of environmental authorisation.
HERITAGE IMPACTS	
FARM HOUSES	• Photograph and general map • Sample/excavate old middens that will be affected • Monitor areas for possible middens during construction • Existing buildings and/or ruins cannot be disturbed, otherwise a permit is required. • Permit will require additional assessment from the Built Environment specialist
FEAUTRES	• Fully recorded, map and photograph • Permits will be required if (partially) damaged
GENERAL BUILDINGS	• Photograph and general map • Permits will be required if (partially) damaged.
GRAVES	• May not impact on graves • Keep 20m buffer from all graves. • Demarcate before construction • No permits will be issued.
HOUSES	• Pre-1960 houses need to be mapped and photographed. • Possibility of subsurface graves • Permits will be required if (partially) damaged.
KRAALS	• Fully recorded, map and photograph • Assess for graves • Permits will be required if (partially) damaged.
STONE WALLING	• Fully recorded, map and photograph • Assess for graves • Permits will be required if (partially) damaged.
OPEN STONE TOOL SCATTERS	None required

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
SOCIO-ECONOMIC IMPACTS	
TEMPORARY EMPLOYMENT	• Maximise local employment and local content (the Project's direct sending area) through the Preferential Procurement Plan and Contractor Social Management Plan (CSMP) for all contractors that are used. • Involve local government structures from the early processes (from financial close already if possible). Determine their existing process with regards to a labour desk and streamline employment processes between the various stakeholders. • Appoint a Community Employer Relations Officer/Community Liaison Officer (CLO). Communicate with communities through this one channel to ensure transparency, limit.
LOCAL PROCUREMENT	• Maximise local content of procurement by procuring from the local and regional study areas as far as possible. • Join the existing Newcastle LED Forum to establish links with the local trade and industry sectors and suppliers. • Include minimum thresholds in the CSMP for local employment, BBEEE procurement, SMME targets, local services providers, etc.
INDUCED LOCAL ECONOMIC IMPACTS	• Maximise the Project's local content
IMPACTS ON LIVELIHOODS OF DIRECTLY AFFECTED LANDOWNERS	• Discuss construction timelines with landowners so that grazing can take place away from the construction areas. • Negotiate compensation with farmers whose crops will be affected by dust / construction activities. • Implement a land use management plan in conjunction with landowners.

TRAINING / SKILLS DEVELOPMENT / CAPACITY BUILDING	• Include the Newcastle, Dannhauser, Emadlangeni, Phumelela and the Dr Pixley Ka Isaka Seme LM's LED Units in all relevant processes from the onset of the Project.
	• The developer is encouraged to take part / slot in with the various municipal initiatives and interventions to develop SMME's to enable them to take part in the Project's construction phase.
	• Where feasible the developer should:
	  ○ Make the skill requirements clear to the municipalities in advance and do a skills analysis of the available labour force.
	  ○ Do a Value-chain analysis of services required (directly and indirectly related to construction) and communicate this to local and district municipalities in advance so that they are prepared and equipped to take part in the tender process.
	  ○ Require larger contractors to work with small SMMEs to train and transfer skills and include this in their respective CSMP's.

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
	○ Implement on-thejob training for unskilled workers. ○ Capacitate the local government structures by involving them as early as possible in the Project; remain transparent throughout the processes. ○ Negotiate a MoU with the municipalities so that each roleplayer is clearly aware of its roles, responsibilities and timelines in the Project processes. • Establish an EMC or similar Forum for the duration of construction to aid communication and transparency with local government. Members of the EMC / Forum to meet on a quarterly basis to discuss issues that may arise during the course of the construction period (if feasible)
EMPLOYMENT EQUITY	• Obtain inputs from the respective local and district municipalities on the contents of the Procurement strategy and Employment Equity Plan to be implemented. • Set targets for the employment of Youth, women and the disabled in the CSMPs.
IMPACTS ASSOCIATED WITH AN INFLUX OF JOBSEEKERS / TEMPORARY CONSTRUCTION WORKERS	• Minimize/reduce impact: Employment / Temporary construction workers: • Clearly identify the beneficiary communities / labour sending area and compile the employment strategy in collaboration with the affected municipalities' LED Units. • Encourage the affected local municipalities to draw up a cooperation agreement that specifies the percentages of the workforce that will be sourced from each municipality. • Ensure that the Community Employer Relations Officer /CLO has knowledge of the local communities, is educated with good public relation skills, committed to the cause and is accessible for community members. • Contractually oblige contractors and subcontractors to only source labour through the labour desk / job registration database and make this known to the target communities. • Work through limited communication channels (e.g. Ward Councillors and the Employer Relations Officer / CLO). • Be vigilant not to raise unrealistic expectations amongst the local communities and workers with regards to employment, skills requirements, local procurement and so forth. Ensure transparency through the Ward Councillors, CLO and the EMC / Forum. • No recruitment of temporary workers at the access to the construction site. • As part of their CSMP's, contractors to provide a transport and housing plan: (i) no workers are allowed to be housed on site or in informal housing / settlements; (ii) allow workers that do not live nearby time to return to their families at regular intervals or over weekends. • No workers to remain on site after shifts. • No informal traders to be allowed on or near the construction site/s.

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
	• It is also recommended that the Developer embarks on a Social Awareness Campaign for the workforce that focuses on sexual health, unwanted pregnancies and related social issues. <u>Security, safety and environmental health:</u> • Do a security risk assessment (if required) and base the exact security measures on the detailed assessment of the risks at the site. • 24-hour security, demarcate and fence the construction site (if possible), material stores to be secured, access control and no trespassing of workers outside designated construction areas. • Join the local community policing forum and similar initiatives (e.g. Amajuba District Fire Technical Task Team) for the duration of construction. • Keep the local SAPS, other emergency services, Ward Councillors, landowners and other relevant stakeholders informed about the construction progress and time-lines. • Develop a Fire / Emergency Management Plan in conjunction with affected and neighbouring landowners. • Dispose of the various types of waste generated in the appropriate manner at licensed waste landfill sites at regular intervals. Comply with the waste management plan compiled for the construction phase. • Display “danger” warning signs and “no public access” signs at all potential accesses, paths and along the periphery of the construction areas in English and the local languages. • If water for construction is obtained from a natural water resource, comply with the Water Use Licence conditions for the duration of the construction period. • Ensure implementation of the provisions of the Occupational Health and Safety Act No. 85 of 1993 and adhere to the Emergency and Safety plan procedures for the duration of the construction phase. <u>Awareness / community engagement:</u> • Keep open communication channels with the landowners and address any potential issues as a matter of priority. • Make contact details of the main contractor and procedures to lodge complaints available to landowners and the local communities through the Ward Councillors and EMC / Forum. • Make a complaints register / log book available at the entrance to the construction site and act immediately should issues arise. • Consult with surrounding landowners whose livestock, private residences and other infrastructure could be affected by dust, noise and other impacts that result from traffic movement and general construction activities.

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
	• Where required, draw up a land use management plan with individual landowners to protect livestock and farmland, which addresses restricted access areas, procedures when farm gates are opened and closed and so forth. <u>Remediate/rehabilitate impact:</u> • Rehabilitate the veld to its original state post construction.
LAND USE AND RESOURCE IMPACTS	Minimise/reduce impact: • Implement all the mitigation and management measures as proposed in the Agricultural Study. • Implement the SWMPfor the duration of construction. Remediate/rehabilitate impact: • Rehabilitate the veld to its original state post construction
IMPACTS ON TOURISM/ACCOMMODATION FACILITIES	Minimize/reduce impact: • Implement all measures proposed in the SEIA and other Specialist Assessments to mitigate intrusion impacts (dust, noise, visual) during construction. • Implement all mitigation measures related to awareness/community engagement as proposed in the section dealing with 'Impacts associated with an influx of jobseekers / temporary construction workers'; keep open communication channels with affected tourism establishments and address potential issues proactively. • Give preference to accommodation establishments in the local study area when workers are housed
INTRUSION IMPACTS	Minimize / reduce impact: • Comply with the generic EMPr for overhead transmission lines with regards to noise and dust. • Implement all mitigation measures as proposed in Section 7.1.6 (Impacts associated with an influx of jobseekers /temporary construction workers). • Discuss construction timelines with landowners so that grazing of livestock can take place away from the construction area. • Negotiate compensation farmers whose crops will be affected by dust and/or the construction activities.
VISUAL IMPACTS	
POTENTIAL VISULA IMPACT ON VISUAL RECEPTORS IN CLOSE PROXIMITY TO PROPOSED INFRASTRUCTURED	• Ensure that vegetation is not unnecessarily removed during the construction period. • Reduce the construction period through careful logistical planning and productive implementation of resources.

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
CONSTRUCTION PHASE	
	• Plan the placement of lay-down areas and temporary construction equipment camps in order to minimise vegetation clearing (i.e., in already disturbed areas) wherever possible. • Restrict the activities and movement of construction workers and vehicles to the immediate construction site and existing access roads. • Ensure that rubble, litter, and disused construction materials are appropriately stored (if not removed daily) and then disposed regularly at licensed waste facilities. • Reduce and control construction dust using approved dust suppression techniques as and when required (i.e., whenever dust becomes apparent). • Restrict construction activities to daylight hours whenever possible in order to reduce lighting impacts. • Rehabilitate all disturbed areas immediately after the completion of construction works.

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES	MANAGEMENT PLAN
OPERATIONAL PHASE		
GENERAL IMPACTS		
WASTE MANAGEMENT	• A Waste Management Plan incorporating recycling and waste minimisation must be implemented. The Waste Management Plan must be explained to all employees as part of the environmental induction training.	
AIR QUALITY AND CLIMATE CHANGE	• Enhance this impact by promoting the use of renewable energy locally.	
ARCHITECTURE OF ANCILLARY INFRASTRUCTURE	• All project structures and buildings must be maintained.	
HAZARDOUS CHEMICAL STORAGE	• All hazardous substances must be stored in appropriately bunded locations.	
INCREASED STORMWATER RUN-OFF	• Recommendations of the Stormwater Management Plan and Erosion Management Plan must be implemented.	
AQUATIC IMPACTS		
DIRECT ECOSYSTEM DESTRUCTION AND MODIFICATION IMPACTS	• It is the Developer's responsibility to ensure the proper functioning of infrastructure that is likely to require regular on-going maintenance. This includes the stormwater management infrastructure and road infrastructure.	

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES	MANAGEMENT PLAN
	OPERATIONAL PHASE	
	• It is important that the location and extent of the rivers and wetlands in the vicinity of project activities be incorporated into all formal maintenance and repair plans for the project. • In terms of management, alien invasive plant control must be practiced on an on-going basis in line with the requirements of Section 2(2) and Section 3 (2) the National Environmental Management: Biodiversity Act (NEM:BA), which obligates the landowner/developer to control IAPs on their property. • Long-term monitoring of the potential freshwater ecosystem impacts be undertaken to proactively identity any environmental issues and impacts that may arise as a result of the operational phase of the project. The following key aspects should be monitored: ○ Erosion and/or sedimentation in the onsite and downstream wetlands; ○ Water table monitoring to determine any impacts to subsurface inputs; and ○ Presence of alien invasive plants. • Where appreciable direct vegetation/habitat impacts and/or indirect erosion/sedimentation impacts or hydrological impacts occur resulting from project activities, these must be reported immediately to the relevant environmental authorities, and an independent aquatic or wetland specialist appointed to conduct a site inspection to assess the residual impacts and determine the need for any onsite remediation or rehabilitation requirements.	
INDIRECT HYDROLOGICAL AND GEMORPHOLOGICAL IMPACTS	• It is the Developer's responsibility to ensure the proper functioning of infrastructure that is likely to require regular on-going maintenance. This includes the stormwater management infrastructure and road infrastructure. • It is important that the location and extent of the rivers and wetlands in the vicinity of project activities be incorporated into all formal maintenance and repair plans for the project. • In terms of management, alien invasive plant control must be practiced on an on-going basis in line with the requirements of Section 2(2) and Section 3 (2) the National Environmental Management: Biodiversity Act (NEM:BA), which obligates the landowner/developer to control IAPs on their property. • Long-term monitoring of the potential freshwater ecosystem impacts be undertaken to proactively identity any environmental issues and impacts that may arise as a result of the operational phase of the project. The following key aspects should be monitored: ○ Erosion and/or sedimentation in the onsite and downstream wetlands; ○ Water table monitoring to determine any impacts to subsurface inputs; and ○ Presence of alien invasive plants. • Where appreciable direct vegetation/habitat impacts and/or indirect erosion/sedimentation impacts or hydrological impacts occur resulting from project	

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OPERATIONAL PHASE		
	activities, these must be reported immediately to the relevant environmental authorities, and an independent aquatic or wetland specialist appointed to conduct a site inspection to assess the residual impacts and determine the need for any onsite remediation or rehabilitation requirements.	
WATER QUALITY IMPACTS	• It is the Developer's responsibility to ensure the proper functioning of infrastructure that is likely to require regular on-going maintenance. This includes the stormwater management infrastructure and road infrastructure. • It is important that the location and extent of the rivers and wetlands in the vicinity of project activities be incorporated into all formal maintenance and repair plans for the project. • In terms of management, alien invasive plant control must be practiced on an on-going basis in line with the requirements of Section 2(2) and Section 3 (2) the National Environmental Management: Biodiversity Act (NEM:BA), which obligates the landowner/developer to control IAPs on their property. • Long-term monitoring of the potential freshwater ecosystem impacts be undertaken to proactively identity any environmental issues and impacts that may arise as a result of the operational phase of the project. The following key aspects should be monitored: ○ Erosion and/or sedimentation in the onsite and downstream wetlands; ○ Water table monitoring to determine any impacts to subsurface inputs; and ○ Presence of alien invasive plants. • Where appreciable direct vegetation/habitat impacts and/or indirect erosion/sedimentation impacts or hydrological impacts occur resulting from project activities, these must be reported immediately to the relevant environmental authorities, and an independent aquatic or wetland specialist appointed to conduct a site inspection to assess the residual impacts and determine the need for any onsite remediation or rehabilitation requirements.	
FRAGMENTATION AND ECOLOGICAL DISTRUBANCE IMPACTS	• It is the Developer's responsibility to ensure the proper functioning of infrastructure that is likely to require regular on-going maintenance. This includes the stormwater management infrastructure and road infrastructure. • It is important that the location and extent of the rivers and wetlands in the vicinity of project activities be incorporated into all formal maintenance and repair plans for the project. • In terms of management, alien invasive plant control must be practiced on an on-going basis in line with the requirements of Section 2(2) and Section 3 (2) the National Environmental Management: Biodiversity Act (NEM:BA), which obligates the landowner/developer to control IAPs on their property. • Long-term monitoring of the potential freshwater ecosystem impacts be undertaken to proactively identity any environmental issues and impacts that may arise as a	

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES	MANAGEMENT PLAN
OPERATIONAL PHASE		
	result of the operational phase of the project. The following key aspects should be monitored: ○ Erosion and/or sedimentation in the onsite and downstream wetlands; ○ Water table monitoring to determine any impacts to subsurface inputs; and ○ Presence of alien invasive plants. • Where appreciable direct vegetation/habitat impacts and/or indirect erosion/sedimentation impacts or hydrological impacts occur resulting from project activities, these must be reported immediately to the relevant environmental authorities, and an independent aquatic or wetland specialist appointed to conduct a site inspection to assess the residual impacts and determine the need for any onsite remediation or rehabilitation requirements.	
AVIFAUNAL IMPACTS		
DISTURBANCE AND DISPLACEMENT	• A site specific operational EMPr must be implemented, which gives appropriate and detailed description of how operational and maintenance activities must be conducted to reduce unnecessary disturbance; • All contractors are to adhere to the environmental management programme and should apply good environmental practice during all operations; and • Operational phase bird monitoring, in line with the latest available guidelines, must be implemented.	
DIRECT MORTALITY	• Reduction in the traverse of areas identified to be of elevated avifaunal sensitivity as far as practically feasible; • Pylons to be staggered (where possible) relative to adjacent pylon positions to increase the overall visibility of transmission infrastructure to avifauna; • Appropriate (approved) Bird flight diverters (BFDs) to be affixed to the entire length of novel overhead power lines; • All new overhead power line pylons must be of a design that minimizes electrocution risk by using adequately insulated 'bird friendly' structures, with sufficient clearances between live components to reduce the risk of electrocution; • Anti-perch devices are to be attached to all potential perches in proximity to energized infrastructure; • Develop and implement a carcass search and fatality monitoring programme in-line with the latest applicable guidelines; • Regular reviews of operational phase monitoring data and results to be conducted by an avifaunal specialist. If one or more avifaunal SCC carcasses are located and determined likely to have resulted from collisions with infrastructure in any sensitivity area over the lifespan of the facility the fatality is to be appropriately	

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES	MANAGEMENT PLAN
OPERATIONAL PHASE		
	recorded and reported to an avifaunal specialist to determine the most appropriate action; • Any fatalities located should be reported to Birdlife South Africa (BLSA) and the Endangered Wildlife Trust (EWT); and • Prevent birds from nesting in, or perching on substation infrastructure through exclusion covers or spikes if required (determined on a case-by-case basis)	
ECOLOGICAL IMPACTS		
ESTABLISHMENT OF ALIEN PLANT SPECIES	• 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. • 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. • An Alien Invasive Management Plan must be compiled and implemented during the Operational Phase.	
DISPERSAL BARRIERS ABD ROAD MORTALITIES	• Where possible, scheme enhancements (e.g., road verges) must be implemented for roadside habitat creation, or the relinking of severed patches and improvement of degraded habitat links. • Speed restrictions (40 km per hour is recommended) must be implemented to reduce the chance of road kills. • Driving of maintenance vehicles within the project area must be restricted to day-light hours. • Existing roads must be used as far as practically possible. • All reasonable and feasible measures should be implemented to reduce noise in ecologically sensitive areas.	
HERITAGE IMPACTS		
FARM HOUSES	• Photograph and general map • Sample/excavate old middens that will be affected • Monitor areas for possible middens during construction • Existing buildings and/or ruins cannot be disturbed, otherwise a permit is required. • Permit will require additional assessment from the Built Environment specialist	
FEAUTRES	• Fully recorded, map and photograph • Permits will be required if (partially) damaged	

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES	MANAGEMENT PLAN
OPERATIONAL PHASE		
GENERAL BUILDINGS	• Photograph and general map • Permits will be required if (partially) damaged.	
GRAVES	• May not impact on graves • Keep 20m buffer from all graves. • Demarcate before construction • No permits will be issued.	
HOUSES	• Pre-1960 houses need to be mapped and photographed. • Possibility of subsurface graves • Permits will be required if (partially) damaged.	
KRAALS	• Fully recorded, map and photograph • Assess for graves • Permits will be required if (partially) damaged.	
STONE WALLING	• Fully recorded, map and photograph • Assess for graves • Permits will be required if (partially) damaged.	
OPEN STONE TOOL SCATTERS	• None required	
SOCIO-ECONOMIC IMPACTS		
CONTRIBUTION TO NATIONAL POWER SUPPLY	• No mitigation required.	
IMPACTS ON LAND VALUES	• Rehabilitate the areas post construction and maintain the access road.	
IMPACTS ON SENSE OF PLACE	• Implement all relevant measures to reduce intrusion impacts and as proposed in the Specialist Noise and Visual Assessment reports. • As far as possible, avoid turbines to be located in direct view of residences and / or tourist and holiday accommodation establishments. • Implement measures to increase communication and transparency between the land owners and the developer, as proposed in the previous sections of this report.	
VISUAL IMPACTS		
POTENTIAL VISUAL IMPACTS ON SENSITIVE VISUAL RECEPTORS IN	• <u>Planning:</u>	

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES	MANAGEMENT PLAN
OPERATIONAL PHASE		
CLOSE PROXIMITY TO THE PROPSED INFRASRTUCTURE	○ Retain/re-establish and maintain natural vegetation immediately adjacent to the development footprint/servitude. • <u>Operations:</u> ○ Maintain the general appearance of the infrastructure. • <u>Decommissioning:</u> ○ Remove infrastructure not required for the post-decommissioning use. • Rehabilitate all affected areas. Consult an ecologist regarding rehabilitation specifications.	
POTENTIAL VISUAL IMPACTS ON SENSITIVE VISUAL RECEPTORS WITHIN THE REGION	• Site development & Operation: ○ Retain / re-establish and maintain large trees, natural features and noteworthy natural vegetation in all areas outside of the activity footprint. ○ Retain natural pockets (wetland, river and other sensitive vegetation zones) as buffers within the property and along the perimeter. ○ Dust suppression techniques should be in place at all times during the site development and operational phases. ○ Access roads will require an effective dust suppression management programme, such as regular wetting and/or the use of non-polluting chemicals that will retain moisture in the road surface. ○ Downscaling of operations. ○ Keeping infrastructure at minimum heights. ○ Introducing landscaping measures such as vegetating berms. ○ Avoid the use of highly reflective material. ○ Metal surfaces, where they occur, should be painted in natural soft colours that would blend in with the environment. ○ Maintain the general appearance of the site as a whole. • Lighting: ○ Lighting should be kept to a minimum wherever possible. ○ Install light fixtures that provide precisely directed illumination to reduce light “spillage” beyond the immediate surrounds of the activity – this is especially relevant where the edge of the activity is exposed to residential properties. ○ Wherever possible, lights should be directed downwards to avoid illuminating the sky.	

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES	MANAGEMENT PLAN
	OPERATIONAL PHASE	
	○ Avoid high pole top security lighting along the periphery of the site and use only lights that are activated on movement. • Decommissioning: ○ Remove infrastructure not required for the post-decommissioning use of the site. ○ Rehabilitate all areas as per the rehabilitation plan undertaken. Consult an ecologist regarding rehabilitation specifications. ○ Monitor rehabilitated areas post-decommissioning and implement remedial actions as required.	
VISUAL IMPACTS OF FACILITY OPERATIONS ON LANDSCAPE CHARACTER AND SENSE OF PLACE WITHIN THE REGION	• <u>Planning:</u> ○ Retain / re-establish and maintain natural vegetation in all areas outside of the development footprint. ○ Plan ancillary infrastructure in such a way and in such a location that clearing of vegetation is minimised. ○ Use existing roads wherever possible. Where new roads are required to be constructed, these should be planned carefully, taking due cognisance of the local topography. Roads should be laid out along the contour wherever possible, and should never traverse slopes at 90 degrees. Construction of roads should be undertaken properly, with adequate drainage structures in place to forego potential erosion problems. • <u>Construction:</u> ○ Rehabilitate all construction areas. ○ Ensure that vegetation is not cleared unnecessarily to make way for infrastructure. • <u>Operations:</u> ○ Maintain the general appearance of the facility as a whole. ○ Monitor rehabilitated areas, and implement remedial action as and when required. • <u>Decommissioning:</u> ○ Remove infrastructure not required for the post-decommissioning use of the site. ○ Rehabilitate all areas. Consult an ecologist regarding rehabilitation specifications • Monitor rehabilitated areas post-decommissioning and implement remedial actions.	

ISSUE/IMPACT	MITIGATION MEASURE/ MANAGEMENT OUTCOME MEASURES
DECOMMISSIONING PHASE	
GENERAL IMPACTS	
POLLUTION	• Littering must be avoided, and litter bins must be made available at various strategic points on site. • Refuse from the decommissioning of the site must be collected on a regular basis and deposited at an appropriate landfill. • No storage of fuels and hazardous materials must be permitted near sensitive water resources. All hazardous substances (e.g. diesel, oil drums, etc.) to be stored in a bunded area
DUST	• Management of fugitive/nuisance dust could be implemented through the following: ○ Damping down of un-surfaced and un-vegetated areas; ○ Retention of vegetation where possible; Demolitions and other clearing activities must only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas; ○ A speed limit of 40km/h must not be exceeded on dirt roads. • Any complaints or claims emanating from the lack of dust control must be attended to immediately by the Contractor

APPENDIX 1: METHOD STATEMENTS

To be prepared by the contractor prior to commencement of the activity. The method statements are **not required** to be submitted to the CA.

APPENDIX 2: *CURRICULUM VITAE* OF THE EAP AND ENVIRONMENTAL TEAM

- Dr Alan Carter (CES, Executive Consultant) – *EAP, Project Leader and Report Reviewer*
- Ms Sinazo Nyudwana (CES, Consultant) – *Generic EMPr Co-author*

ALAN ROBERT CARTER
Curriculum Vitae

CONTACT DETAILS

Name of Company	**CES – Environmental and Social Advisory Services**
Designation	Executive Director: Consulting (South Africa)
Profession	Environmental consultant and financial accountant
Years with firm	23 (twenty three) + years
E-mail	a.carter@cesnet.co.za
Office number	+27 (0) 43 726-7809
Mobile	+27 (0) 83 379-9861
Nationality	South African
Professional Body	➢ SACNASP: South African Council for Natural Scientific Profession ➢ EAPASA: Environmental Assessment Practitioners Association of South Africa ➢ TSBCPA: Texas State Board of Certified Public Accountants (USA) ➢ AICPA: American Institute of Certified Public Accountants (USA) ➢ Exemplar Global: Environmental Management Systems Auditor (USA & Australia) ➢ South African Institute of Chartered Accounts (SAICA) (completed traineeship)
Key areas of expertise	➢ Environmental Impact Assessment ➢ Marine Ecology ➢ Environmental and coastal management ➢ Waste management ➢ Climate change and emissions inventories ➢ Financial accounting and project feasibility studies (particularly aquaculture and tourism) ➢ Environmental management systems, auditing and due-diligence

PROFILE

Alan has extensive training and experience in both financial accounting and environmental science disciplines with CES over the past 20 plus years and prior to that for 8 years with international accounting firms in South Africa and the USA. He holds a PhD in marine ecology and BCom Honours degree in financial accounting and auditing and completed his articles with the South African Institute of Chartered Accounts (SAICA). He is also a member of the American Institute of Certified Public Accountants (licensed in Texas) and is a certified ISO14001 EMS auditor with Exemplar Global (formerly the American National Standards Institute). Alan has been responsible for leading and managing numerous and varied environmental and financial consulting projects over the past 33 years.

EMPLOYMENT EXPERIENCE

- January 2001 – Present: Executive Director Consulting (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 & Auditing - Rhodes University 1995
- B.Sc. Hons. Plant Science - Rhodes University 1983
- B.Sc. Plant Science & Zoology - Rhodes University 1982

COURSES

- Completed articles with the South African Institute of Chartered Accounts (SAICA) (1996).
- 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.

CONSULTING EXPERIENCE

Environmental Impact Assessment

- Managed numerous environmental impact assessment (EIA) projects (estimated at over 200 EIAs) and prepared EIA reports in terms of relevant EIA legislation and regulations (including World Bank and IFC Standards) for development proposals including: bulk water and waste water, roads, electrical, mining, ports, aquaculture, renewable energy (over 20 solar facilities and over 20 wind farms), industrial processes, water schemes, 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.

Feasibility and Pre-feasibility Assessments

- Managed projects to develop pre-feasibility and feasibility assessments for various projects, including various aquaculture and 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 the following aquaculture feasibility studies:
  - Mariculture Zone at Qolorha on the South African Wild Coast (2013).
  - Mariculture Zone within the Coega Industrial Development Zone (2014).
  - Aquaponics Zone within the Coega Industrial Development Zone (2017).
  - Finfish cage farming within the Port of Richards Bay (2019).

- Multispecies aquaculture hatchery and demonstration facility in the Eastern Cape Province (2019).

Strategic Environmental Assessment

- Managed Strategic Environmental Assessment (SEA) project toward the development of a Biofuel Industry in the Eastern Cape Province of South Africa (2016)
- Managed Strategic Environmental Assessment (SEA) projects for three South African ports (2006 – 2024).
- Managed Strategic Environmental Assessment (SEA) projects for five (5) local municipalities in the Eastern Cape as part of the municipal Spatial Development Framework plans (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

- Developed climate risk assessments including adaptation and mitigation strategies for various projects, including: mining, water utilities, wind and solar farms and biofuel projects.
- Provided specialist peer review services for National Department of Environmental Affairs relating to climate change impact assessments for large infrastructure projects (2018).
- Conducted climate change impact assessment for a proposed coal-fired power station in Africa (2018).
- 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 (2016).
- Managed project to develop a Climate Change Strategies for a Metropolitan Municipality and two district municipalities in the Eastern Cape Province (2011-2013).
- 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 (2010) and a proposed Jatropha bio-diesel project in Mozambique (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

- Multispecies aquaculture hatchery and demonstration facility in the Eastern Cape Province (2019).

Strategic Environmental Assessment

- Managed Strategic Environmental Assessment (SEA) project toward the development of a Biofuel Industry in the Eastern Cape Province of South Africa (2016)
- Managed Strategic Environmental Assessment (SEA) projects for three South African ports (2006 – 2024).
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- 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).

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- 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 various projects to obtain waste licences in terms of relevant South African legislation and regulations including landfill sites, transfer stations and waste-to-energy projects.
- Managed projects to develop Integrated Waste Management Plans for eighteen (18) local municipalities and three (3) District Municipalities in the Eastern Cape Province (2008-2016).
- Managed a project to develop a zero-waste strategy for a community development in the Eastern Cape Province (2010).
- For three consecutive years, managed elements of the evaluation of the environmental financial reserves of the three largest solid waste companies in the USA (Waste Management, Inc., Republic Services, Inc., Allied Waste, Inc.) and number of smaller waste companies, as part of the annual financial audit process for SEC reporting purposes. Ensured compliance with RCRA and 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 auditing and compliance

- Conducted environmental legal compliance audit for various large Transnet Freight Rail facilities (2018).
- Lead auditor for numerous Environmental Control Officer (ECO) projects, including construction of wind and solar farms, road infrastructure, bulk water and sewage infrastructure, port infrastructure, cemeteries, etc. (2001-present).
- 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 (2002-2003).
- 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 (1999-2001).

Environmental Due Diligence and Business Risk

- Conducted numerous environmental and social due diligence (ESDD) audits for various projects including wind farms, solar projects, agro-industry projects, against national legislation, IFC Performance Standards and Equator Principles (2010 – 2024).
- Participated in project on behalf of the CDC Group (UK) to conduct a due diligence on the ESG systems and mechanisms in place for an agro-industry investment entity with considerable agricultural investments throughout Africa (2021).
- 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).
- 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

- Managed project to develop an Estuarine Management Plan for the Quinera Estuary for the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (2023).
- 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 (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 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 (2006).
- Managed project to develop an Integrated Environmental Management Plan and Integrated Coastal Zone Management Plan for Buffalo City Municipality, Eastern Cape (2005).
- Managed projects to develop and implement an Environmental Management System (EMS) for the Chris Hani and Joe Gqabi District Municipalities in the Eastern Cape generally in line with ISO14001 EMS standards (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 (2010).
- 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 & Social Management Systems

- Managed project to develop Environmental & Social Management Systems (ESMS) in line with IFC Performance Standards for a 5MW hydro-electric project in South Africa. (2023).
- Managed project to develop Environmental & Social Management Systems (ESMS) in line with IFC Performance Standards for an agricultural equipment supplier in Malawi on behalf of Norfund (2022).

- Managed projects to develop Environmental Management Systems (EMS) in line with ISO14001 EMS Standard for a South African water utility (2019).
- Managed projects to develop Environmental & Social Management Systems (ESMS) in line with IFC Performance Standards for four (4) 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).
- Conducted Environmental Management System (EMS) reviews for a number of large US corporations, including Gulfstream Aerospace Corporation.

Public financial accounting

- While with Arthur Andersen LLP (Chicago, Illinois, USA), involved in environmental liability valuations for NYSE and NASDAQ listed companies, for SEC annual reporting requirements.
- While with Ernst & Young LLP, (Austin, Texas, 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 Accountants which included auditing, accounting and preparation of tax returns for many small to medium sized commercial entities.

PUBLICATIONS

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 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, AR McMaster and AR Carter. 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, AR McMaster and AR Carter. 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, AR. 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: March 2024

SINAZO NYUDWANA
Curriculum Vitae

CONTACT DETAILS

Name of Company	**CES – Environmental and Social Advisory Services**
Designation	East London Branch
Profession	Environmental Consultant
Years with firm	1 year & 2 months
E-mail	Sinazo.Nyudwana@cesnet.co.za
Office number	+27 (0)43 726 7809
Nationality	South African
Professional Affiliations	• South African Council for Natural Scientific Professions (SACNASP) (*Cand.Sci.Nat* 139719) • International Association of Impact Assessment (IAIAsa)
Key areas of expertise	• Environmental Authorisations • Renewable Energy Development • Scientific Writing & Research • Geographical Information Systems (GIS) • Water Use Licence Applications

PROFILE

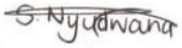
Ms Sinazo Nyudwana

Sinazo is an Environmental Consultant with experience in Basic Assessments, Water Use Licence Applications, Climate Change Risk Assessment and Public Participation. She has a background in Renewable Energy Development where her role included actively seeking new wind and solar opportunities and project permitting. She is a registered Candidate Natural Scientists (Cand.Sci.Nat.) with SACNASP. She obtained her MSc in Environmental and Geographical Science at the University of Cape Town where her research investigated the impact of climate services among commercial and smallholder farmers to improve the uptake of climate services. Her other academic qualifications include a BSc and BSc Hons in Environmental and Water Science from the University of the Western Cape.

EMPLOYMENT EXPERIENCE	**Environmental Consultant – Coastal and Environmental Services (East London)** *October 2022 – Current* • Water Use Licence Application • Basic Assessment • Climate Change Impact Assessment • Public Participation **Development Intern – Mainstream Renewable Power (Newlands, Cape Town)** *December 2018 – November 2020* • Identifying new wind & solar opportunities • Permitting • Project management (technical) • Stakeholder engagement **Call Centre Helpdesk Agent – RCS (Cape Town)** *June 2015 – February 2016* • Offer assistance & support for incoming queries • Provide product knowledge • Verify customer information & process applications • Liaise with store merchants on the progress of customer applications **Events Coordinator Volunteer – IAIAsa Western Cape Student Branch (Cape Town)** *April 2022 – February 2023* **Volunteer/Student Assistant – IAIA Climate Change Symposium 2022 (Cape Town)** *27 & 28 September 2022*
ACADEMIC QUALIFICATIONS	• 2023 - MSc Environmental & Geographical Science (University of Cape Town) • 2016 - BSc (Hons) Environmental & Water Science (University of the Western Cape) • 2014 - BSc Environmental & Water Science (University of the Western Cape)
CONTINUOUS PROFESSIONAL DEVELOPMENT	• 2023 – Environmental Assessment Practitioner, Environmental Control Officer, Site Officer & Environmental Auditor Online Course, ETAZA (Environmental Training Academy of South Africa) *18 March – 1 April 2023*
CONSULTING EXPERIENCE	• Complied various renewable energy basic assessment reports (BAR) • Compiled Climate Change Readiness Strategy for a water board • Complied Climate Change Impact Assessment for a hydropower project • Managed various Water Use Licence Applications • Conducted & coordinated public meetings as part of Public Participation

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.



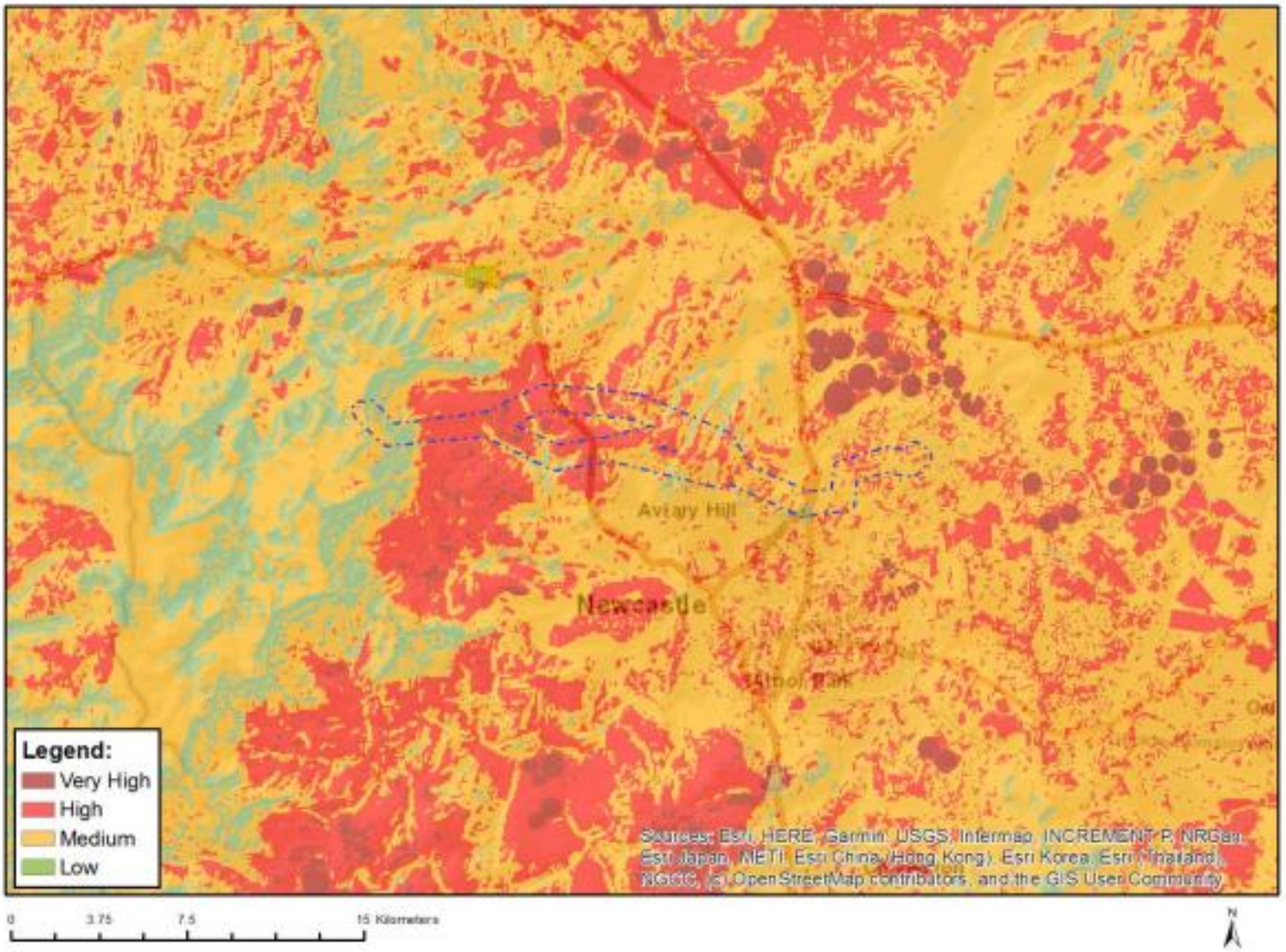
Sinazo Nyudwana Date: January 2024

APPENDIX 3: NATIONAL SCREENING TOOL REPORT & A3 SENSITIVITY MAPS

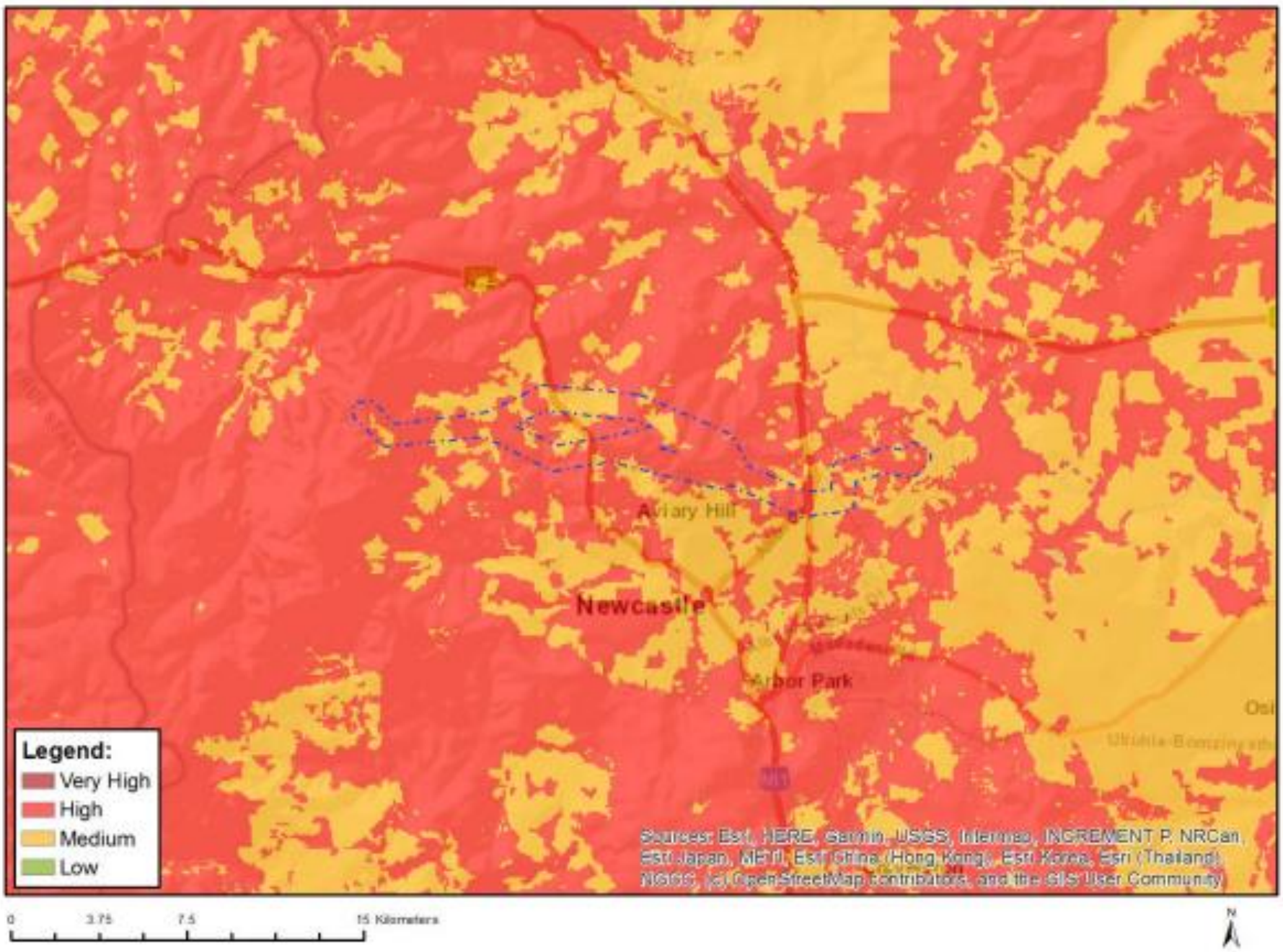
MULILO NEWCASTLE WIND POWER GRID CONNECTION: STR RESULTS					
THEME	**VERY HIGH SENSITIVITY**	**HIGH SENSITIVITY**	**MEDIUM SENSITIVITY**	**LOW SENSITIVITY**	**SENSITIVITY FEATURES AS PER STR**
AGRICULTURE THEME					**Very High:** Land capability; 11. High/12. High-Very high/13. High-Very high/14. High-Very high/15. Very high; Annual Crop Cultivation/ Planted Pastures Rotation; Land capability;11. High/12. High-Very high/13. High-Very high/14. High-Very high/15. Very high; Pivot Irrigation; Land capability;09. Moderate-High/10. Moderate-High; Pivot Irrigation;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate **High**: Land capability;09. Moderate-High/10. Moderate-High; Annual Crop Cultivation / Planted Pastures Rotation;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate. **Medium**: Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate **Low**: Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
ANIMAL SPECIES THEME					**High:** Aves-Sagittarius serpentarius; Aves-Circus ranivorus; Aves-Neotis denhami; Aves-Balearica regulorum; Aves-Polemaetus bellicosus; Aves-Geronticus calvus; Aves-Eupodotis senegalensis; Aves-Sylvia nigricapillus Medium: Aves-Neotis denhami; Aves-Circus ranivorus; Aves-Ciconia nigra; Aves-Hydroprogne caspia; Aves-Eupodotis senegalensis; Aves-Grus carunculate; Aves-Anthus chloris; Aves-Tyto capensis; Mammalia-Chrysospalax villosus; Mammalia-Crocidura maquassiensis; Mammalia-Hydrictis maculicollis; Mammalia-Ourebia ourebi ourebi; Invertebrate-Clonia lalandei

AQUATIC BIODIVERSITY THEME	X				**Very High:** FEPA Subcatchment; SWSA (SW) _Northern Drakensberg; Wetlands_Sub-Escarpment Grassland Bioregion (Depression); Wetlands_Sub-Escarpment Grassland Bioregion (Seep); Wetlands_Sub-Escarpment Grassland Bioregion (Valley-bottom) **Low:** Low sensitivty
ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME				X	**Low:** Low sensitivity
CIVIL AVIATION THEME		X			**High:** Within 8 km of other civil aviation aerodrome **Medium:** Between 8 and 15 km of other civil aviation aerodrome **Low:** Low sensitivity
DEFENCE THEME				X	**Low:** Low sensitivity
PALAEONTOLOGY THEME	X				**Very High:** Features with a Very High paleontological sensitivity **High:** Features with a High paleontological sensitivity
PLANT SPECIES THEME			X		**Medium:** Ocotea bullata Medium Sensitive species 1252; Lotononis amajubica; Sensitive species 998; Sensitive species 1086; Polygala praticola; Sensitive species 1248; Sensitive species 851; Prunus africana
TERRESTRIAL BIODIVERSITY THEME	X				**Very High:** ESA; CBA: Optimal; CBA: Irreplaceable; FEPA Subcatchment; SWSA (SW) _Northern Drakensberg; National Protected Area Expansion Strategy (NPAES); VU_Northern KwaZulu-Natal Moist Grassland **Low:** Low sensitivity

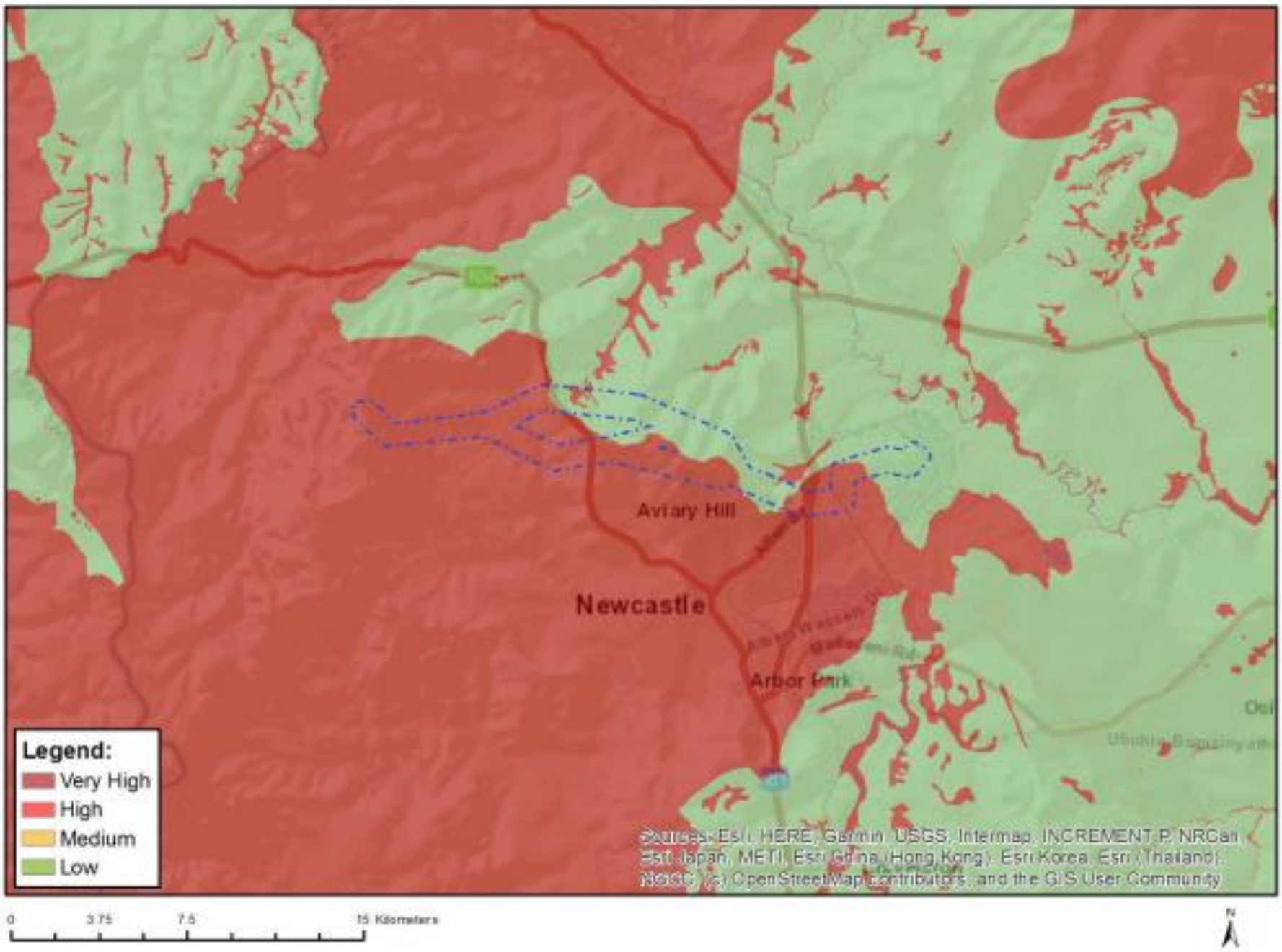
MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



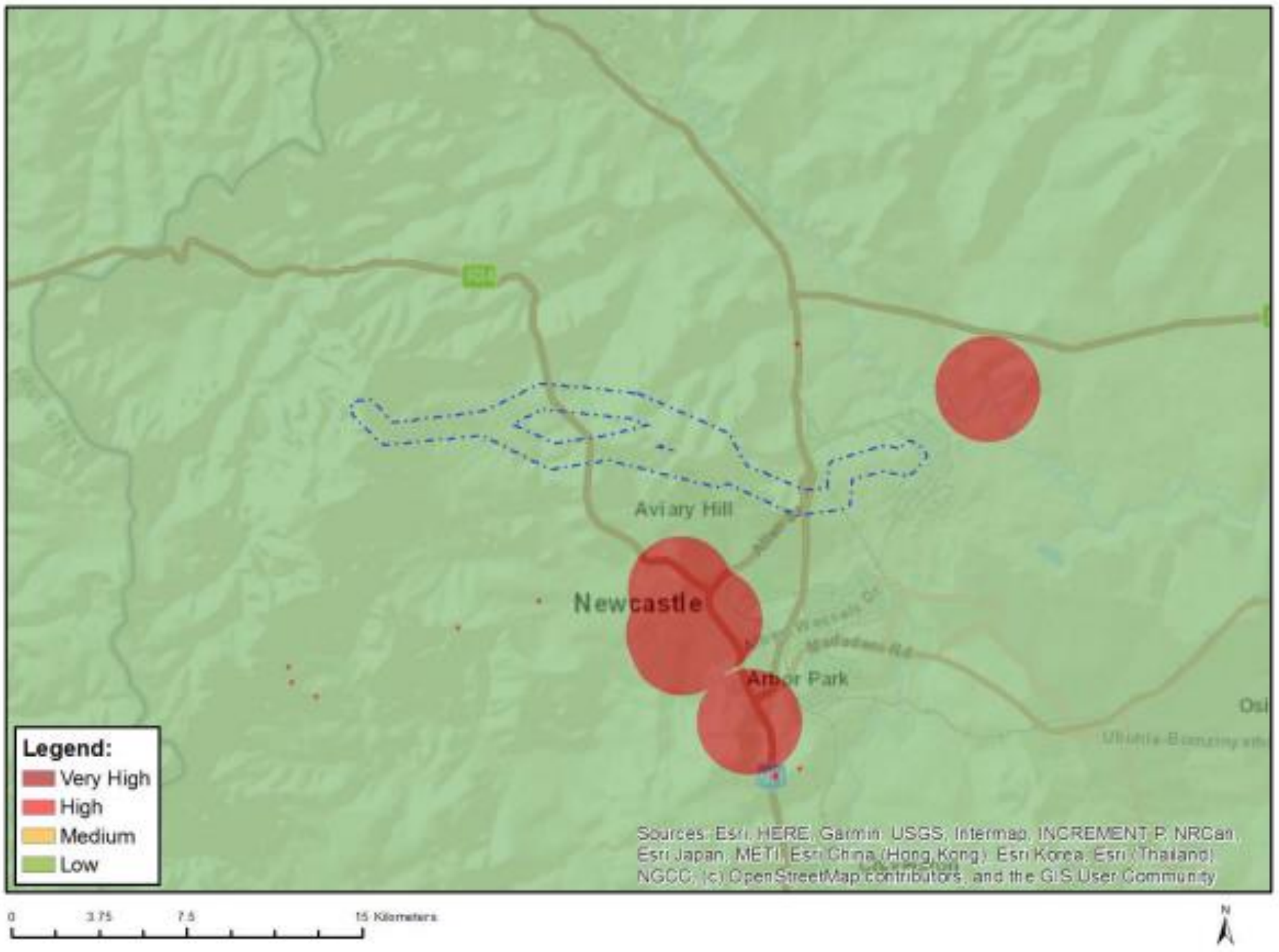
MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



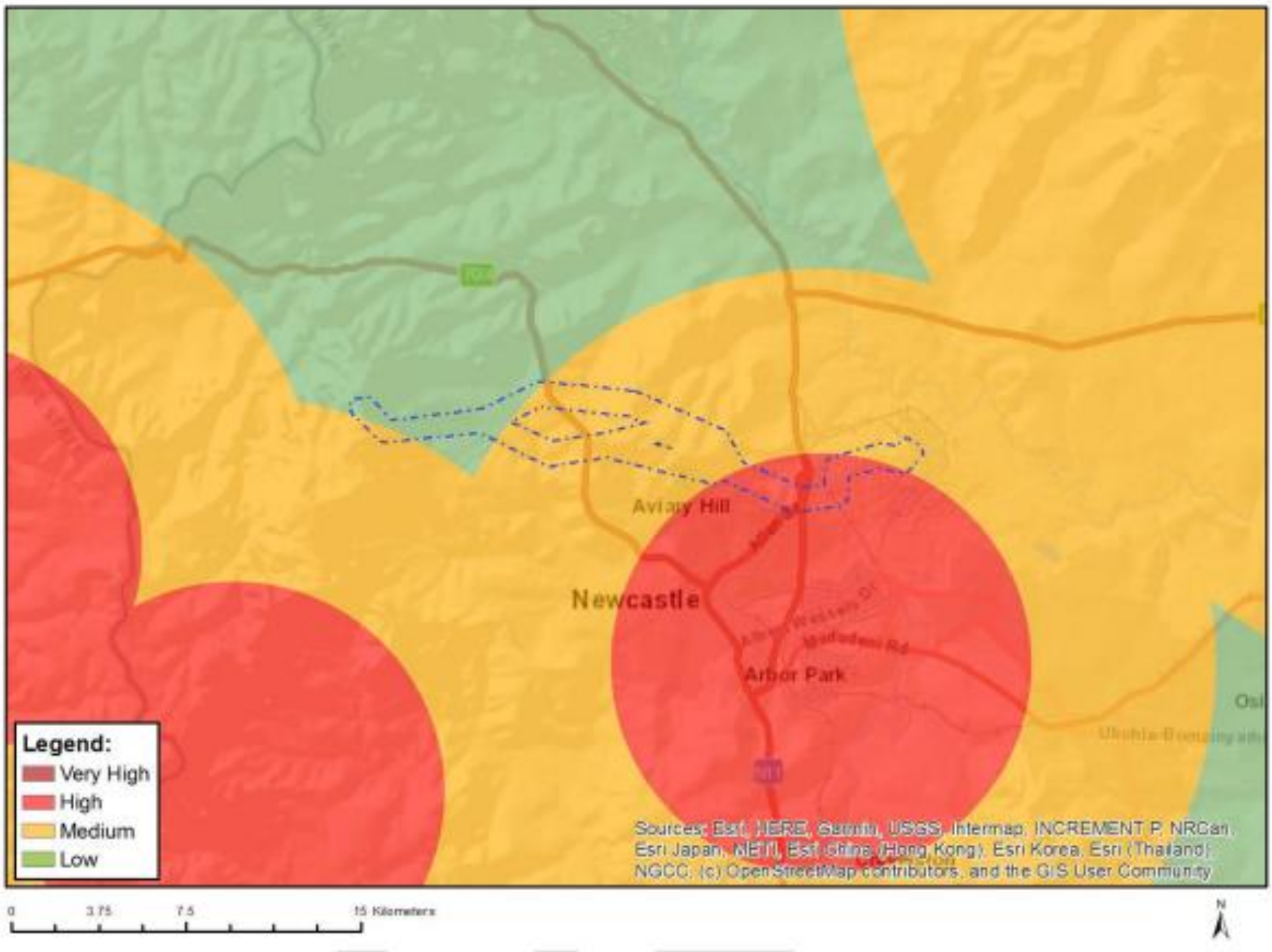
MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY



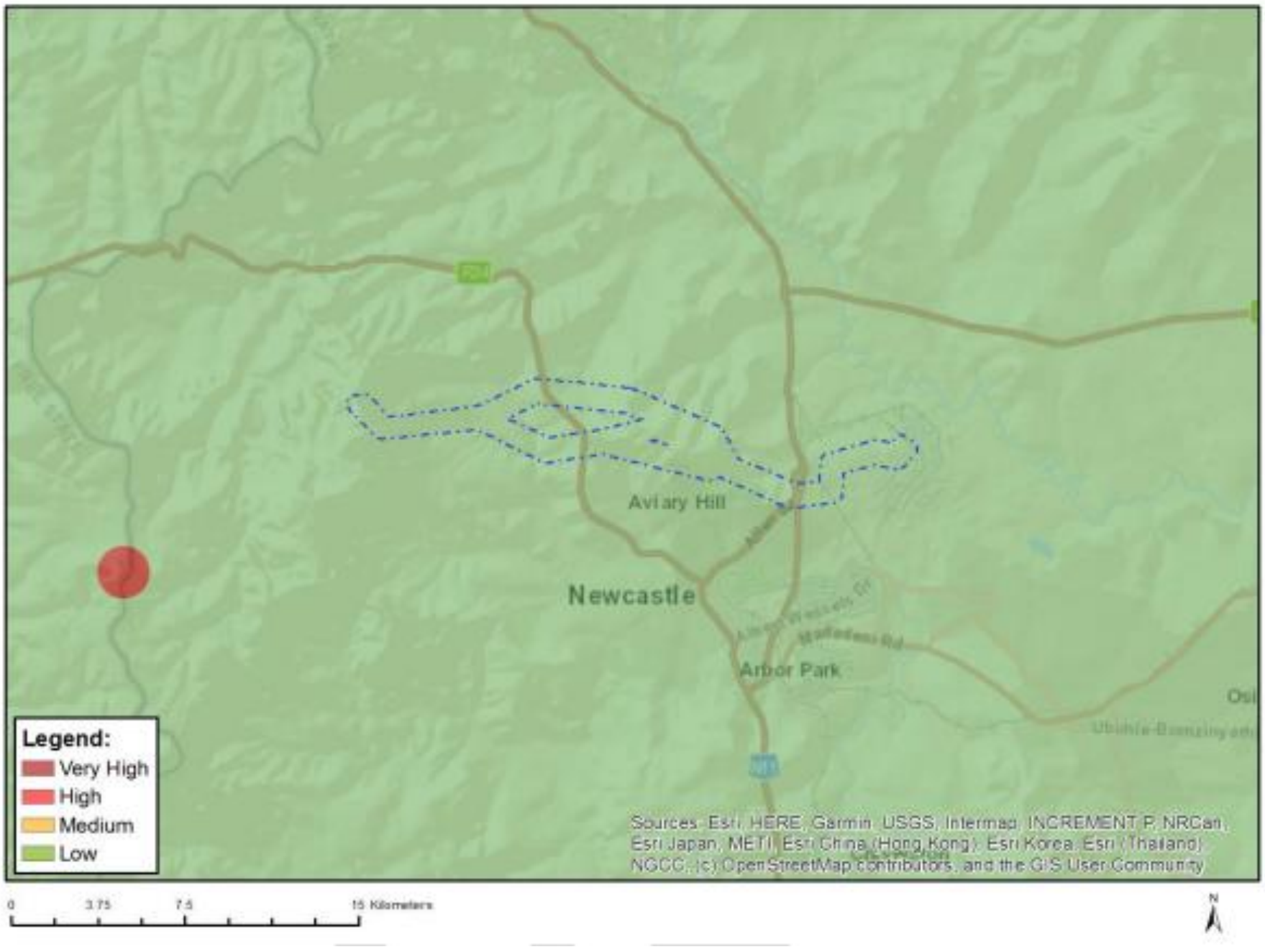
MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



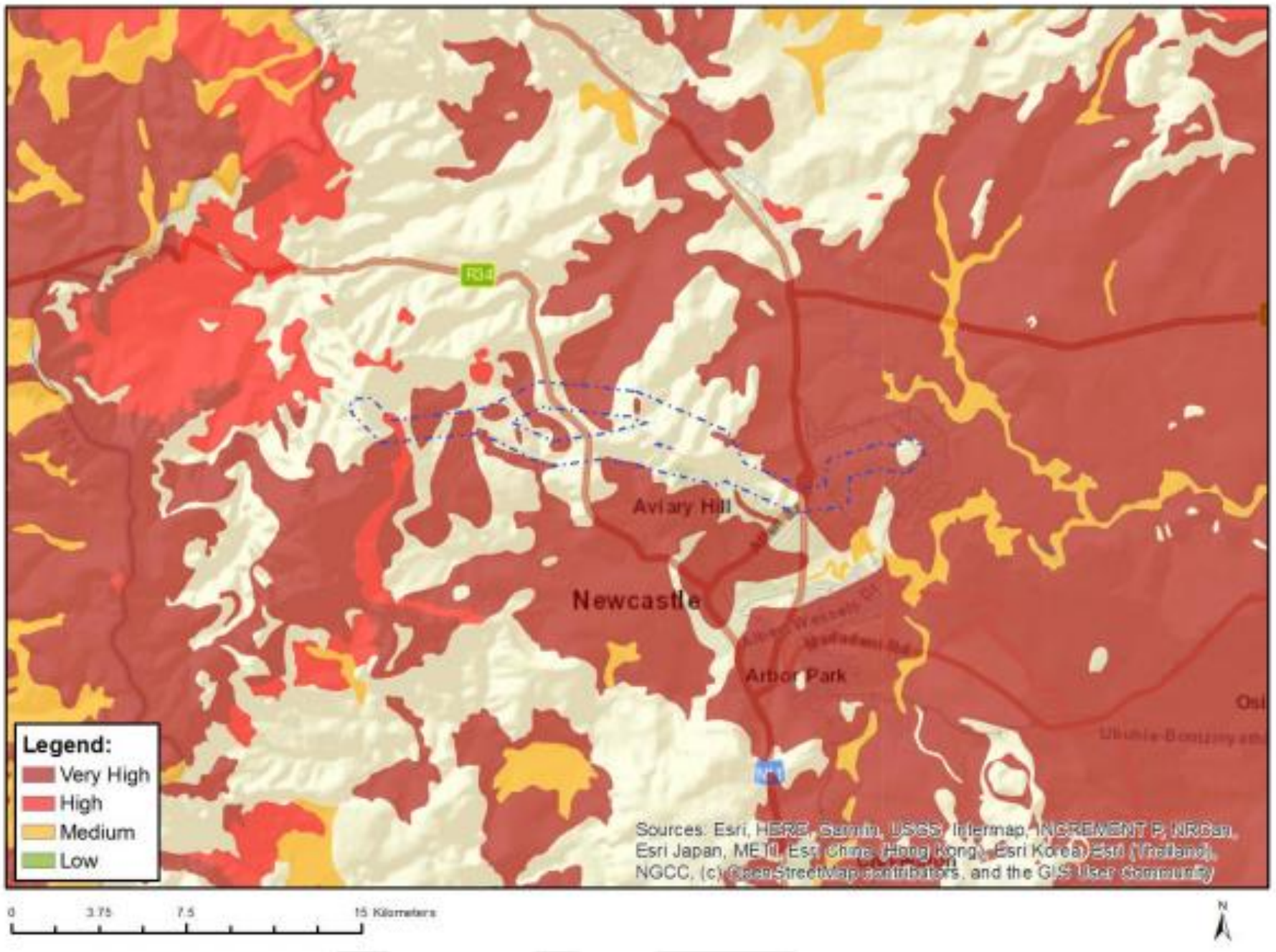
MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY



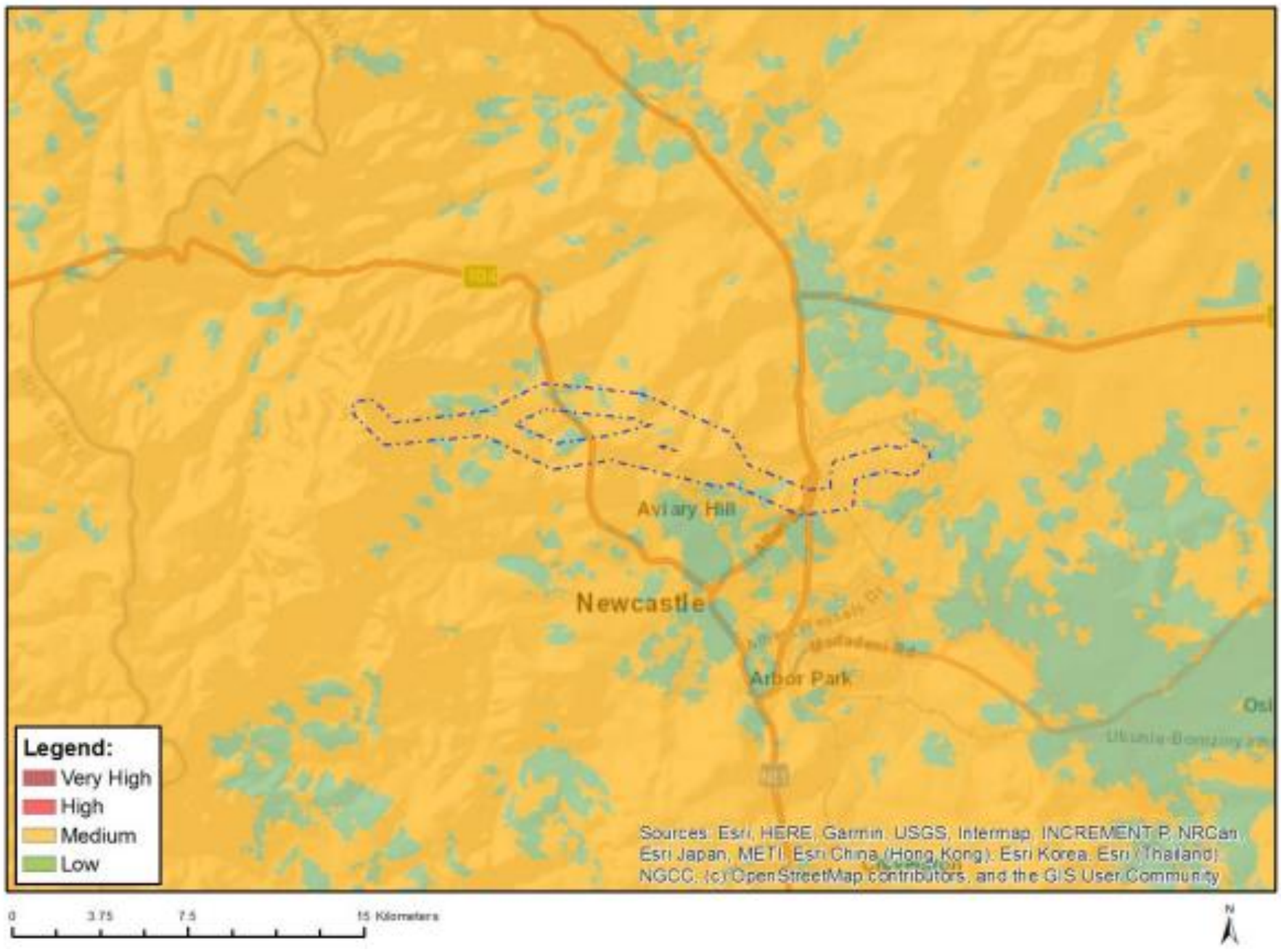
MAP OF RELATIVE DEFENCE THEME SENSITIVITY



MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY



MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY