

COEGA DEVELOPMENT CORPORATION

WILD COAST SPECIAL ECONOMIC ZONE, MTHATHA

PRELIMINARY ENVIRONMENTAL
MANAGEMENT PROGRAMME REPORT (REF:
14/12/16/3/3/2/1064)

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SIGNATURES

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This Preliminary Environmental Management Programme report (Report) has been prepared by WSP Environmental Proprietary Limited (WSP) on behalf and at the request of Coega Development Corporation (Client), to provide the Client with an understanding of the mitigation and management measures associated with the Wild Coast Strategic Economic Zone (SEZ).

Unless otherwise agreed by us in writing, we do not accept responsibility or legal liability to any person other than the Client for the contents of, or any omissions from, this Report.

To prepare this Report, we have reviewed only the documents and information provided to us by the Client or any third parties directed to provide information and documents to us by the Client. We have not reviewed any other documents in relation to this Report, except where otherwise indicated in the Report.

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GLOSSARY

ABBREVIATION	MEANING
APPA	Atmosphere Pollution Prevention Act
AQA	Air Quality Act
BA	Basic Assessment
BLMCs	Biodiversity Land Management Classes
BPO	Business Process Outsourcing
CBA	Critical Biodiversity Area
CDC	Coega Development Corporation
CRR	Comment and Response Report
DEA	Department of Environmental Affairs
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DEO	Designated Environmental Officer
DoT	Department of Transport
DSR	Draft Scoping Report
DPW	Department of Public Works
DTI	Department of Trade and Industry
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECBCP	Eastern Cape Biodiversity Conservation Plan
EC	Eastern Cape
EIA	Environmental Impact Assessment

ABBREVIATION**MEANING**

EIAR	Environmental Impact Assessment Report
EMP	Environmental Management Programme
FSR	Final Scoping Report
ha	Hectares
HV	High Voltage
ICT	Information and Communications Technology
IDP	Integrated Development Plan
IDZ	Industrial Development Zone
IPAP	Industrial Policy Action Plan
KSDLM	King Sabata Dalindyebo Local Municipality
NDP	National Development Plan
NEMA	National Environmental Management Act
NPAES	National Protected Areas Expansion Strategy
ORTDM	O.R. Tambo District Municipality
PES	Present Ecological State
PIDS	Provincial Industrial Development Strategies
PMO	Project Management Office
POC	Potential Occurrence
QDGS	Quarter Degree Grid Square
S&EIR	Scoping and Environmental Impact Reporting
SABAP	South African Bird Atlas Project
SAHRIS	South African Heritage Resources Information System
SANRAL	South African National Roads Agency Limited

ABBREVIATION	MEANING
SAWS	South African Weather Services
SDF	Spatial Development Framework
SEZ	Special Economic Zone
SMME	Small and Medium Sized Enterprises
SoE	State-Owned Enterprise
t	Tonnes
TIA	Traffic Impact Assessment
WCSEZ	Wild Coast Special Economic Zone
WMA	Water Management Area
WMCO	Waste Management Control Officer
WMP	Waste Management Plan
WSP	WSP Environmental (Pty) Ltd

1 INTRODUCTION

1.1 BACKGROUND

The Department of Trade and Industry (DTI) developed the special economic zone (SEZ) policy to support and accelerate industrial development in targeted regions where socio-economic growth has been problematic. This would be achieved by the provision of special measures needed to develop targeted industrial and agricultural capabilities and attract targeted foreign and domestic direct investment. The SEZ policy has four (4) specific objectives:

- Support the development of targeted industrial capabilities and attract foreign and domestic direct investments in support of the Industrial Policy Action Plan (IPAP) and Provincial Industrial Development Strategies (PIDS's), under the over-arching National Development Plan (NDP);
- Develop world-class industrial infrastructure in line with the requirements of the targeted industries and investments;
- Promote beneficiation and further value addition of the country's mineral and agricultural resources; and
- Contribute to the creation of sustainable jobs and increase exports of beneficiated commodities in the targeted regions.

The Wild Coast Special Economic Zone (WCSEZ) is intended to address the under-development of industry and agriculture in the Wild Coast region, the elevated unemployment levels, particularly among the youth, and unacceptable high levels of poverty.

The viability of the proposed WCSEZ will depend on the suggested approach, which will be phased.

- 1) Phase 1 – mainly Sector development cluster (Agro-processing Sector) housing facilities to unlock the primary sector with the hub near Mthatha Airport.
- 2) Phase 2 – Services Sector that will focus on the support industries for Agro-processing. This could include Logistics and Distribution, Business Process Outsourcing (BPO), Call Centres and others. Further investigations need to be done to enhance the value proposition and viability of this Sector. This second Phase will also contain value added support infrastructure such as accommodation, skills and training centre, a commercial node and innovation and industrial services nodes.

It is envisioned that increased commercial activity in the area will assist in the development of the tourism sector.

The Coega Development Corporation (CDC) is a state-owned enterprise (SoE) based in the Nelson Mandela Bay Municipality with operations throughout South Africa. The CDC is mandated to develop and operate the 11 500 ha Coega Industrial Development Zone (IDZ), which was established in 1999. To this end, the CDC is tasked with the responsibility to create employment, provide training and development, and Small and Medium Sized Enterprises (SMME) support and development opportunities, in order to reduce unemployment, inequalities, and to eradicate poverty in the Eastern Cape (EC), with a focus on Nelson Mandela Bay Metro, in particular. Therefore, the CDC's vision is to be the leading catalyst for the championing of socio-economic growth. Its mission is to provide a competitive investment location supported by value added business services that effectively enables socio-economic development in the EC and the rest of South Africa. In the 17 years since its establishment, the CDC has become South Africa's most successful IDZ and has matured to become one of the biggest drivers of job creation and development of the EC economy. It is purpose-designed following the cluster model, which strategically positions related and synergistic industries and their supply chains in close proximity to one another in order to maximise efficiency and minimize turnaround times. The Coega IDZ is demarcated into 14 zones, with the focus being placed on the following sectors:

- Metals/Metallurgical;
- Automotive;
- BPO;
- Chemicals;
- Agro-processing;

- Logistics;
- Trade Solutions;
- Energy; and
- Maritime.

The CDC strives to improve the delivery of infrastructure in the EC by addressing skill shortages, unemployment, constrained planning and project management capacity, under-expenditure, sub-standard infrastructure, and inefficiencies that characterise delivery of infrastructure by government in South Africa generally and the EC in particular. In the process, the CDC advances socio-economic development and transformation within the EC and South Africa as a whole.

The proposed project site for the WCSEZ is directly adjacent to the Mthatha Airport, with boundaries at both the north and the south of the airport as shown in **Figure 1-1** below. The site is north of the R61 and to the south of the Mthatha Dam.

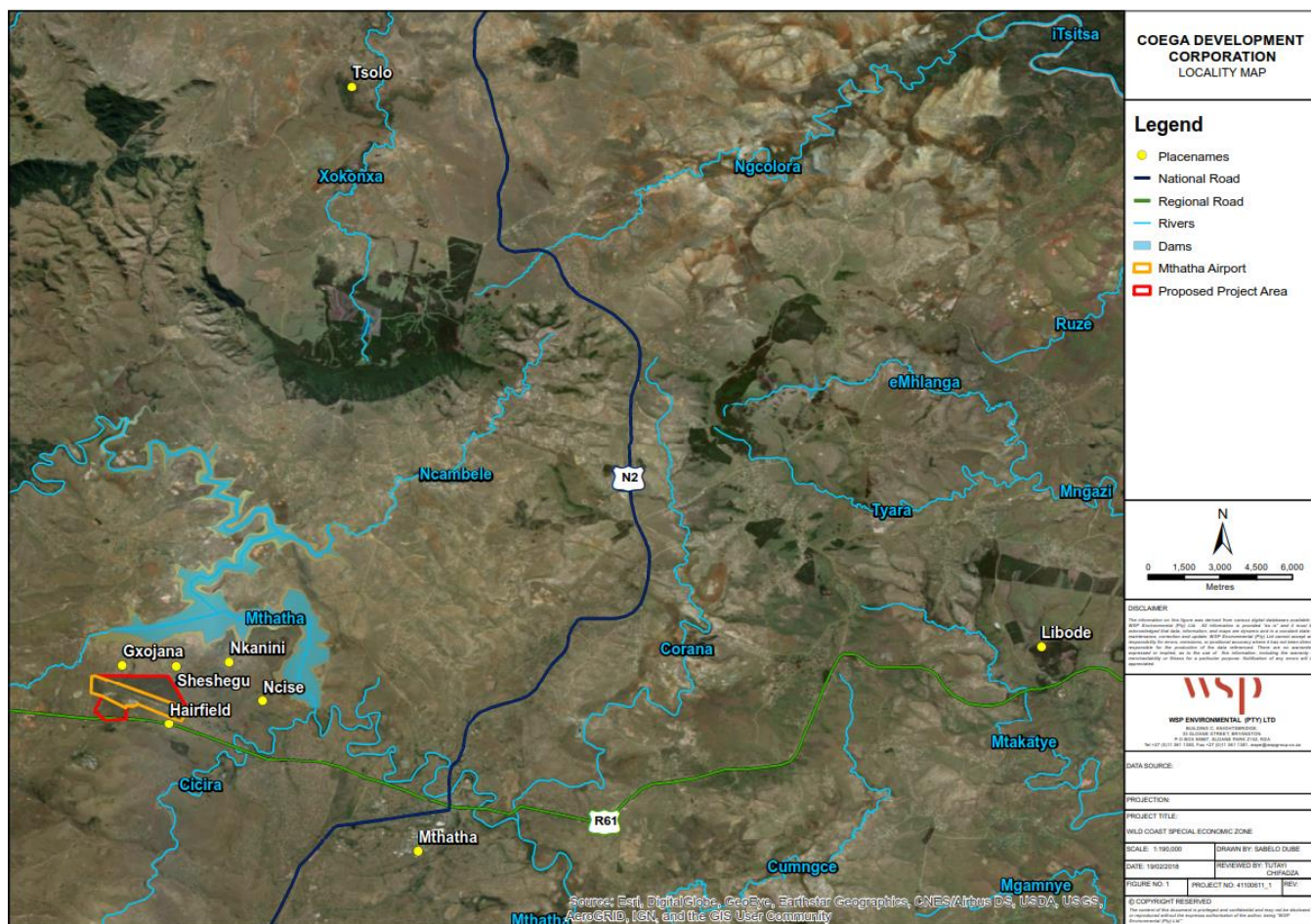


Figure 1-1: Locality Map

1.2 ENVIRONMENTAL ASSESSMENT PRACTITIONER

WSP Environmental (Pty) Ltd (WSP) has been appointed in the role of Independent Environmental Assessment Practitioner (EAP) to undertake the Scoping and Environmental Impact Report (S&EIR) process for the development of the SEZ. The CV of the EAP is available in **Appendix A**. The EAP declaration of interest and undertaking is included in **Appendix B**. **Table 1-1** details the relevant contact details of the EAP. In order to

adequately identify and assess potential environmental impacts, the EAP will be supported by a number of specialists.

Table 1-1: Details of the Environmental Assessment Practitioner

ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)	WSP ENVIRONMENTAL (PTY) LTD
Company Registration:	1995/08790/07
Contact Person:	Tutayi Chifadza
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1.3 ENVIRONMENTAL MANAGEMENT PROGRAMME STRUCTURE

Table 1-2 cross-references the sections within the Environmental Management Programme Report (EMPr) with the legislated requirements as per Appendix 4 of GNR 326.

Table 1-2: Legislation Requirements as Detailed in Appendix 4 of GNR 326

APPENDIX 3 LEGISLATED REQUIREMENTS AS PER THE NEMA GNR 326	RELEVANT REPORT SECTION
(a)	Details of
	i) the EAP who compiled the EMPr; and
	ii) the expertise of the EAP, including a Curriculum Vitae
(b)	Detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;
(c)	A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;
(d)	A description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-

APPENDIX 3 LEGISLATED REQUIREMENTS AS PER THE NEMA GNR 326

**RELEVANT
REPORT SECTION**

	i) Planning and design;	Section 3
	ii) Pre-construction activities;	Section 4
	iii) Construction activities	Section 7
	iv) Rehabilitation of the environment after construction and where applicable post closure; and	
	v) Where relevant, operation activities.	
(e)	A description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Section 7
(f)	A description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to -	
	i) Avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;	Section 7
	ii) Comply with any prescribed environmental management standards or practices;	
	iii) comply with any applicable provisions of the Act regarding closure, where applicable; and	
	iv) Comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable	
(g)	The method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 6
(h)	The frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 6
(i)	An indication of the persons who will be responsible for the implementation of the impact management actions;	Section 6 Section 7
(j)	The time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 7
(k)	The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 6
(l)	A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations	Section 6
(m)	An environmental awareness plan describing the manner in which-	
	i) The applicant intends to inform his or her employees of any environmental risk which may result from their work; and	Section 6
	ii) Risks must be dealt with in order to avoid pollution or the degradation of the environment; and	
(n)	any specific information that may be required by the competent authority	N/A

1.4 APPLICABLE DOCUMENTATION

The following documents are to be read in conjunction with the EMPr:

- Environmental Impact Assessment Report (EIAR) for the proposed WCSEZ; and
- Environmental Authorisation (EA) issued by the Department of Environmental Affairs (DEA) in terms of NEMA (still to be issued).

2 GOVERNANCE FRAMEWORK

The South African regulatory framework establishes well-defined requirements and standards for environmental and social management of industrial and civil infrastructure developments. Environmental protection functions are carried out by different authorities at both national and regional levels. The applicable legislation and policies are shown below:

- The Constitution of South Africa (No. 108 of 1996);
- The National Environmental Management Act (No. 107 of 1998);
- The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008);
- The National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004);
- The National Water Act, 1998 (Act No. 36 of 1998);
- The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004);
- The Conservation of Agricultural Resources Act (No. 43 of 1983);
- The National Heritage Resource Act (Act No. 25 of 1999);
- The Transkei Environmental Conservation Decree (No. 9 of 1992);
- The Eastern Cape Provincial Development Plan (2030);
- The O.R. Tambo District Municipality Spatial Development Framework (SDF); and
- The King Sabata Dalindyebo Local Municipality IDP (2016/17).

The detailed description and applicability of the above mentioned legislation and frameworks can be reviewed from the Final EIAR.

3 PROJECT DESCRIPTION

3.1 LOCATION OF THE PROPOSED DEVELOPMENT

The criteria for selecting a suitable location for the SEZ are based on those characteristics required for the development of a commercial node such as an Agri-park, SEZ and other sectoral nodes. The main characteristics required are as follows:

- a) Proximity to residential areas, being an industrial development node a radius of five to ten kilometres was used;
- b) Demographics must favour a skilled to semi-skilled and employable age population of between 18 and 55 years old;
- c) Potential economic opportunities;
- d) Accessibility to various modes of transport is recommended, i.e. rail, port, aerodrome and road for the transportation of raw materials and finished goods to markets;
- e) Quality bulk infrastructure to support the identified economic cluster. Bulk infrastructure includes high voltage (HV) electricity, water, sewerage, roads and storm water management and Information and Communications Technology (ICT);
- f) Favourable environmental conditions, not within designated biodiversity areas and with accept space envelop;
- g) Relatively flat, with good drainage and geologically sound;
- h) Physical land requirement of approximately 100-500 ha, preferably Municipal owned and zoned for industrial purposes; and
- i) Alignment to current development strategies.

The pre-feasibility study identified the area around the Mthatha Airport as meeting the above criteria. However, land ownership in this area is very sensitive and the traditional authorities (chiefs) believe that they own the land. The traditional structures and local authorities have been identified and negotiations to secure the land for Phase 1 of the WCSEZ have progressed as far as achieving an agreement. There already is a community structure elected to deal with land issues and future developments in this area.

The land earmarked for Phase 1 of the WCSEZ is deemed to be within the Mthatha Airport precinct and was therefore believed to be under the ownership of government. While this may be true to some extent, in that the Minister of the National Department of Transport (DoT) is deemed to have custodianship of all Airport land, in actual fact the land has not been vested in the National Department of Public Works (DPW) because it was never surveyed and, as such, has no Surveyor General Diagrams. Consequently, while in practice the EC DoT is undertaking developments on the land, vesting from DPW is still outstanding.

The Mthatha area was chosen in order to boost the economic power in the region. At this point, the main areas in the Eastern Cape that enjoy the majority of the economic power are Port Elizabeth and East London respectively. As such, in order to raise the economic profile of Mthatha as well as the surrounding small towns and villages, the area was chosen as the location for powerful node to help solve the unemployment and economic gap in the region. This will see the development of the first rural metro in the country.

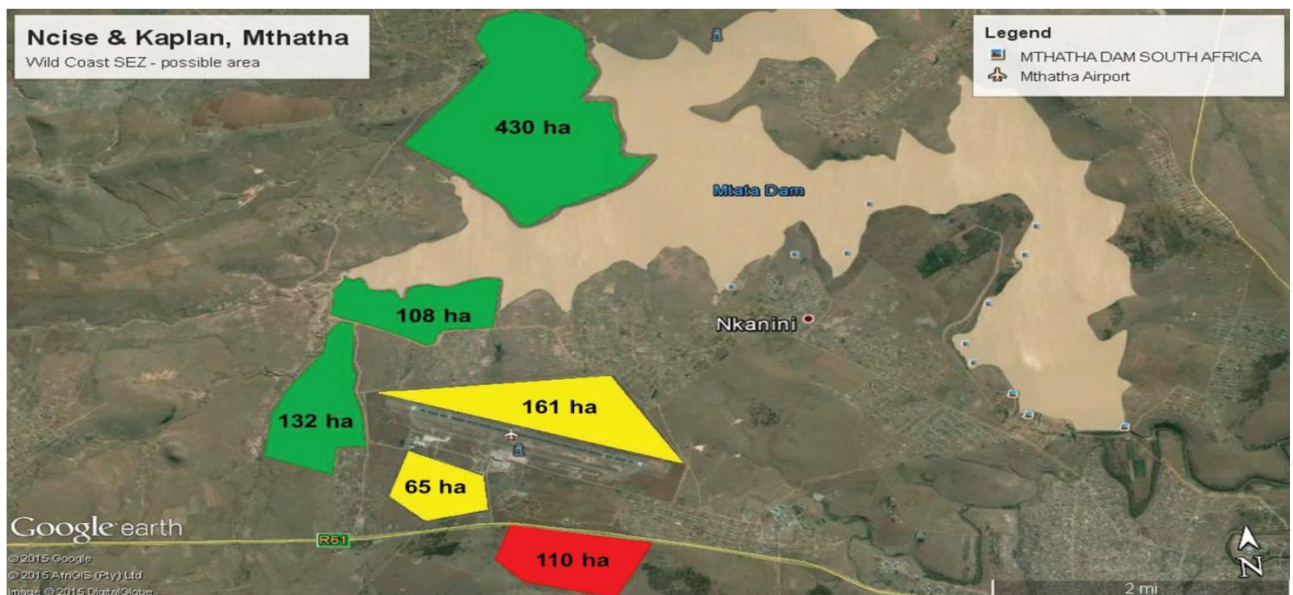


Figure 3-1: Phase 1 Area in Yellow

The following environmental sensitivities were identified on the site and will require specific applications or measures for mitigation to minimise impact. The proposed project site is located in the following sensitive environments:

- CBA 1 and 2 area;
- Protected area, namely the Nduli Luchaba Nature Reserve;
- Listed ecosystem (Mthatha Moist Grassland, classified as Vulnerable);
- Very high sensitivity palaeontological area; and
- Four wetland areas.

A map of the potential sensitivities that were investigated is shown in Error! Reference source not found. below.

The presence of the Mthatha Moist Grassland raises the consideration of a Biodiversity Offset Plan. Due to the high costs and amount of time required, an offset plan is considered as a last resort. As such, this project will not pursue a Biodiversity Offset Plan but will rather settle to conserve a good part of the site and not develop it based on the new proposed layout as indicated in **Figure 3-3.**

An alternative plan has been made to limit the amount of sensitive area cleared for development and conserve part of it on the site. As such, no development will occur on Wetlands 1 and 2 including the grassland area enclosed by Wetland 2. Therefore, development will only occur on the space between Wetland 1 and 2 as well as to the east of Wetland 2 (outside the buffer) including over Wetlands 3 and 4.

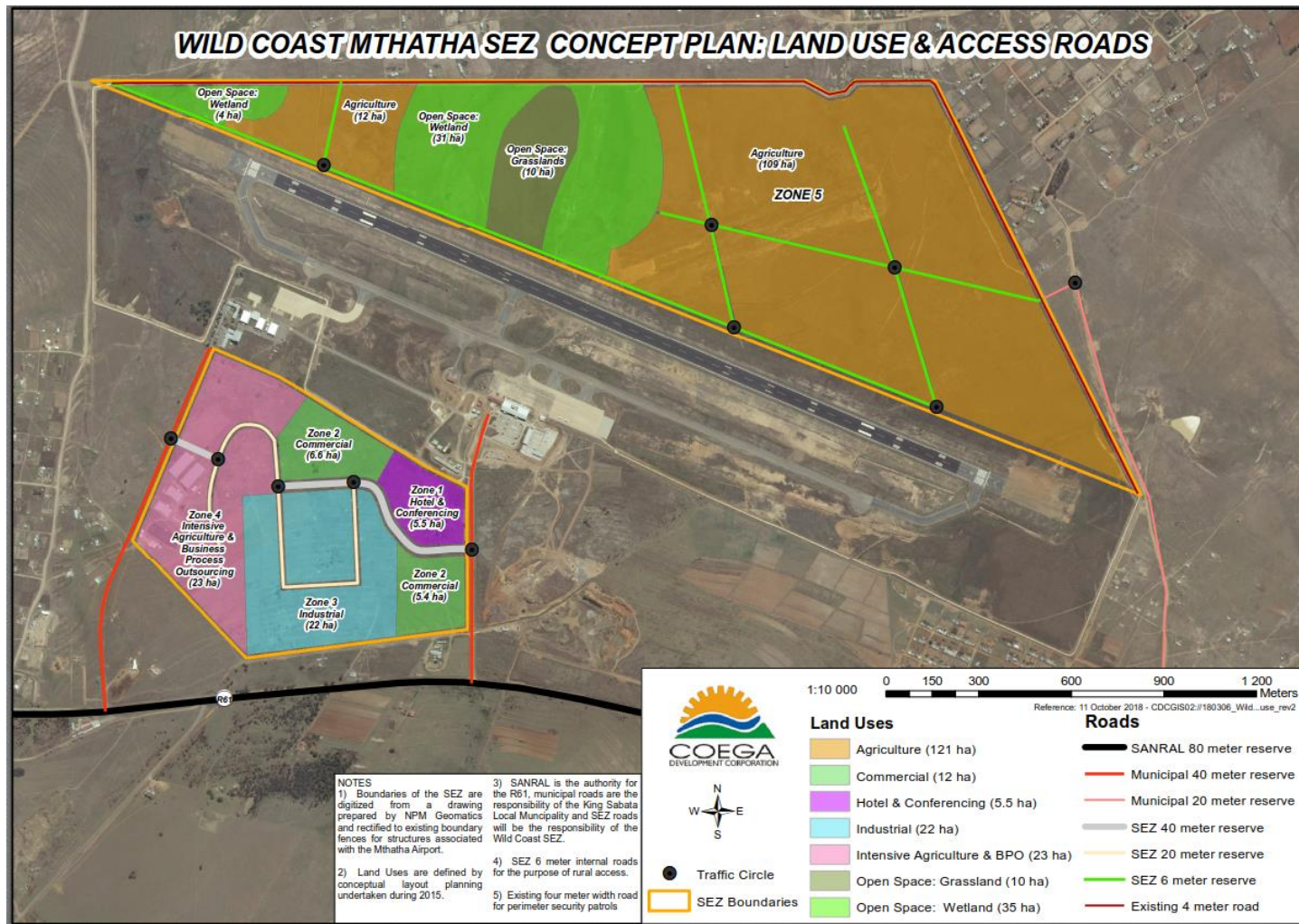


Figure 3-3: New Proposed Development Footprint

3.2 NEED AND JUSTIFICATION

The SEZ will open opportunities for job creation during construction and operational phases. Given the existing limited economic activities in the Wild Coast region, it anticipated that at least 60% of the required plant and machine operators can be sourced locally and they would already be trained and have gained experience. However, a likely balance of 40% of the required plant and machine operators will need to be trained. Typically, it takes three months to train and license an operator and, in the case of overhead cranes, heavy equipment and interlink trucks, it will take approximately six months. However, what ameliorates the situation in the Wild Coast region, and even gives an advantage, is that it is an area where there are many retrenched mineworkers and many of these workers have plant and machine operating skills developed to a high level.

It is expected that the total economy-wide value-add for the EC Province will increase by R826.4 million per annum, resulting from the development of the WCSEZ. In summary, the cumulative contribution of the proposed WCSEZ to the EC economy is expected to be R28.4 billion over a period of 30 years.

Other strengths of the proposed project include:

- Availability of primary sector for agro-processing industry in the Wild Coast region;
- Land available for development;
- Existing Airport infrastructure for logistics;
- Equidistance to local high growth markets such as Durban in the North Easterly direction and Buffalo City/Nelson Mandela Bay in the South Westerly direction;
- Excellent ease of doing business relative to other African countries;
- Strong industrial potential and logistics relative to other underdeveloped areas;
- Availability of potential labour for semi-skilled and unskilled Human Capital;
- Relatively cheap lifestyle compared to the rest of the country;
- Fulfils the goals of the KSDLM spatial development framework (SDF) which seeks to access land around the towns and settlements for formalised economic development including retail, office and commercial uses;
- Closer to the main roads, R61 and N2 for logistics linkages; and
- There is political will in the Province to foster the development of the WCSEZ.

Furthermore, the opportunities presented created by the project include:

- Develop WCSEZ into a state of the art zone, supplying larger markets within the agro-processing, Services and Tourism Sectors;
- Service a highly lucrative market through the existing infrastructure base in South Africa;
- Profitability and viability of projects and WCSEZ;
- Stimulate regional and national economic activity;
- Increase local employment through skills development and skills transfer initiatives;
- Strengthen South Africa's industrial capabilities;
- Improve economic outlook of the EC Province and the country; and
- Create employment and business opportunities for citizens of the WC Region and EC generally.

In addition to the reasons above, it must also be noted that the O.R. Tambo District Municipality Council has endorsed the Wild Coast SEZ a number of times in its Strategic Planning and IDPs. It currently has a draft District Development Plan Vision 2030 that again integrates the SEZ.

4 IMPACT ASSESSMENT

A summary of the identified impacts and corresponding (initial and residual) significance ratings for the proposed development is provided in **Table 4-1** below.

Table 4-1: Impact Summary

NO.	IMPACT DESCRIPTION	PHASE	WITHOUT MITIGATION		WITH MITIGATION	
			SIGNIFICANCE	STATUS	SIGNIFICANCE	STATUS
C1	Climate Change	Construction	Low	(-)	Low	(-)
C2	Change of Slope	Construction	Low	(-)	Low	(-)
C3	Soil Erosion	Construction	High	(-)	Medium	(-)
C4	Soil Contamination	Construction	Medium	(-)	Low	(-)
C5	Surface Water Contamination	Construction	Medium	(-)	Low	(-)
C6	Destruction and Modification of Wetlands	Construction	High	(-)	Medium	(-)
C7	Flow Modification	Construction	High	(-)	Medium	(-)
C8	Groundwater Contamination	Construction	Medium	(-)	Low	(-)
C9	Dust and Exhaust Emissions	Construction	Medium	(-)	Low	(-)
C10	Physical Destruction of Flora and Fauna	Construction	High	(-)	Medium	(-)
C11	Degradation and Fragmentation of Habitat	Construction	Medium	(-)	Low	(-)
C12	Pollution of Soil, Water and Vegetation	Construction	Medium	(-)	Low	(-)
C13	Nuisance Factors (Noise, Vibrations, Light)	Construction	Medium	(-)	Medium	(-)
C14	Damage to Heritage Resources	Construction	Low	(-)	Low	(-)
C15	Damage to Palaeontological Resources	Construction	Low	(-)	Low	(-)
C16	Increased Traffic on Local and Site Road Network	Construction	Low	(-)	Low	(-)
C17	Employment and Skills Development	Construction	Low	(+)	Medium	(+)
O1	Soil Erosion	Operation	High	(-)	Medium	(-)

NO.	IMPACT DESCRIPTION	PHASE	WITHOUT MITIGATION		WITH MITIGATION	
			SIGNIFICANCE	STATUS	SIGNIFICANCE	STATUS
O2	Soil Contamination	Operation	Low	(-)	Low	(-)
O3	Surface Water Contamination	Operation	Medium	(-)	Low	(-)
O4	Destruction and Modification of Wetlands	Operation	Medium	(-)	Low	(-)
O5	Flow Modification	Operation	High	(-)	Medium	(-)
O6	Groundwater Contamination	Operation	Low	(-)	Low	(-)
O7	Odour	Operation	Low	(-)	Low	(-)
O8	Degradation and Fragmentation of Habitat	Operation	Medium	(-)	Low	(-)
O9	Pollution of Soil, Water and Vegetation	Operation	Medium	(-)	Low	(-)
O10	Nuisance Factors (Noise, Vibrations, Light)	Operation	Medium	(-)	Medium	(-)
O11	Increased Traffic on Local and Site Road Network	Operation	Low	(-)	Low	(-)
O12	Employment and Skills Development	Operation	Low	(+)	Low	(+)

5 ENVIRONMENTAL MANAGEMENT OBJECTIVES

The EMPr has the following objectives:

- Encourage good management practices through planning and commitment to environmental issues;
- Prevent water wastage;
- Minimise disturbance of the natural environment;
- Prevent or minimise all forms of pollution;
- Promote the reduction, reuse, recycling and recovery of waste;
- Adopt the best practical means available to prevent or minimise adverse environmental impacts;
- Comply with all applicable laws, regulations, standards and guidelines for the protection of the environment;
- Develop waste management practices based on prevention, minimisation, recycling, treatment or disposal of waste;
- Describe all monitoring procedures required to identify impacts on the environment; and
- Train onsite personnel with regard to their environmental obligations.

Please note: This EMPr is a working document and therefore subject to change depending on the requirements of the various project phases. When applicable, these changes are to be approved in accordance with legislative requirements.

5.1 ENVIRONMENTAL OBJECTIVES AND TARGETS

To facilitate compliance to the EMPr, the CDC must comply with all relevant legislation and standards and make personnel aware of the requirements of the EMPr as well as the prescribed penalties should a non-conformance be identified during the different phases of the proposed project.

It is recommended that environmental objectives (as outlined in this document) be emphasised to the CDC as minimum requirements. Objectives include:

- Encourage good management practices through planning and commitment to environmental issues; and
- Provide rational and practical environmental guidelines to:
 - Minimise disturbance of the natural environment;
 - Minimise odour emissions;
 - Minimise impact of added traffic into the area
 - Ensure surface and groundwater resource protection;
 - Prevent or minimise all forms of pollution;
 - Protect indigenous flora and fauna;
 - Prevent soil erosion;
 - Promote sustainable use of resources;
 - Promote the reduction, reuse, recycling and recovery of waste;
 - Adopt the best practical means available to prevent or minimise adverse environmental impacts;

- Comply with all applicable laws, regulations, standards and guidelines for the protection of the environment;
- Develop waste management practices based on prevention, minimisation, recycling, treatment or disposal of waste;
- Describe all monitoring procedures required to identify impacts on the environment;
- Define how the management of the environment is reported and performance evaluated; and
- Train onsite personnel with regard to their environmental obligations.

6 MANAGEMENT PROCEDURES AND ADMINISTRATIVE REQUIREMENTS

6.1 ORGANISATIONAL STRUCTURE AND RESPONSIBILITIES

Formal responsibilities are necessary to ensure that key management measures/procedures are executed. Specific responsibilities of the Project Manager, Site Manager and Environmental Control Officer (ECO) are as defined in **Table 6-1**.

Table 6-1: Roles and Responsibilities

RESPONSIBLE PERSON RESPONSIBILITIES

RESPONSIBLE PERSON	RESPONSIBILITIES
Project Manager	<ul style="list-style-type: none"> – Ensure that the Site Manager and the contractor are aware of all specifications, legal constraints and CDC standards and procedures pertaining to the proposed development specifically with regards to environmental and social aspects; – Ensure that all conditions of the integrated EA and EMPr are communicated and adhered to by the Site Manager and its contractor(s); – Employ an independent ECO to monitor the implementation of the EA conditions and the EMPr commitments throughout the proposed development by means of, but not limited to, site inspections and meetings. This must be documented as part of the onsite implementation records; and – Be fully conversant with the EIA Report for the Proposed Project, the conditions of the licenses and authorisations and of the EMPr.
Site Manager – Main Contractor	<ul style="list-style-type: none"> – Be fully conversant with the EIA Report, the conditions of the EA and of the EMPr; – Develop method statements; – Provide support to the ECO; – Be fully conversant with all relevant environmental legislation and CDC environmental policies and procedures - Ensure compliance thereof; – Have overall responsibility for the implementation of the conditions of the authorisations and the EMPr; – Ensure that audits are conducted to ensure/assess compliance with the conditions of the authorisations and the EMPr; – Liaise with the Project Manager or his delegate, the ECO and others on matters concerning the environment; – Prevent actions that will harm or may cause harm to the environment, and take steps to prevent pollution and unnecessary degradation onsite; and – Confine project activities to demarcated areas. – Maintain the following: <ul style="list-style-type: none"> – A site incident register; – A non-conformance register; – A public complaints register; and – A register of audits.

Environmental Control Officer	<ul style="list-style-type: none"> – A suitably qualified ECO who would, on a weekly basis (or as necessary depending on the construction activities), monitor the project compliance with the conditions of the EA and the EMPr; and – The costs of the ECO shall be borne by the CDC (proof of appointment must be maintained onsite). <p>Responsibilities of the ECO include:</p> <ul style="list-style-type: none"> – Be fully conversant with the EIA Report, the conditions of the authorisations and the EMPr; – Be fully conversant with all relevant environmental legislation and CDC policies. – Ensure compliance with environmental policies and procedures - – Ensure that environmental performance audits/inspections are undertaken on a weekly basis by the Site Manager or his/her designated representative to ensure implementation onsite; – Approve method statements; – Remain employed until the completion of the construction activities; – Hand over responsibilities to the operational team, if necessary, or remain appointed for the duration of the operational phase; and – Report all findings identified onsite to the Project Manager. <p>In addition, the ECO will:</p> <ul style="list-style-type: none"> – Convey the contents of the conditions of the authorisations and the EMPr to the relevant site staff and discuss the contents in detail with the Project Manager and contractor(s); – Undertake regular and comprehensive inspection of the site and surrounding areas in order to monitor compliance with the conditions of the authorisations and the EMPr; – Take appropriate action if the specifications contained in the authorisations and the EMPr are not followed; – Monitor and verify that environmental impacts are kept to a minimum, as far as possible; and – Ensure that activities onsite comply with all relevant environmental legislation.
Internal Environmental Manager - Operation	<ul style="list-style-type: none"> – Monitor environmental performance of the facility and its operations; – Ensure all staff remain aware of their responsibilities in terms of reducing environmental impacts.
Contractors, Staff and Service Providers	<ul style="list-style-type: none"> – Complying with CDC environmental management specifications; – Be conversant with all conditions of the authorisations and the EMPr, and ensure compliance thereto; and – Adhering to any environmental instructions issued by the Site Manager/Project Manager on the advice of the ECO.

6.2 ENVIRONMENTAL AWARENESS PLAN

The NEMA requires that an environmental awareness plan be submitted as a part of the EMPr submission. The following methodology will be used to implement and ensure environmental awareness of employees:

- Internal Communication;
- Standard Meetings;
- Induction Training during Construction;
- On-going Training for permanent staff; and

- Providing a Complaints procedure.
-

6.2.1 INTERNAL COMMUNICATION

Internal Communication of environmental issues to ensure environmental awareness will be done by the following means:

- Meetings;
 - Memos;
 - Notice boards;
 - Briefs;
 - Newsletter;
 - E-mail;
 - Telephone; and
 - Induction training.
-

6.2.2 STANDARD MEETINGS

The Safety, Health and Environmental (SHE) Meetings will be held on a monthly basis by Senior Management. During these meetings discussions will be held regarding raising environmental awareness; identifying potential problems, and discussions regarding any complaints received and corrective actions taken.

All employees must also communicate to Senior Management through their reporting lines or by using complaint forms and incident forms to improve communication.

6.2.3 TRAINING

The following facets to training form part of the Environmental Awareness Plan:

- Environmental awareness training is given at induction when personnel commence employment. Specific environmental awareness induction training will be provided to all construction staff during the construction phase; and
 - Environmental competency training will be given to supervisory personnel at the retained processing operations and contractors working at the WCSEZ.
-

6.2.4 COMPLAINTS PROCEDURE

Enquiries or complaints must be able to be received from adjacent land-users and / or the community (i.e. stakeholders) through the following channels:

- Telephone number: 043 711 1651/08
- Email: david.lefutso@coega.co.za

Community enquiries or complaints must be brought to the attention of the Project Manager/Site Manager and ECO who must ensure corrective action and close-out. As a minimum the following information must be recorded:

- Time, date and nature of enquiry or complaint.
- The means by which the enquiry or complaints was made
- Personal details of the person / party lodging the enquiry or complaint (subject to privacy considerations).
- Actions taken to investigate and close-out the complaint as well as complainant feedback.

All complaints received are to be investigated and a response (even if pending further investigation) to be given to the complainant within 7 days.

Any actions that cannot be managed immediately must be assigned to the appropriate personnel and will become an outstanding action. The action remains outstanding until it is closed off by the Project Manager or Site Manager.

6.3 MONITORING

Construction Phase: The external ECO will undertake monthly audits to ensure compliance with the EMPr and conditions of the EA during the construction activities, and will report to the Site Manager should any non-compliance be identified or corrective action deemed necessary.

Operational Phase: The internal environmental manager will monitor the day-to-day site activities on an ongoing basis and will produce monthly monitoring reports. Monthly monitoring of the waste receiving area, effluent discharge quality and emission abatement equipment will be undertaken.

6.4 NON-CONFORMANCE AND CORRECTIVE ACTION

The auditing of the construction activities must identify non-conformances to the EMPr and conditions of the authorisations. Non-conformances must also be identified through incidents, emergencies or complaints recorded. In order to correct non-conformances, the source must be determined and corrective actions must be identified and implemented.

6.4.1 COMPLIANCE WITH THE EMPR AND CONDITIONS OF THE AUTHORISATIONS

- A copy of the EMPr and conditions of the EA will be available onsite at all times for the duration of the construction and operational activities;
 - All persons employed by a contractor or their sub-contractors will abide by the requirements of the EMPr and conditions of the authorisations;
 - Any members of the workforce found to be in breach of any of the specifications contained within the EMPr and conditions of the authorisations may be ordered by the Site Manager to leave the site. A contractor will not direct a person to undertake any activity which would place them in contravention of the specifications contained within the EMPr and conditions of the authorisations;
 - Should a contractor be in breach of any of the specifications, the Site Manager will, in writing, instruct the contractor responsible for the incident of non-compliance regarding corrective and/or remedial action required, specify a timeframe for implementation of these actions, implement a penalty and/or indicate that work will be suspended should non-compliance continue;
 - Should non-compliance continue, further written notification will be forwarded to the contractor responsible for the incident of non-compliance outlining the required corrective and/or remedial action, the timeframe for implementation, penalties and/or work will be suspended as specified previously; and
 - Departmental officials will be given access to the property referred to in the EA and EMPr for the purpose of assessing and/or monitoring compliance of the site, at all reasonable times.
-

6.4.2 DUTY OF CARE

Under Section 28 of the NEMA, all personnel involved with the construction and operational activities onsite will be responsible for implementing measures to prevent pollution or degradation of the environment from occurring, continuing or recurring. Failure to comply with the above conditions is a breach of the duty of care. If such harm is unavoidable, steps must be taken to minimise and rectify such pollution or degradation of the environment.

6.5 DOCUMENTATION AND REPORTING

The following documentation must be kept onsite in order to record compliance with the EMPr and conditions of the authorisations:

- Record of complaints; and
- Record of emergencies and incidents.

The contractor will be required to report on the following:

- Environmental incidents involving contractor/employees and/or the public;
- Environmental complaints and correspondence received from the public; and
- Incidents that cause harm or may cause harm to the environment.

The above records will form an integral part of the ECO's reports and records thereof maintained for the duration of the project. These records will be kept with the EMPr and conditions of the EA, and will be made available for scrutiny if so requested by the engineer or his delegate and the ECO.

The contractor will ensure that the following information is recorded for all environmental complaints / incidents / emergencies:

- Nature of complaint/incident/emergency;
- Causes of complaint/incident/emergency;
- Party/parties responsible for causing complaint/incident/emergency;
- Immediate actions undertaken to stop/reduce/contain the causes of the complaint/incident/ emergency;
- Additional corrective or remedial action taken and/or to be taken to address and to prevent reoccurrence of the complaint/incident/emergency;
- Timeframes and the parties responsible for the implementation of the corrective or remedial actions;
- Procedures to be undertaken and/or penalties to be applied if corrective or remedial actions are not implemented; and
- Copies of all correspondence received regarding complaints/incidents/emergency.

7 ENVIRONMENTAL MANAGEMENT PROGRAMME

This EMPr is based on the specialist recommendations and identifies various actions which are undertaken throughout the construction, operational and closure phases. Not every action will be required during the entire course of activities. Therefore, the actions identified in the EMPr have been given priority timeframes for proposed implementation.

Table 7-1: Structure of EMPr

COLUMN	DESCRIPTION
Activity/Aspect	Highlights the various activities/aspects associated with the project i.e. the contractors' activities that will interact with the environment.
Environmental Measures and Action Plans	Indicates the actions required to prevent and /or minimise the potential impacts on the environment that are associated with the project.
Responsibility	Indicates the party responsible for implementing the environmental measures and action plans laid out in the EMPr. Please note that the Site Manager will have authority to stop works if/as necessary.
Priority Timeframe	Indicates when the actions for the specific aspect must be implemented and/or monitored.

The following assumptions have been made in the development of the environmental specification in this EMPr:

- An environmental file containing the information/documentation required by this EMPr is to remain onsite and to be made available at the request of the auditor or similar monitoring body; and
- For ease of reference, any person(s) employed to assist in the project i.e. contractors, sub-contractor and permanent and temporary staff, will be collectively referred to as 'onsite personnel'.

It must be noted that at this point of the project planning process, the necessity for and timing of the decommissioning phase is unknown. Before decommissioning, the CDC will need to follow the related legal permitting process in terms of the NEMA and other legislation applicable at the time. The future associated permitting process will further supplement any commitments made within this document.

Table 7-2 outlines the EMPr for the proposed project.

None of the management measures are required to be include in the EA and there are no additional monitoring requirements.

Table 7-2: Environmental Management Programme

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
CONTRACTOR LAYDOWN AREA AND SITE ACCESS			
<p><u>Objectives:</u></p> <ul style="list-style-type: none"> – To implement measures to minimise impacts on the environment from the initiation of construction activities through planning, careful site access route selection and implementation of mitigation measures. <p><u>Indicator and Compliance Mechanisms:</u></p> <ul style="list-style-type: none"> – Health, safety, environmental and community incident and complaints management system register. – Close-out on incidents. – Monitoring and audit reports. – Inductions training and register. – Environmental awareness programme/toolbox talks. 			
Project Initiation of Construction Activities	Appoint an external ECO to manage and verify compliance with the EA and EMPr.	Contractor Project Manager	Once-Off
	Ensure construction activities remain within the demarcated project footprint.	ECO Contractor Project Manager	Construction
	A Training Needs Analysis must be prepared, and a training plan/programme developed to focus on Environmental, Health and Safety Aspects.	Contractor ECO	Construction Operation
	Site clearing must be limited to the footprint of the infrastructure requirements.	ECO Contractor Project Manager	Construction

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	A site layout plan which indicates site access points; stockpile locations; temporary waste storage areas; and other significant development infrastructure.	ECO Contractor	Construction Operation
	Locate firefighting measures onsite, such as fire extinguishers, and make personnel aware of fire prevention and firefighting measures. Firefighting equipment must be securely placed and inspected monthly.	ECO Contractor	Construction
VEHICLE, EQUIPMENT AND MACHINERY MANAGEMENT			
<p><u>Objectives:</u></p> <ul style="list-style-type: none"> – To implement measures to minimise impacts on the environment from poorly maintained equipment, machinery and vehicles onsite. <p><u>Indicator and Compliance Mechanisms:</u></p> <ul style="list-style-type: none"> – Health, safety, environmental and community incident and complaints management system register. – Close-out on incidents. – Monitoring and audit reports. – Transport route delineation. – Compliance with SANS 10228. – Daily equipment, machinery and vehicle checklists. – Incident Classification and Reporting Procedure. 			
Vehicle Maintenance	No major maintenance activities must occur on site.	ECO Contractor Operator	Construction Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
Operation of Equipment, Machinery and Vehicles	Ensure that the equipment, machinery and vehicles are adequately maintained so as to: <ul style="list-style-type: none"> – Reduce the potential for spillages of oil, diesel, fuel or hydraulic fluid. – Ensure road-worthiness. – Reduce emissions. 	ECO Contractor Operator	Construction Operation
	Vehicles bearing open loads of potentially wind-borne materials must be covered or wet down in order to minimise dust entrainment.	Contractor Operator	Construction Operation
Traffic Congestion	The movement of vehicles into and out of the site must be managed to ensure the impact on public areas is minimised, such as ensuring that abnormal loads are moved outside of peak traffic hours, and reasonable measures are taken to ensure that public and staff safety is managed adequately.	Contractor Operator	

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
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FUEL AND CHEMICAL MANAGEMENT

Objectives:

- To ensure the correct storage, handling and disposal of fuels and chemicals in order to prevent impacts to the surrounding environment.

Indicator and Compliance Mechanisms:

- Maintenance records.
- Material safety data sheets (MSDS).
- Health, safety, environmental and community incident and complaints management system register.
- Chemicals Management Procedure.
- Monitoring and audit reports.
- Training records.

Fuel and Chemical Management	Develop an Incident Classification and Reporting Procedure for fuel and chemical management including storage, handling and spillages.	ECO Contractor Operator	Construction Operation
	Indicate the location of the fuel and chemical storage area on the layout plans.	Contractor Operator	Construction Operation
	In cases where a surface leak occurs during loading and off-loading activities, the spill material will be cleaned using a spill kit.	Contractor Operator	Operation
	Securely fence and lock the storage areas to accommodate all hazardous substances such as fuel, oils and chemicals. The storage area floor must be an impermeable surface and suitably bunded as per the requirements outlined in SANS 10089-1 (2008).	ECO Contractor Operator	Construction Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Label all liquids (chemicals and hydrocarbons) stored onsite for easy identification. Material safety data sheets (MSDS) for onsite chemicals, hydrocarbon materials and hazardous substances must be readily available. MSDS must include mitigation measures to ameliorate potential environmental impacts which may result from a spill, incorporating health and safety mitigation measures.	Contractor Operator	Construction Operation
	Keep fuels, oils or other chemicals used outside of the bunded area to a minimum and use suitable secondary containment in the form of drip trays.	ECO Contractor Operator	Construction Operation
Health and Safety	Display “no smoking” and “no naked flame” signs in and around the project area, as well as near the hazardous material store.	ECO Contractor Operator	Construction Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
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WASTE MANAGEMENT			
<p><u>Objectives:</u></p> <ul style="list-style-type: none"> – To ensure the correct handling, storage, transportation and disposal of general waste and hazardous waste. <p><u>Indicator and Compliance Mechanisms:</u></p> <ul style="list-style-type: none"> – Induction training and records. – Waste Management Plan (WMP). – Relevant SANS Codes of Practice. – Waste Manifests (all waste streams), waybills (general waste) and Safety disposal certificates (hazardous waste). – Emergency preparedness and response procedure. – Incident Classification and Reporting Management Procedure. – Health, safety, environmental and community incident and complaints management system register. – Monitoring and audit reports. 			
General Waste Management	General waste generated as a result of construction and operational activities must be managed in accordance with the WMP (Section 8.1 of this EMP). The procedure must be reviewed to ensure compliance with legislative amendments.	ECO Contractor Operator	Construction Operation
	Train and inform all onsite personnel regarding general waste minimisation, management and disposal as per the WMP.	ECO Contractor Operator	Construction Operation
	Prohibit littering and burning of waste onsite.	ECO Contractor Operator	Construction Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Place an adequate number of general waste bins around the site during construction and operational activities in order to minimise littering. The bins must be removed from the site on a regular basis for disposal at a registered or licensed disposal facility.	ECO Contractor Operator	Construction Operation
	Retain records of appropriate safety disposal associated with waste removal, transportation and disposal.	ECO Contractor Operator	Construction Operation
	Prohibit the mixing of general waste with hazardous waste. Should general waste be mixed with hazardous waste, it will be considered hazardous waste. See below for managing hazardous waste.	ECO Contractor Operator	Construction Operation
	Recover, recycle and reuse waste where possible.	ECO Contractor Operator	Construction Operation
Hazardous Waste Management	Any recyclable material which is considered hazardous is to be collected and transferred by a permitted/trained waste contractor in accordance with the SANS 10228 for transport to the approved recycling/recovery facility.	ECO Contractor Operator	Construction Operation
	Train and inform all onsite personnel regarding hazardous waste minimisation, management and disposal as per the WMP in Section 8.1 of this EMPr.	ECO Contractor Operator	Construction Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Clean areas where hazardous waste spills have occurred and dispose of the hazardous material appropriately. Key personnel must be trained on handling spillages.	ECO Contractor Operator	Construction Operation
	Retain records of appropriate safety disposal certificates associated with hazardous waste removal, transportation and disposal.	ECO Contractor Operator	Construction Operation
	Manage all liquid hazardous waste spillages as per the EMPr and WMP in Section 8.1 of this EMPr. Ensure that effluent water is tested before release into the stormwater system.	ECO Contractor Operator	Construction Operation
	The emergency preparedness and response plan (Section 8.6 of this EMPr) must be implemented. The plan must be placed in key locations around the site, visible to all employees.	Contractor Operator	Construction Operation
	Ensure that waste manifest documentation (as per the Waste Classification and Management Regulations – GNR 634) is prepared and maintained for the generation, transportation and disposal of waste.	Contractor Operator	Construction Operation
	Report any major spill incidents to the Department within 24 hours of occurrence.	Contractor	Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
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FLORA AND FAUNA MANAGEMENT			
<p><u>Objectives:</u></p> <ul style="list-style-type: none"> – To prevent any loss of diversity of indigenous faunal communities and continued encroachment and displacement of indigenous vegetation community by alien invasive plant species, particularly in previously disturbed areas. <p><u>Indicator and Compliance Mechanisms:</u></p> <ul style="list-style-type: none"> – Induction training and records. – Monitoring and audit reports. 			
Vegetation Management	All the mitigation measures with regards to vegetation management stipulated in Section 6 of the Terrestrial Ecological Report which is Appendix E-2 of the EIAR must be implemented as required.	ECO Contractor	Construction
	All construction related activities (soil stockpiles, vegetation clearing etc.) and infrastructure (site camps, laydown and storage) must occur within the boundary of target properties. Areas outside the development footprint or approved access / laydown areas are to be considered to be 'No-Go' areas for workers, machinery, equipment and vehicles.	ECO Contractor	Construction
	The demarcation work must be signed off by the Environmental Control Officer (ECO) before any work commences. Demarcations are to remain until construction and rehabilitation is complete	ECO Contractor	Construction
	Access to and from the development area must be either via existing roads or within the construction servitude.	ECO Contractor	Construction
	No clearing of indigenous vegetation outside of the defined working servitudes is permitted for any reason (i.e. for fire wood or medicinal use).	ECO Contractor	Construction

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY
			TIMEFRAME
	Update and implement the alien vegetation management plan (Section 8.2 of this EMP) for the entire site.	ECO Contractor	Construction
	Any medicinal/ protected/ Red Data flora that will have to be removed shall be removed by a suitably qualified specialist and relocated. The applicable responsible person at the provincial department must be notified in the event of such plants being identified, who will then advise the ECO regarding what steps need to be taken and who will be responsible for the relocation and transplantation processes.	ECO Contractor	Construction
	Ensure that topsoil used for rehabilitation is free of any weed species.	ECO Contractor	Post Construction
	All invader or exotic plant species must be removed from the site and disposed of at a landfill site.	ECO Contractor Operator	Construction Operation
	Only indigenous floral species (preferably using endemic or local species from the area), which are water wise and require minimal horticultural practices must be used during landscaping and rehabilitation.	ECO Contractor	Post Construction
	Remaining indigenous trees (naturally occurring in the area) must be retained wherever possible.	ECO Contractor	Post Construction
Fauna Management	All the mitigation measures with regards to faunal management stipulated in Section 6.5 of the Terrestrial Ecological Report (Appendix E-2) of the EIAR must be implemented as required.	ECO Contractor	Construction
	Ensure that construction activities are limited only to the demarcated and approved areas.	ECO Contractor	Construction

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Education of workers/employees onsite on not to harm wildlife unnecessarily will assist in mitigating this impact. Contractor induction and staff/labour environmental awareness training needs are to be identified and implemented through staff/contractor environmental induction training. This must include basic environmental training based on the requirements of the EMP, including training on avoiding and conserving local wildlife.		
	Collect any snakes or animals that are discovered during construction and operation and investigate where to move them. No wild animal must under any circumstance be hunted, snared, captured, injured, killed, harmed in any way or removed from the site. This includes animals perceived to be vermin (such as snakes, rats, mice, etc.).	ECO Contractor	Operation
	If any faunal species of conservation importance are recorded during construction, activities must temporarily cease and an appropriate specialist must be consulted to identify the correct course of action.	ECO Contractor	Construction
	Ideally fences must not restrict the natural migratory movements of certain animals. The site offers limited suitable migratory habitat. Electric fences have a negative impact on certain animal species including Bushbabies, geckoes, chameleons, bullfrogs and tortoises. Palisade fencing with adequate gaps is recommended for the conserved public open spaces.	ECO Contractor	Operation

ATHA

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
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SOIL AND LAND MANAGEMENT

Objectives:

- To prevent any disturbance, erosion or contamination of soil resources.

Indicator and Compliance Mechanisms:

- Induction training and records.
- WMP.
- Incident Classification and Reporting Management Procedure.
- Health, safety, environmental and community incident and complaints management system register.
- Monitoring and audit reports.
- Stormwater Management Plan.

Soil and Land Management	Implement soil erosion management measures and ensure no erosion gullies are allowed to form within the area under management.	ECO Contractor	Construction
	Stormwater control systems, in line with the conceptual Stormwater Management Plan (SWMP) must be implemented within the site and must be managed and maintained to ensure no contamination of soil reserves.	ECO Contractor	Operation
	All excavations and foundations must be inspected regularly for any silting.	ECO Contractor	Construction
	Machinery must be regularly checked to ensure hydrocarbon leaks (including fuel and hydraulic fluids) are not occurring. Drip trays must be used where necessary. Fuels and oils must be stored within bunded areas. No repair work must be undertaken on machinery onsite or campsite area.	ECO Contractor Operator	Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Drip trays are to be utilised during daily greasing and re-fuelling of machinery and to catch incidental spills and pollutants. Drip trays are to be inspected daily for leaks and effectiveness, and emptied when necessary. This is to be closely monitored during rain events to prevent overflow.	ECO Contractor Operator	Construction Operation
	Keep spill kits onsite and train personnel to use them appropriately.	ECO Contractor Operator	Construction Operation
	Ensure regular pipeline maintenance to avoid bursts. Use containment mechanisms to contain spills in the form of plastic sleeves around the pipes to hold any spills until the pipeline is fixed.	ECO Operator	Operation
	Fuels and chemicals must be stored in adequate storage facilities that are secure, enclosed and banded.	ECO Contractor Operator	Construction Operation
	Ensure that there are sufficient ablution facilities. If portable toilets can be installed for the construction phase, ensure that they in accordance with Occupational Health and Safety Act, (No 85 of 1993).	ECO Contractor	Construction Decommissioning

ATHA

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
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WATER MANAGEMENT

Objectives:

- To implement measures to prevent the contamination on surface and groundwater resources.
- To prevent erosion.

Indicator and Compliance Mechanisms:

- Induction training and records.
- Incident Classification and Reporting Management Procedure.
- Environmental awareness programme/toolbox talks.
- Stormwater Management Plan.

Surface Water Management –
Stormwater Management

All the mitigation measures with regards to stormwater management of the site stipulated in Section 6 of the Wetland Habitat Impact Assessment Report which is **Appendix E-3** of the EIAR must be implemented as required.

Contractor
ECO
Operator

Construction
Operation

To prevent contamination, ensure that there is no storage and handling of materials (i.e. chemicals and waste material) within the designated “clean water areas”.

ECO
Contractor
Operator

Construction
Operation

Channels must be checked monthly and after any major rainfall events to ensure that there are no blockages and that the water will not be restricted in any way. Pavements must be cleaned regularly to remove sediment.

ECO
Contractor
Operator

Construction
Operation

Spills must be appropriately managed on site, including within bunds, where relevant.

ECO
Contractor
Operator

Construction
Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Only effluent water proven to not contain levels of contamination over those stipulated in national or local legislation (whichever is more stringent) must be allowed to flow off the site via the clean stormwater system.	ECO Contractor Operator	Construction Operation
	Sediments that accumulate within the stormwater management system must be routinely removed to ensure the design capacity is maintained. Should sediments be expected to contain contamination, this sediment must be appropriately handled and disposal must be undertaken to an appropriate waste disposal facility.	ECO Contractor Operator	Construction Operation
	Remove accumulated sediments and debris at the inlet, outlet, within the conduits and open-top culverts. Obstructions to flow must be removed in order to avoid flooding.	ECO Contractor Operator	Construction Operation
	Maintenance and Repair of erosion damage at the culvert's inlet and outlet must be undertaken. Removal of floating debris and oils (using oil absorptive pads) from grease traps must be undertaken.	ECO Contractor Operator	Construction Operation
	Ensure that oil traps are cleaned and maintained regularly to avoid pipe blockage and flooding. Develop and position an oil trap cleaning procedure and maintenance log sheet near the grease trap/interceptor to encourage employees to follow procedures and to promote proper documentation after each cleaning	ECO Contractor Operator	Construction Operation
Surface Water Management – Water Quality	All the mitigation measures with regards to water quality management of the site stipulated in Section 6 of the Wetland Habitat Impact Assessment Report which is Appendix E-3 of the EIAR must be implemented as required.	Contractor ECO Operator	Construction Operation

ATHA

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Compile and implement a stormwater management plan to control the flow of stormwater and limit the potential of dirty water from mixing with clean water sources.	ECO Contractor Operator	Construction Operation
	Machinery must be regularly checked to ensure hydrocarbon leaks (including fuel and hydraulic fluids) are not occurring. Drip trays must be used where necessary. Fuels and oils must be stored within bunded areas. Parking areas for staff vehicles must ideally be placed on hardstanding to limit the impacts of oil leaks to the environment.	ECO Contractor Operator	Construction Operation
	Acquire spill kits to clean up any hydrocarbon or chemical spills during construction, operation and closure to prevent seepage	ECO Contractor Operator	Operation
	Oils, greases, diesel and other chemicals will be stored in the prescribed manner and within bunded areas to prevent surface water contamination. No repairs must be undertaken on the site.	ECO Contractor Operator	Construction Operation
	All stormwater generated by the medium to high risk contamination 'dirty' areas must not be allowed to discharge into the surrounding environment.	ECO Contractor Operator	Construction Operation
	Separate dirty and clean water by implementing clean and dirty water systems/structures prior to construction to prevent pollution of clean water runoff. The clean and dirty water systems and structures will be properly designed (according to Regulation 704 of the National Water Act)	ECO Contractor Operator	Construction Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	The pipes need to be constructed to facilitate routine maintenance (i.e. simple, effectual housekeeping). All pipes and channels must be checked after any major rainfall events to ensure that there are no blockages and that the water flow will not be restricted in any way.	ECO Operator	Operation
	Any cement mixing shall be completed on impervious hardstanding surfaces to prevent spillage to the environment	ECO Contractor Operator	Construction Operation
	The site must be contoured as according to the conceptual stormwater management plan to allow for surface water to readily drain away and to prevent ponding of water anywhere within the site.	ECO Contractor Operator	Construction Operation
Groundwater Management	All the mitigation measures with regards to groundwater management of the site stipulated in Section 6 of the Wetland Habitat Impact Assessment Report which is Appendix E-3 of the EIAR must be implemented as required.	Contractor ECO Operator	Construction Operation
	Areas with the potential to contaminate the groundwater must be underlain by hardstanding of suitable integrity.	ECO Operator	Operation
	Acquire spill kits to clean up any hydrocarbon or chemical spills during construction, operation and closure to prevent seepage. All spillage incidents must be reported to the responsible site officer as soon as they occur.	ECO Contractor Operator	Construction Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Oils, greases, diesel and other chemicals will be stored in the prescribed manner and within bunded areas to prevent surface water contamination. The site must be contoured as according to the conceptual stormwater management plan to allow for surface water to readily drain away and to prevent ponding of water anywhere within the site.	ECO Contractor Operator	Construction Operation
	Any cement mixing shall be completed on impervious hardstanding surfaces to prevent spillage to the environment	ECO Contractor Operator	Construction Operation
Fire	Follow the fire management plan (Section 8.5 of this EMPr) for fire management. Contractors must prove compliance with the emergency response plan.	ECO Contractor Operator	Operation
	No open fires to be permitted on construction sites. Fires must only be made within the construction camp and only in areas and for purposes approved by the ECO.	ECO Contractor Operator	Construction Operation
	Fire prevention facilities must be present at all hazardous storage facilities. Ensure adequate fire-fighting equipment is available and train workers on how to use it.	ECO Contractor Operator	Construction Operation
	Ensure that all workers on site know the proper procedure in case of a fire occurring on site. Smoking must not be permitted in areas considered to be a fire hazard.	ECO Contractor Operator	Construction Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Provide suitable fire control measures. No smoking shall be allowed in areas of natural habitat where accidental fires could occur. Follow the fire management plan (Section 8.5 of this EMP) to curb any accidental fires.	ECO Contractor Operator	Operation
	All activities where a threat of potential fire is identified shall comply with minimum fire control regulations.	ECO Contractor Operator	Operation
NOISE MANAGEMENT			
<p><u>Objectives:</u></p> <ul style="list-style-type: none"> – To ensure that noise impacts to the surrounding environment are minimal or mitigated. <p><u>Indicator and Compliance Mechanisms:</u></p> <ul style="list-style-type: none"> – Maintenance records. – Incident reporting system. – Induction training and records. – Health, safety, environmental and community incident and complaints management system register. – Monitoring and audit reports. – Records of Personal Protective Equipment (PPE). – Incident Classification and Reporting Management Procedure. 			
Noise	Fit equipment, machinery and vehicles generating excessive noise with appropriate noise abatement measures, if deemed necessary, and undergo regular maintenance to ensure optimum efficiency during operation.	ECO Contractor Operator	Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Provide a complaints register to report any excessive noise incidents.	ECO Contractor Operator	Operation
	Onsite employees must be provided relevant PPE. Onsite personnel are responsible for maintaining their PPE and implementing it during construction activities.	ECO Contractor Operator	Operation
	Ensure regular maintenance of equipment to reduce the generation of additional unwanted noise.	Operator	Operation
SITES OF CULTURAL OR HERITAGE SIGNIFICANCE			
<p><u>Objectives:</u></p> <ul style="list-style-type: none"> – To ensure that sites/artefacts of heritage value are identified and protected. <p><u>Indicator and Compliance Mechanisms:</u></p> <ul style="list-style-type: none"> – Health, safety, environmental and community incident and complaints management system register. – Incident Classification and Reporting Management Procedure. – Monitoring and audit reports. 			
Cultural and/or Heritage Sites and Palaeontology	In the event that an artefact or heritage site be uncovered, work in the vicinity must cease, representatives of the South African Heritage Resources Agency (SAHRA) must be contacted and an archaeological consultant must be appointed to assess the site. Work must only resume, once clearance is given in writing by the archaeological consultant.	ECO Contractor	Construction activities

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	<p>In the event that palaeontological findings are made, the chance find procedure below must be followed:</p> <p>A suitably qualified and experienced ECO responsible for the construction phase must be made aware of the potential occurrence of scientifically important fossil remains within the development footprint. During the construction phase all major clearance operations and deeper (> 1 m) excavations must be monitored for fossil remains on an on-going basis by the ECO. Should substantial fossil remains be encountered at surface or exposed during construction, the ECO must safeguard these, preferably in situ. They must then alert the Eastern Cape Provincial Heritage Resources Agency, ECPHRA (Contact details: Mr Sello Mokhanya, 74 Alexander Road, King Williams Town 5600; smokhanya@ecphra.org.za) as soon as possible. This is to ensure that appropriate action (i.e. recording, sampling or collection of fossils, recording of relevant geological data) must be taken by a professional palaeontologist at the proponent's expense.</p> <p>The palaeontologist concerned with any mitigation work will need a valid fossil collection permit from ECPHRA and any material collected would have to be curated in an approved depository (e.g. museum or university collection). All palaeontological specialist work would have to conform to international best practice for palaeontological fieldwork and the study (e.g. data recording fossil collection and curation, final report) must adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by SAHRA (2013).</p>	ECO Contractor	Construction

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
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HEALTH AND SAFETY

Objectives:

- To ensure communication with members of the public to promote safety awareness.
- To prevent public access to construction sites and storage areas.
- To ensure safety for all onsite personnel.

Indicator and Compliance Mechanisms:

- Induction training and records.
- Health, safety, environmental and community incident and complaints management system register.
- Monitoring and audit reports.
- Incident Classification and Reporting Management Procedure.
- PPE Register.
- Occupational health and safety plan.
- Health and safety protocol.

Note: The proposed project aims to improve the overall SHE status of the site.

Health and Safety	All onsite personnel are required to undergo induction training and regular toolbox talks in order to raise awareness of the conditions contained herein.	ECO Contractor Operator	Operation
	The appointed contractor will be responsible for the development of a comprehensive health and safety protocol which must be adhered to.	Contractor	Construction activities
	Provide and wear appropriate PPE onsite.	Contractor Operator	Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Train all onsite personnel handling chemical or hazardous substances in the use of such substances and the environmental, health and safety consequences of incidents.	ECO Contractor Operator	Operation
	Provide onsite personnel with sufficient potable water for drinking.	ECO Contractor Operator	Operation
Public Safety	Restrict public access by employing full time security for the site.	Contractor Operator	Operation
SOCIO-ECONOMIC ENVIRONMENT			
<p><u>Objectives:</u></p> <ul style="list-style-type: none"> – To ensure that the negative socio-economic impacts are mitigated and managed. – To ensure that the positive socio-economic impacts are enhanced. <p><u>Indicator and Compliance Mechanisms:</u></p> <ul style="list-style-type: none"> – Employment records and community engagement local enterprise development records. 			
Local Awareness Training	As far as possible, contractors and labour must be sourced locally from within the local communities.	Project Manager Contractor Operator	Construction activities Operation
	Train employees to gain skills they can use in the future.	Project Manager Contractor Operator	Construction Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	Consult with local communities to boost local business.	Project Manager Contractor Operator	Construction Operation
AIR QUALITY			
<p><u>Objectives:</u></p> <ul style="list-style-type: none"> – To ensure that air quality impacts to the surrounding area is kept to a minimum or mitigated as far as possible. – To ensure that odour impacts to the surrounding environment are minimal or mitigated <p><u>Indicator and Compliance Mechanisms:</u></p> <ul style="list-style-type: none"> – Maintenance records. – Incident reporting system. – Induction training and records. – Health, safety, environmental and community incident and complaints management system register. – Monitoring and audit reports. – Odour Management Plan. – Air Quality Impact Assessment. – Records of Personal Protective Equipment (PPE). 			
Dust and Particulate Matter	When required dust suppression methods, such as water suppression, must be used, especially during dry and windy periods. Dust must be visually monitored on a daily basis and minimised where possible to ensure emissions are minimised.	ECO Contractor Operator	Construction
	All stockpiles must be restricted to designated areas and must not exceed a height of two (2) metres.	ECO Contractor	Construction

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
	All materials transported to site must be transported in such a manner that they do not fly or fall off the vehicle. This may necessitate covering or wetting friable materials.	ECO Contractor	Construction
	Ensure that all vehicles and machines are adequately maintained to minimise emissions.	ECO Contractor	Construction
	No burning of waste, such as plastic bags, cement bags and litter is permitted.	ECO Contractor	Construction
	It is recommended that the clearing of vegetation from the site must be selective and done just before construction so as to minimise erosion and dust. Should construction in areas that have been stripped not be commencing within a short period of time the exposed areas shall be re-vegetated or stabilised.	ECO Contractor	Construction
Odour	Use containment mechanisms to contain spills in the form of plastic sleeves around the pipes to hold any spills until the pipeline is fixed.	Operator	Operation
	Ensure regular sewer pipeline maintenance to avoid bursts. The pipes need to be constructed to facilitate routine maintenance (i.e. simple, effectual housekeeping).	Operator	Operation
	Provide a complaints register to report any excessive odour incidents.	Operator	Operation

ACTIVITY/ASPECT	ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURE	RESPONSIBLE PERSON	PRIORITY TIMEFRAME
REHABILITATION			
<u>Objectives:</u> – To return disturbed sites to a natural state characteristic to the area.			
Construction site	All the mitigation measures with regards to rehabilitation of the site stipulated in Section 6.6 of the Terrestrial Ecological Report which is Appendix E-2 of the EIAR must be implemented as required.	Contractor ECO	Post construction
	All remaining construction infrastructure, building rubble and waste is to be removed from the site and disposed of by a licensed contractor or at a registered landfill site.	Contractor ECO	Post construction
Rehabilitation and Landscaping	All the mitigation measures with regards to rehabilitation and landscaping of the site stipulated in Section 6.6 of the Terrestrial Ecological Report which is Appendix E-2 of the EIAR must be implemented as required.	Contractor ECO	Post construction
	All areas disturbed by construction activities must be inspected for contamination, remediated if necessary and then maintained/landscaped to ensure efficient stormwater drainage.	Contractor ECO	Post construction

8 MANAGEMENT PLANS

A number of generic management plans have been included in the EMPr. The plans included below provide an indication of the requirements that must be provided to prospective tenants who will develop businesses in the WCSEZ at a later stage. It must be noted that many of these plans will need to be updated by prospective tenants once their detailed designs have been completed.

The following specific plans have been compiled:

- Waste Management Plan;
- Alien / invasive Plant Management Plan;
- Plant Rescue and Protection Plan;
- Re-vegetation and Habitat Rehabilitation Plan;
- Fire Management Plan;
- Emergency Response Plan;
- Stormwater Management Plan; and
- Erosion Management Plan.

8.1 WASTE MANAGEMENT PLAN

8.1.1 WASTE HIERARCHY

A waste is any solid, liquid or contained gaseous material that is being discarded by, disposal, recycling, burning or incineration. Waste management options for a particular waste need to be considered according to the Waste Management Hierarchy (**Figure 8-1**) which reflects the relative sustainability of each of the options. One of the key principles underlying the waste management hierarchy is to ensure that waste is dealt with as high up the waste hierarchy as possible. Since all waste disposal options have some impact on the environment, the only way to avoid impact is not to produce waste in the first place, and waste reduction is therefore at the top of the hierarchy. Re-use, followed by recovery techniques (recycling, composting and generating energy from waste) follow, while disposal to landfill or by incineration (the worst options) are at the bottom of the hierarchy.

In deciding on the most appropriate disposal route, both environmental and economic costs and benefits need to be considered. This decision must be reached taking into account all the costs and impacts associated with waste disposal, including those associated with the movement of waste.

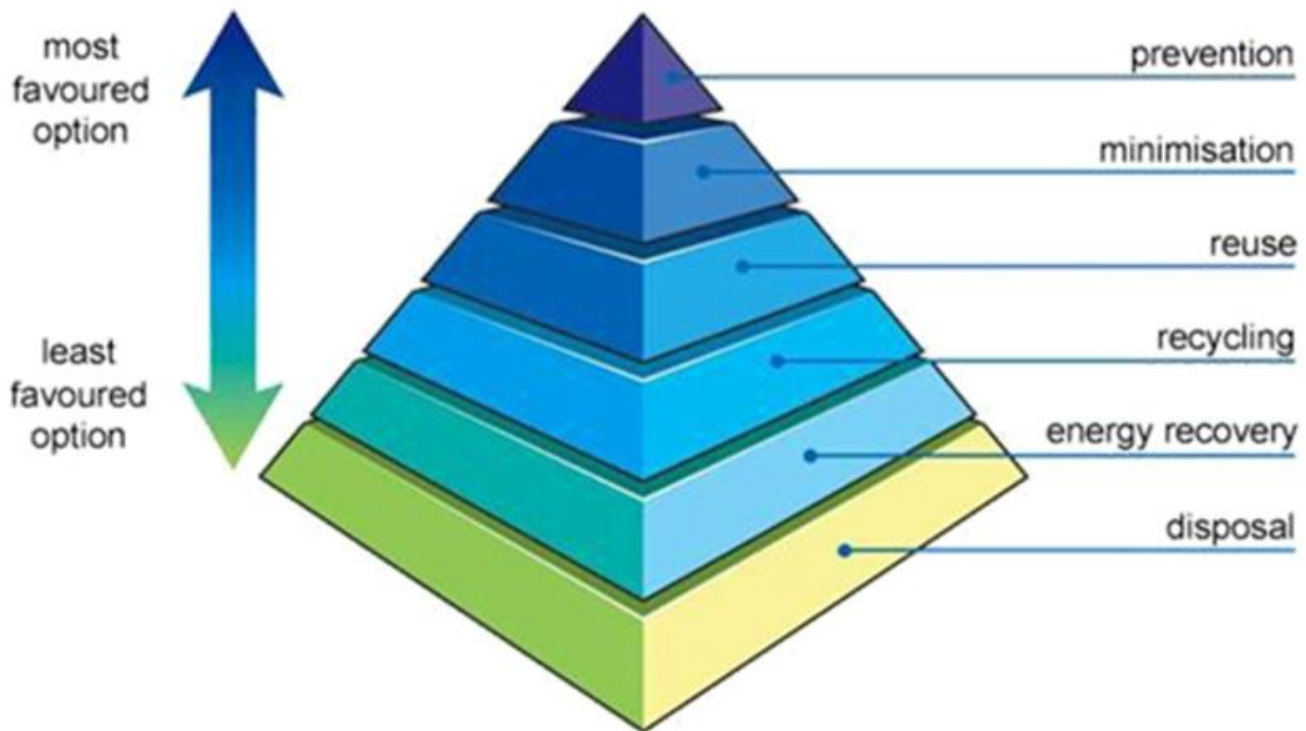


Figure 8-1: Waste Hierarchy

8.1.2 PROJECT STAGES

The purpose of this section is to assess the preparation of the SEZ in order to identify short comings, like raw materials procurement, infrastructure, employee training, health and safety, transportation, storage, compliance with legislative requirements, emergency preparedness and waste streams arising from an operation and its related activities, as well as the current waste management practices per waste stream. The assessment serves as the baseline against which any problem areas or gaps in waste management practises, process technology and environmental authorisations are identified and against which future performance objectives, activities and targets must be set.

The project stages are described below with the waste generation and management methods described in the corresponding tables below them including:

- Details on how waste will be managed during the construction and operational phase taking into consideration the waste management hierarchy;
- Details of the procedure for the separation of non-recyclable and recyclable waste;
- Details of the management of non-recyclable waste i.e. how waste will be stored on site during construction and operational phases, including the frequency for the removal of waste from the site and an indication of the landfill site where it will be disposed;
- Details for the management of recyclable waste e.g. the type of waste materials that will be recycled on site and the details pertaining to the offloading, sorting, handling, storage and collection procedures for the waste types (e.g. compaction and bailing, breaking of glass etc.); and
- The frequency for the removal of waste from the proposed development to where it will be finally managed must be included.

CONSTRUCTION AND DECOMMISSIONING PHASES

The construction and decommissioning activities are mostly similar, therefore, the generated waste is grouped in this section. A registered waste contractor will be used to take away the waste from the site to the relevant landfill or for recycling purposes. An inventory of all the waste will be kept on the site and it will include the quantities of waste generated and taken away from the site as well as the final destination of all waste streams. **Table 8-1** below indicates the anticipated waste types produced on the proposed SEZ during construction and

decommissioning, including the expected waste disposal methods. It must be noted that the waste streams defined in this section only reflect to the clearance of the site, construction / decommissioning of roads connecting the SEZ as well as the pipeline infrastructure for the sewer, water supply and stormwater. Furthermore, it will include waste generated in setting up or removing the water reservoirs, electrical lines, and the relevant substations. The waste streams for the individual businesses that will set up on the SEZ will be identified and assessed at the time when they conduct their individual environmental authorisation processes.

Table 8-1: Wildcoast SEZ Construction and Decommissioning Waste Map

WASTE STREAM	DESCRIPTION	CLASSIFICATION (GEN/HAZ)	ONSITE MANAGEMENT	DISPOSAL METHOD
General kitchen waste	This includes cans or plastic, glass packaging among others.	General	Stored in segregated general waste bins on the site. There will be labelled and separate, plastic, paper and glass bins to ensure waste separation on the site.	<ul style="list-style-type: none"> Recycle as much waste as possible. Any residual unrecycled waste must be collected weekly by the municipality for disposal at the local general waste landfill.
Organic kitchen waste	Food waste	General	Stored in designated food waste bins.	Collected weekly by the municipality for disposal at the local general waste landfill.
Garden waste	Waste from clearing vegetation on the proposed site.	General	Stored in designated bins which are emptied into a central garden waste skip for the site.	Collected weekly by the municipality to a local composting facility.
Packaging material	Paper, plastic, cardboard, pallets and containers for all the material used on the site.	General	Store the waste streams separately on a designated and labelled area.	<ul style="list-style-type: none"> All the paper is to be taken to recycling contractors / paper mills when the skips are full. Cardboard boxes to be sent back to suppliers to encourage reuse. Pallets to be reused or repurposed by furniture manufacturers or sent back to suppliers to encourage reuse. Containers like bottles and drums to be sent back to suppliers to encourage reuse.
Bulk earthworks stockpile	Bulk earthworks that cannot be used as backfill during the construction phase.	General	Stockpile on the site away from drainage lines.	Collected weekly by contractors and taken to sand and aggregate mining businesses.
Contaminated soil	Soil contaminated with oil or petroleum products from idle construction vehicles or from spills.	Hazardous	Clean up with spill kits and store in the onsite spill kit bin.	Collected weekly by a registered hazardous waste contractor and taken to a registered hazardous waste landfill.

WASTE STREAM	DESCRIPTION	CLASSIFICATION (GEN/HAZ)	ONSITE MANAGEMENT	DISPOSAL METHOD
Rocks, boulders and demolition rubble	Rubble from the demolition of the facility including concrete.	General	Stockpile on the site away from drainage lines.	<ul style="list-style-type: none"> Collected weekly by contractors and taken to sand and aggregate mining businesses. Take off site weekly for crushing and repurpose if it cannot be reused on site for surface profiling.
Infrastructure waste	This includes steel, copper, and pipes taken down during decommissioning.	General	Stockpiled separately in individual stockpiles for each waste type.	<ul style="list-style-type: none"> Wooden material to be donated to communities after accumulation of large quantities. Steel to be sold to surrounding scrap metal dealers. Copper to be taken to relevant contractors for reuse.

OPERATIONAL PHASE

It must be noted that the waste streams defined in this section only reflect to the operational stage of the SEZ with regards to roads, the pipeline infrastructure for the sewer, water supply and stormwater as well as water reservoirs, electrical lines, and the relevant substations. During the operational phase, no waste is expected to be generated from the infrastructure except in the event that the sewer pipelines burst. The waste streams for the individual businesses that will set up on the SEZ will be identified and assessed at the time when they conduct their individual environmental authorisation processes.

It must also be noted that the SEZ is anticipated to have the following activities based on the expected land use:

- Commercial space;
- Hotel and conferencing venue;
- Industrial zone; and
- Intensive agriculture and business process outsourcing (BPO).

These are targeted to be on the Phase 1 South area. Although this scoping and EIA process does not cover the authorisation of these activities, the recommendations in this section must be considered by the individual businesses when they consider their own applications.

Table 8-2 below indicates the anticipated operational waste types generated by the SEZ infrastructure during operation, including the expected waste disposal methods.

Table 8-2: Wildcoast Operational Waste Map

WASTE STREAM	DESCRIPTION	CLASSIFICATION (GEN/HAZ)	ONSITE MANAGEMENT	DISPOSAL METHOD
General kitchen waste	This includes cans, glass or plastic packaging among others.	General	Stored in general waste bins which are emptied into a central general waste skip for the Phase 1 south boundary.	<ul style="list-style-type: none"> Recycle as much waste as possible. Any residual unrecycled waste must be collected weekly by the municipality for disposal at the local general waste landfill.
Organic kitchen waste	Food waste	General	Stored in designated food waste bins within the kitchen and then emptied into a central food waste skip for the Phase 1 south boundary.	Waste is collected weekly by the municipality for disposal at the local general waste landfill.
Garden waste	Waste from landscaping done around the office area.	General	Stored in designated bins which are emptied into a central garden waste skip for the Phase 1 south boundary.	Collected weekly and taken to composting facilities.
Paper waste	Office documentation and print room waste.	General	Stored in designated paper waste bins which are emptied into a central paper waste skip for the Phase 1 south boundary.	Collected weekly and recycled by a third party contractor.
E-waste	Printer cartridges, batteries and other non-functional appliances.	Hazardous	<ul style="list-style-type: none"> Central collection point within the office facility. Batteries are collected and stored separately. 	<ul style="list-style-type: none"> Printer supplier services the printers and collects the cartridges during service intervals. Batteries are collected by recycling third party contractor when collection skips are full. Disposal certificates must be provided to ensure disposal to a hazardous waste site.
Fluorescent tubes	Expired or broken fluorescent tubes.	Hazardous	Stored in a separate skip.	Disposal is prohibited. To be collected by recycling contractor.

WASTE STREAM	DESCRIPTION	CLASSIFICATION (GEN/HAZ)	ONSITE MANAGEMENT	DISPOSAL METHOD
Packaging material	Paper, plastic, cardboard, pallets and containers for office material used on the site.	General	Stored in segregated general waste bins on the site. There will be labelled and separate, plastic, paper and glass bins to ensure waste separation on the site.	<ul style="list-style-type: none"> All the paper is to be taken to recycling contractors / paper mills weekly. Cardboard boxes to be sent back to suppliers to encourage reuse. Pallets to be reused or repurposed by furniture manufactures or sent back to suppliers to encourage reuse. Containers like bottles and drums to be sent back to suppliers to encourage reuse. Any metal is taken away to scrap metal recycling contractors.
Health care risk waste	This includes waste following treatment of personnel with first aid kits as well as sanitary waste.	Hazardous	Store in an appropriately sealed and separate plastic and bin.	Collected weekly by a registered contractor and taken to a registered hazardous landfill.
Wastewater	Waste water from cleaning the facilities.	General	This water is not recycled in the process but is disposed.	Water is directed to the municipal sewer line.
Sewer water	This is wastewater exposed when sewer pipelines burst within the SEZ boundary.	Hazardous	A quick response must be in place and the line must be isolated and fixed as quickly as possible to avoid contamination of surface and groundwater resources.	Contain the spill and direct to the municipal sewer line.

8.1.3 WASTE MANAGEMENT ROLES AND RESPONSIBILITIES

Roles, responsibility and authority shall be defined, documented and communicated in order to facilitate effective waste management through implementation of the WMP. Management shall provide resources essential to the implementation and control of the WMP, including human resources, technology, and financial resources.

The CDC shall appoint specific management representative(s) who, irrespective of other responsibilities, shall have defined roles, responsibility, and authority for waste management of the SEZ.

The different role players in the waste management process include:

- Site manager;
- Designated environmental officer (DEO) during construction;
- Waste management control officer (WMCO) during operation;
- Waste contractors; and
- Staff.

Table 8-3 provides an overview of the roles and responsibilities of individuals on site related to construction and operational activities.

Table 8-3: Roles and Responsibilities

ROLE PLAYER	RESPONSIBILITIES
Site Manager Project Manager	<ul style="list-style-type: none"> – Implement WMP authorised by the DEA; – Review and authorise updates to the WMP; – Ensure resource allocation for implementation of the WMP requirements; – Ensure that WMP requirements are integrated into project plans, work method statements, tender and contract documents; – Ensure necessary support to the DEO and WMCO for implementation of the WMP; and – Participate in incident investigations (as required).
Designated Environmental Officer	<ul style="list-style-type: none"> – Ensure that WMP requirements are implemented on the site during construction; – Ensure communication of WMP requirements to relevant contractor and sub-contractor personnel; – Facilitate environmental induction of all project staff and either deliver or coordinate delivery of all such training that would be required for the effective implementation of the WMP. This includes identifying additional project training requirements and implementing the training programme; – Ensure maintenance of site document control requirements; – Maintain training records for all project personnel including contractors; – Maintain environmental incidents and complaints register for construction; – Report significant incidents internally and externally as required by law and the conditions of the EA upon receipt; – Investigate incidents and recommend corrective and preventative actions. – Provide support and advice to the contractor and all sub-contractors in the implementation of WMP procedures and corrective actions; and – Ensure that contractors use the appropriate disposal methods and facilities.

Waste Management Control Officer	<ul style="list-style-type: none"> – Update the WMP where necessary; – Ensure that WMP requirements are implemented on the site during operation; – Ensure that the latest WMP documents are filed and readily accessible as required; – Ensure communication of WMP requirements to relevant contractor and sub-contractor personnel; – Facilitate environmental induction of all project staff and either deliver or coordinate delivery of all such training that would be required for the effective implementation of the WMP. This includes identifying additional project training requirements and implementing the training programme; – Ensure maintenance of site document control requirements; – Maintain training records for all project personnel including contractors; – Maintain environmental incidents and complaints register; – Report significant incidents internally and externally as required by law and the conditions of EA upon receipt; – Investigate incidents and recommend corrective and preventative actions. – Provide support and advice to the contractor and all sub-contractors in the implementation of WMP procedures and corrective actions; – Undertake environmental system reviews, site inspections, audits and other verification activities to assure that the WMP implementation is at an optimal level; – Participate in environmental performance verification activities to verify the level of compliance with the WMP in delivering the legal and environmental obligations; – Ensure that contractors use the appropriate disposal methods and facilities; – Conduct third party audits on waste contractors; and – Assess the efficacy of the WMP and identify possible areas of improvement or amendment required within the WMP.
Waste contractors	<ul style="list-style-type: none"> – Adhere to WMP requirements; – Ensure all waste contractors are appropriately certified as waste transporters; – Use the appropriate disposal methods and licensed facilities; – Provide the required waste manifests and safe disposal certificates; and – Ensure that personnel are appropriately trained in waste handling and transporting.
Staff	<ul style="list-style-type: none"> – Attend WMP training; and – Follow WMP requirements including waste separation and recycling appropriately.

8.1.4 TRAINING

The CDC has the responsibility to ensure that all persons involved in the project are aware of, and are familiar with, the WMP requirements for the project. All project personnel, including contractors and sub-contractors are required to receive training of a type and level of detail that is appropriate for the waste management aspects of their work.

All senior and supervisory staff members shall familiarise themselves with the full contents of the WMP. They shall know and understand the specifications of the WMP and be able to assist other staff members in matters relating to the WMP.

8.2 ALIEN / INVASIVE PLANT MANAGEMENT PLAN

The purpose of this Plan is to provide a framework for the management of alien and invasive plant species during the construction and operation of the project, which in turn serves to manage open spaces, as required. The broad objectives of the plan include the following:

- Ensure alien plants do not become dominant in parts or the whole site through the control and management of alien and invasive species presence, dispersal and encroachment.

- Managing and maintaining the ecosystem in a near-natural state and restoring and/or rehabilitating the ecosystems to such a state.
- Develop and implement a monitoring and eradication programme for alien and invasive species.
- Promote the natural re-establishment and planting of indigenous species in order to retard erosion and alien plant invasion.

Mitigation and management measures include, but are not limited to the following:

- Stockpiles must be kept clear of weeds and alien vegetation growth by regular weeding.
- Alien vegetation and the spread of exotic species on the site will need to be controlled.
- The contractor must be responsible for implementing a programme of weed control (particularly in areas where soil has been disturbed); and grassing of any remaining stockpiles to prevent weed invasion.
- Herbicide use shall only be allowed according to contract specifications. The application shall be according to set specifications and under supervision of a qualified technician. The possibility of leaching into the surrounding environment shall be properly investigated and only environmentally friendly herbicides shall be used.
- The use of pesticides and herbicides on the site must be discouraged as these can impact on important pollinator species of indigenous vegetation.
- Six monthly checks of the area must take place for the emergence of invader species.
- Mitigation measures mentioned for the construction phase above must be implemented for any maintenance of the development that is undertaken during the operation phase.
- Correct rehabilitation with locally indigenous species.
- Monitoring programme to ensure that rehabilitation efforts are successful to ensure that risks such as erosion, spread of exotic species and the edge effect are avoided.
- Constant maintenance of the area to ensure re-colonisation of floral species.
- Regular removal of alien species which may jeopardise the proliferation of indigenous species.

8.3 PLANT RESCUE AND PROTECTION PLAN

The purpose of the plant rescue and protection plan is to implement avoidance and mitigation measures, in addition to the mitigation measures included in the EMPr to reduce the impact of the development of the project on listed and protected plant species and their habitats, and to provide guidance on search and rescue of species of conservation concern.

Mitigation and management measures include, but are not limited to the following:

- Vegetation clearing must only commence after a walk down has been conducted by a suitably qualified ecologist / botanist and the necessary permits obtained.
- Vegetation clearing to be kept to a minimum. No unnecessary vegetation to be cleared.
- Vegetation removal must be limited to the construction site and must be removed only as it becomes necessary rather than removing all the vegetation throughout the site at once
- Materials must not be delivered to the site prematurely which could result in additional areas being cleared or affected.
- No vegetation to be used for firewood.
- Gathering of firewood, fruit, medicinal plants, or any other natural material onsite or in areas adjacent to the site is prohibited unless with prior approval of the ECO.
- Construction site office and laydown areas must be clearly demarcated and no encroachment must occur beyond demarcated areas.
- All natural areas impacted during construction must be rehabilitated with locally indigenous plant species.
- A buffer zone must be established in areas where construction will not take place to ensure that construction activities do not extend into these areas.
- The use of pesticides and herbicides in the study area must be discouraged as these impacts on important pollinator species of indigenous vegetation.

- Soil stockpiles must not become contaminated with oil, diesel, petrol, garbage or any other material, which may inhibit the later growth of vegetation in the soil. Spillage can result in a loss of soil functionality thus limiting the re-establishment of flora.

8.4 RE-VEGETATION AND HABITAT REHABILITATION PLAN

The purpose of the rehabilitation plan is to ensure that areas cleared or impacted during construction activities are rehabilitated with a plant cover that reduces the risk of erosion from these areas as well as restores some ecosystem function. The purpose of the rehabilitation plan for the site can be summarised as follows:

- Achieve long-term stabilisation of all disturbed areas to minimise erosion potential.
- Re-vegetate all disturbed areas with suitable local plant species.
- Minimise visual impact of disturbed areas.
- Ensure that disturbed areas are safe for future uses.

Mitigation and management measures include, but are not limited to the following:

- Re-vegetation must aim to accelerate the natural succession processes so that the plant community develops in the desired way, i.e. promote rapid vegetation establishment.
- Re-vegetation of disturbed surfaces must occur immediately after construction activities are completed. This must be done through seeding with locally indigenous species typical of the representative botanical unit.
- Re-vegetation of the disturbed site is aimed at approximating as near as possible the natural vegetative conditions prevailing prior to construction.
- Seeds from surrounding seed banks can be used for re-seeding.
- Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas.
- Planting of indigenous tree species in areas not to be cultivated or built on must be encouraged.
- Monitoring programme to ensure that rehabilitation efforts are successful to ensure that risks such as erosion, spread of exotic species and the edge effect are avoided.

8.5 FIRE MANAGEMENT PLAN

The purpose of this plan is to address firefighting requirements throughout the construction of the project and to preserve and protect human life as well as tangible goods and equipment in the event of a fire.

Mitigation and management measures include, but are not limited to the following:

- All construction camps shall be provided with portable fire extinguishing equipment, in accordance with all relevant legislation and must be readily accessible.
- The Contractor shall take specific measures to prevent the spread of veld fires, caused by activities at the campsites. These measures must include appropriate instruction of employees about fire risks and the construction of firebreaks around the site perimeter.
- Fire prevention facilities must be present at all storage facilities. No open fires shall be allowed on site under any circumstance. All cooking shall be done in demarcated areas that are safe and cannot cause runaway fires.
- The Contractor shall have operational fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process.
- Emergency numbers for local police and fire department etc. must be placed in a prominent area.
- Firefighting equipment must be placed in prominent positions across the site where it is easily accessible. This includes fire extinguishers, a fire blanket as well as a water tank.
- All construction staff must be trained in fire hazard control and firefighting techniques. Translators are to be used where necessary.
- All flammable substances must be stored in dry areas which do not pose an ignition risk to the said substances.

- Smoking must only be conducted in demarcated areas.
- Firefighting equipment must be regularly maintained by an appropriate company.

8.6 EMERGENCY RESPONSE PLAN

Appropriate resources must be provided to respond to accidental and emergency situations for operations and activities during construction, operation and decommissioning phases. The procedures will include plans for addressing training, resources, responsibilities, communication and all other aspects required to effectively respond to emergencies associated with their respective hazards.

This Emergency Response Plan (ERP) is intended as a practical working document for the WCSEZ. The purpose of this document is to provide the basic guidelines on how to respond to potential emergency situations that may arise as at the WCSEZ. These potential emergency situations include medical emergencies and fires.

All activities associated with the project will require site-specific emergency response plans to mitigate impacts, which meet or exceed all applicable regulations.

The objectives of this plan are as follows:

- Protect the communities and the environment through the development of emergency response strategies and capabilities;
- Set out the framework for hazard identification in order to define procedures for response to the situations including the development of contingency measures;
- Structure a process for rapid and efficient response to and manage emergency situations during the construction, operational and decommissioning phases of the project; and
- Assign responsibilities for responding to emergency situations.

The ERP must take the incident procedures referred to in Section 30 of the NEMA into account.

8.6.1 ROLES AND RESPONSIBILITIES

With respect to this plan, the CDC has the responsibility to:

- Provide emergency response services and to structure and coordinate emergency response procedures for the project;
- Ensure that specific emergency responsibilities allocated to them are organised and undertaken; and
- Ensure that employees and contractor third parties are trained and aware of all required emergency procedures.

Roles, responsibility and authority shall be defined, documented and communicated in order to facilitate effective Emergency Response through implementation of the ERP. Management shall provide resources essential to the implementation and control of the ERP including: human resources, technology, and financial resources.

The CDC shall appoint specific Emergency Response representative(s) who, irrespective of other responsibilities, shall have defined roles, responsibility, and authority for emergency response of the facility.

The sections below provide more specific responsibilities related to each position.

<i>Emergency Response representative(s)</i>
<ul style="list-style-type: none"> ■ Actively participate in the facilities planning, implementation and reviewing of the sites Emergency response plan. ■ Ensure all staff members are aware of the procedures outlined in the ERP. ■ Setting up practical training schedules (drills) annually to ensure that all staff are prepared encase of an emergency. ■ Report any incidents that occur to senior management staff and/or the relevant authorities. ■ Appoint an Emergency Response (ER) team which includes an appropriate first aid representative and a fire warden. ■ Ensure that the appoint ER team undergo the correct training.

- Appoint an appropriate Emergency coordinator.

First Aid representative(s)

- Ensuring the first aid box is properly stocked to meet all foreseeable incidents which may occur.
- Ensure that the boxes are properly safe guarded and that First Aiders name appears on the box.
- Should any activity involve hazardous chemical substance's, or any other specific first aid emergencies, this must be brought to the attention of the emergency coordinator.
- Ensure the first aid certificate is current.
- Ensure that there is always a first aider available at each shift.

Fire warden(s)

- Ensure that the firefighting equipment is regularly serviced.
- Attend the relevant firefighting training.
- Report any unserviceable or damaged fire- fighting equipment to the ER.

Emergency Co-ordinator

- Ensure that an update of the ERP is kept on file and is easily accessible in case of an emergency.
- Ensure that all staff have been issued with the correct Personal Protective Equipment.
- Ensure that a list of emergency telephone numbers, including those of the Emergency Response team, are visible to all staff at a number of locations around the facility.
- In the case of an emergency, the emergency coordinator is responsible for undertaking roll call at the designated Assembly points.

8.6.2 EMERGENCY COMMUNICATIONS AND COORDINATING PLAN

In an emergency situation where there is an immediate threat to communities, personnel or the environment, the Project Manager will be notified immediately. The Project Manager will dispatch the Emergency Response Coordinator who will determine the appropriate plan of action depending on the severity of the emergency, the people affected, and the need to evacuate.

If there is a developing emergency or unusual situation, where an emergency is not imminent, but could occur if no action is taken, the Project Manager (or if the Project Manager is absent the Environmental Manager) is to be informed immediately. Once the emergency or unusual situation has been managed, the correct incident/near miss must be reported to the General Manager.

If an emergency situation poses a direct threat to communities in the area, the Environmental Officer and/or Social Officer will advise persons in the vicinity of the emergency to evacuate due to the potential risk. The appropriate government authorities will immediately be notified of such an emergency evacuation. The Emergency Response Coordinator will be tasked with responding to the potential risk. Should the emergency situation be such that it can be managed by the Project Company, equipment and personnel will be deployed to the maximum extent necessary, so as to prevent/minimise potential risks.

8.6.3 RESPONSE TO INCIDENTS

An incident is any occurrence that has caused, or has the potential to cause, a negative impact on people, the environment or property (or a combination thereof). It also includes any significant departure from standard operating procedures. The reporting and investigation of all potential and actual incidents that could have a detrimental impact on human health, the natural environment or property is required so that remedial and preventive steps must be taken to reduce the potential or actual impacts because of all such incidents.

Any incident must immediately be reported to the relevant authorities and all the necessary documentation must be completed and submitted to the relevant authorities within the prescribed timeframes.

The actions resulting from any formal or informal investigations will be used to update the EMPr.

8.6.4 VERIFICATION

An environmental emergency response system will be developed for the execution of emergency drills that will include the following, inter alia:

- Fire Drills;
- Emergency Evacuation Drills; and
- Medical and Environmental Drills.

Reporting and monitoring requirements for the plan will include:

- Monthly inspections and audits;
- Quarterly reporting of accidents/ incidents;
- Reporting at the time of the incident and monthly spill reporting developed by the Environmental and Quality, Health and Safety departments;
- Bi-annual emergency response drills; and
- Annual reporting on training.

Emergency response drills and reporting will be maintained by the Project Manager and will provide information regarding required revisions to training or the emergency response actions. Each incident reported will be reviewed and investigated upon occurring. Actions will be identified where possible to improve the site’s overall response to emergencies. Updates/revisions that are necessary to protect worker or community health and safety will be implemented immediately after approval by the General Manager.

This plan will be amended periodically in light of operational changes, learning experienced during its implementation and other activities that can affect the risk profiles.

8.6.5 POTENTIAL RISKS

The following emergency situations have been identified as potential threats at the WCSEZ:

- Fire and explosions
- Spills

It must be noted that there is a very minor risk associated with these risks as only a very small quantity of chemicals or hazardous substances are actually stored on site.

Fire	Responsibility
■ Raise the alarm	Employee who detected the fire
■ Switch of all automated systems within the facility	ER Team
■ Evacuate all personnel in the building	ER Team
■ Contact all relevant emergency services	Emergency Coordinator
■ Report to the emergency Assembly Point and await further instructions	All Staff
■ Remove all vehicles from the premises	ER Team and security
■ Undertake roll call and report all missing staff to the ER team	ER Coordinator
■ Evacuate remaining staff to a safe location outside the site boundaries	ER Team
■ Contain fire until Emergency services arrives	Fire warden
■ Provide First Aid, if required	First Aid representative
Spill	Responsibility
■ Contain the spillage using an onsite spill kit	Employee who discovered/caused the spill
■ Advice emergency services (if required)	Emergency coordinator
■ Provide First Aid (if required)	First Aid representative
■ Ensure that all absorbents used from the spill kits are disposed of in the correct manner.	Emergency coordinator

- | | |
|---|-----------------------|
| ■ Ensure that the incident is recorded in the incidents register. | Emergency coordinator |
|---|-----------------------|

The following emergency centres were identified along with the corresponding emergency telephone numbers.

Emergency Centre	Telephone Number
■ Mthatha Fire and Emergency Services	047 501 4182
■ Police Emergency Services	047 501 1010 10111
■ Mthatha Ambulance Services	10177 (Ambulance/Fire Brigade) 047 532 4174
■ Suicide Crisis Line	112 (from all cellphone networks) 0800 12 13 14 31393

8.7 STORMWATER MANAGEMENT PLAN

A Storm Water Management and Surface Water Protection Plan cannot be compiled until the detailed designs of prospective tenants are complete. It is stipulated in this EMP that a Storm Water Management Plan must be compiled before any construction commences and implemented during the construction phase. This plan must indicate how all surface runoff generated as a result of the project and associated activities (during both the construction and operational phases) will be managed prior to entering any natural drainage system or wetland and how surface water runoff will be retained outside of any demarcated buffer zones and subsequently released to simulate natural hydrological conditions.

8.8 EROSION MANAGEMENT PLAN

Exposed and unprotected soils are the main cause of erosion in most situations. Therefore, this erosion management plan and the revegetation and rehabilitation plan are closely linked to one another and must not operate independently, but must rather be seen as complementary activities within the broader environmental management of the site and must therefore be managed together. This Erosion Management Plan addresses the management and mitigation of potential impacts relating to soil erosion, including:

- Material stockpiled for long periods (2 weeks) must be retained in a bermed area.
- Stockpiles not used in three (3) months after stripping must be seeded to prevent dust and erosion.
- Sensitive areas need to be identified prior to construction so that the necessary precautions must be implemented.
- Vegetation clearance must be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time.
- Areas to be cleared must be clearly demarcated and this footprint strictly maintained.
- Areas which are not to be constructed on within two months must not be cleared to reduce erosion risks.
- Silt fences and erosion control measures must be implemented in areas where these risks are more prevalent.
- Wind screening and stormwater control must be undertaken to prevent soil loss from the site.
- Other erosion control measures that must be implemented are as follows:
 - Brush packing with cleared vegetation
 - Mulch or chip packing
 - Planting of vegetation
 - Hydroseeding / hand sowing
- All erosion control mechanisms need to be regularly maintained.

- Seeding of topsoil and subsoil stockpiles to prevent wind and water erosion of soil surfaces. Re-vegetation of disturbed surfaces must occur immediately after construction activities are completed. This must be done through seeding with indigenous grasses.
- No impediment to the natural water flow other than approved erosion control works is permitted.
- To prevent stormwater damage, the increase in stormwater run-off resulting from construction activities must be estimated and the drainage system assessed accordingly.

9 CONCLUSION

In terms of NEMA, everyone (i.e. all persons engaging in any component of this project) is required to take reasonable measures to ensure that they do not pollute the environment. 'Reasonable measures' includes informing and educating employees about the environmental risks associated with their work and training them to operate in an environmentally responsible manner.

The CDC also recognises that, in terms of NEMA, the cost to repair any environmental damage will be borne by the person responsible for the damage. If the above-mentioned environmental guidelines and mitigation measures are adopted, it is anticipated that the negative environmental impacts of the proposed SEZ will be mitigated. A CDC appointed ECO must monitor the site periodically throughout construction to ensure that the required environmental controls are in place and working effectively.

If you have any further enquiries, please feel free to contact:

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EAP CV





ASHLEA STRONG, MEM, EAP

**Principal Consultant (Environmental Services),
Environment & Energy**



YEARS WITH THE FIRM

4

YEARS TOTAL

14

PROFESSIONAL QUALIFICATIONS

CEAPSA

AREAS OF PRACTICE

Auditing

Energy

Environmental Control

Health & Safety

Infrastructure

Mining

SEIR

Training

Waste Management

CAREER SUMMARY

Ashlea is a Principal Consultant with 14 years' experience in the environmental field. She currently provides technical and strategic expertise on a diverse range of projects in the environmental management field, including environmental scoping and impact assessment studies, environmental management plans, waste and water management, as well as the provision of environmental management solutions and mitigation measures

Ashlea has been involved in the management of a number of large EIAs specifically within the energy sector such as the Medupi Power Station, and Pebble-Bed Modular Reactor (PBMR) and numerous Transmission Powerlines. She also has environmental auditing and training experience and expertise.

Ashlea holds a Masters in Environmental Management; a BTech (Nature Conservation), and a National Diploma (Nature Conservation); She is also a Certified Environmental Assessment Practitioner of South Africa (CEAPSA).

EDUCATION

Masters in Environmental Management, University of the Free State, South Africa	2006
B Tech, Nature Conservation, Technikon SA, South Africa	2001
National Diploma in Nature Conservation, Technikon SA, South Africa	1999

ADDITIONAL TRAINING

Conduct outcomes based assessment (NQF Level 5), South African Qualifications Authority (SAQA)	2009
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PROFESSIONAL MEMBERSHIPS

Certified Environmental Assessment Practitioner of South Africa, with the Interim Certification Board (CEAPSA)	2010
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PROFESSIONAL EXPERIENCE

Energy Sector

- Southern Energy Coal Fired Power Station (2016): Project Manager. This project involved the high-level review of the Environmental Impact Assessment for the Southern Energy Coal Fired Power Station near Hwange in Zimbabwe against relevant legislation and standards. Client: WSP | Parsons Brinckerhoff.
- Proposed Solar and Wind Projects located in the Northern and Western Cape Provinces (2015) Project Manager. This project involved the compilation of 15 Environmental Impact Assessments and Environmental Management Plans for 2 Solar and 2 Wind energy Projects near Aggenys and Sutherland respectively. Client: BioTherm Energy (Pty) Ltd.
- Proposed Solar Park, Northern Cape Province, South Africa (2012): Strategic Environmental Advisor. This project involved the provision of process expertise for the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Solar Park in the Northern Cape Province. Client: Central Energy Fund (CEF).



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- Proposed Tabor - Nzhelele 400kV Transmission Lines and associated infrastructure, Limpopo Province, South Africa (2012): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a 100km 400kV powerline between Louis Trichardt and Musina in the Limpopo Province. Client: Eskom Transmission.
- Retrofitting of the existing Electrostatic Precipitators with Fabric Filter Plants at Units 2, 3 and 4 at the Grootvlei Power Station, South Africa (2012): Project Manager. This project involved the compilation of a Basic Assessment Report and Environmental Management Plan for the proposed retrofitting of the existing Electrostatic Precipitators with Fabric Filter Plants at the Grootvlei Power Station. Client: Eskom Holdings SOC Limited.
- Proposed Mulilo Coal Fired Power Station and associated infrastructure as well as associated power lines and substations, Musina, Limpopo, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Mulilo Coal Fired Power Station and associated infrastructure as well as associated power lines and substations in the Musina area of the Limpopo Province. Client: Parsons Brinkerhoff Africa and Mulilo Power.
- Pebble Bed Modular Reactor Demonstration Plant and Associated Infrastructure, Western Cape, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Pebble Bed Modular Reactor Demonstration Plant and Associated Infrastructure in the Western Cape Province. Client: Eskom Generation.
- Proposed Bantamsklip – Kappa 765 kV Transmission Lines and associated infrastructure, Western and Northern Cape, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for four 260km 765kV powerlines between the Bantamsklip Nuclear Power Station Site and the proposed new Kappa Substation in the Karoo, Western Cape Province. Client: Eskom Transmissions.
- Proposed Bantamsklip – Bacchus, Bacchus - Kappa and Bacchus – Muldersvlei 400 kV Transmission Lines and associated infrastructure, Western and Northern Cape, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a number of 400kV powerlines between the Bantamsklip Nuclear Power Station Site and a number of substations, including Bacchus, Kappa and Muldersvlei, in the Western Cape Province. Client: Eskom Transmission.
- Westgate – Tarlton – Kromdraai 132 kV Sub-Transmission line and associated infrastructure, Gauteng, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the Westgate – Tarlton – Kromdraai 132 kV Sub-Transmission line and associated infrastructure in the Gauteng Province. Client: Eskom Distribution – Central region.
- Environmental Scoping Study for the proposed new distribution line and substation for Eskom, Dundonald, Mpumalanga (also involved in the Public Participation Process), Mpumalanga, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a 132kV powerline as well as a new substation in the Tarlton area of Gauteng.
- The proposed new 132 kV sub-transmission line between the Dinaledi and GaRankuwa substations for Eskom, GaRankuwa, North West, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a



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- 132kV powerline between the Dinaledi and GaRankuwa substations in the GaRankuwa area of the North West Province. Client: Eskom Distribution.
- Expansion of the Transmission powerline network and associated infrastructure between the Perseus substation and the Beta substation, Free State, South Africa (2008): Project Manager. This project involved the compilation of an alignment specific construction Environmental Management Plan for the 13km 765kV Perseus Beta Turn-ins. Eskom Transmission
 - Tarlton – Kromdraai 132 kV Sub-Transmission line and associated infrastructure, Gauteng, South Africa (2008): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for a 132kV powerline as well as a new substation in the Tarlton area of Gauteng. Client: Eskom Distribution – Central Region.
 - Basic Assessment for the proposed Watershed – Mmabatho 88kV Power line. North West, South Africa (2008): Project Manager. This project involved the compilation of a Basic Assessment and Environmental Management Plan for a new 88kV powerline near Mmabatho in the North West Province. Client: Eskom Distribution – Central Region.
 - Proposed Watershed – Mmabatho 88kV Power line. North West, South Africa (2007): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the Watershed – Mmabatho 88kV Power line in the North West Province. Client: Eskom Distribution – Central Region.
 - Proposed Combined Cycle Gas Turbine Plant and Associated Infrastructure near Majuba, Mpumalanga, South Africa (2007): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Combined Cycle Gas Turbine Plant and Associated Infrastructure near Majuba in the Mpumalanga Province. Client: Eskom Holdings SOC Limited.
 - Proposed Capacity Increase of the Atlantis OCGT Plant and Associated Infrastructure, Western Cape, South Africa (2006): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Capacity Increase of the Atlantis OCGT Plant and Associated Infrastructure in the Western Cape Province. Client: Eskom Generation.
 - Proposed Concentrated Solar Thermal Plant in the Northern Cape, South Africa (2006): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Concentrated Solar Thermal Plant near Upington in the Northern Cape Province. Client: Eskom Holdings SOC Limited.
 - Proposed Underground Coal Gasification plant, Eskom, Mpumalanga, South Africa (2006): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Underground Coal Gasification plant near the Majuba Power Station in the Mpumalanga Province. Client: Eskom Holdings SOC Limited.
 - Proposed new Coal-fired Power Station in the Lephalale Area for Eskom, Limpopo, South Africa (2005): Project Manager. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed new Coal-fired Power Station in the Lephalale Area in the Limpopo Province. Client: Eskom Generation.
 - Proposed Open Cycle Gas Turbine Power Station at Atlantis for Eskom, Western Cape, South Africa (2005): Environmental Consultant. This project involved the compilation of an Environmental Impact Assessment and Environmental Management Plan for the proposed Open Cycle Gas Turbine

Power Station at Atlantis in the Western Cape Province. Client: Eskom Generation.

Infrastructure Sector

- Rehabilitation of the R34 between Vryburg and Schweizer-Reneke, North West, South Africa (2016): Project Manager. This project involved the compilation of a Basic Assessment and Environmental Management Plan for the upgrading of the R34 between Vryburg and Schweizer-Reneke. Client: SANRAL
- Proposed Expansion of the Cremation Facilities at the Envirocin Pet Crematorium, Gauteng, South Africa (2013): Project Manager. This project involves the compilation of a basic assessment for the expansion of the cremation facilities at the Envirocin Pet Crematorium in Kyasands, Gauteng Province. Client: Envirocin Incineration Systems CC.
- Proposed Kraft Paper Mill in Frankfort, Frankfort, Free State, South Africa (2013): Project Manager. This project involved the undertaking of an Environmental Impact Assessment, including the compilation of an Environmental Management Programme, for the proposed establishment of a KRAFT paper mill in Frankfort in the Free State Province. Client: Industrial Development Corporation of SA (Pty) Ltd.
- Rehabilitation of the N14 between Delerayville and Sannieshof, North West, South Africa (2011): Project Manager. This project involved the compilation of a Basic Assessment and Environmental Management Plan for the upgrading of the N14 between Sannieshof and Delerayville as well as the construction of a new bridge over the Hartsriver. This project also included the compilation of Water Use License and Mining Permit Applications. Client: SANRAL.
- Proposed new Waterfall Cemetery, Limpopo, South Africa (2011): Project Manager. This project involved the compilation of a Basic Assessment and Environmental Management Plan for the new Waterfall Cemetery, Limpopo Province. Client: Makhado Municipality.
- Route determination of the proposed Metro Boulevard, Gauteng, South Africa (2008): Project Manager. This project involved the undertaking of an Environmental Impact Assessment for the route determination of the proposed Metro Boulevard in the Weltevreden Park Area of the Gauteng Province. Client: Johannesburg Roads Agency.
- Proposed new fuel supply pipeline between Milnerton and Atlantis, Western Cape, South Africa (2007): Project Manager. This project involved undertaking an Environmental Impact Assessment for the proposed new fuel supply pipeline between Milnerton and Atlantis to supply the Ankerlig Power Station in the Western Cape Province. Client: Eskom Generation.

Mining Sector

- Establishment of the Proposed Rietvlei Opencast Coal Mine, Mpumalanga, South Africa (2013): Project Manager. This project involves the undertaking of an integrated environmental authorisation process, including an Environmental Impact Assessment, Environmental Management Programme Report, Waste Management License Application and Water Use License Application, for the establishment of an opencast coal mine north of Middelburg. Client: Rietvlei Mining Company.
- Decommissioning of Redundant Infrastructure at the Vaal River Operations, North West and Free State, South Africa (2013): Project Manager. This project involves undertaking an integrated Environmental Authorisation and Waste Management License process for the proposed decommissioning of redundant infrastructure at AngloGold Ashanti's Vaal River Operations. Client: AngloGold Ashanti.



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- Decommissioning of Redundant Infrastructure at the West Wits Operations, Gauteng, South Africa (2013): Project Manager. This project involves undertaking a Basic Assessment process for the proposed decommissioning of redundant infrastructure at AngloGold Ashanti's West Wits Operations. Client: AngloGold Ashanti (Pty) Ltd.
- Inyanda Mine Pegasus South Expansion, Mpumalanga, South Africa (2011): Project Manager. This project included the compilation of an Environmental Impact Assessment, Environmental Management Plan, the Amendment of the existing Environmental Management Programme Report and the amendment of the existing Water Use License for the Inyanda Mine Pegasus South Expansion project, north of Middelburg in the Mpumalanga Province. Client: Exxaro Coal (Pty) Ltd.
- Sishen Infrastructure Program, Northern Cape, South Africa (2010): Project Manager. This project involved the compilation of an Environmental Impact Assessment and an Environmental Management Plan for the infrastructure expansion programme proposed by the Sishen Mine in the Northern Cape. Client: Sishen Iron Ore (Pty) Ltd.
- Prospecting Permit Applications in the Kuruman area of the Northern Cape, South Africa (2011): Project Manager. This project involved the compilation of Environmental Management plans as part of six applications for Prospecting Permits in the Kuruman area of the Northern Cape. Client: Sound Mining Solutions.
- Borrow pits required by the Limpopo Department of Roads and Transport, Limpopo, South Africa (2010): Project Manager. This project involved the compilation of Environmental Management plans as part of the applications for Mining Permits for borrow pits required for the rehabilitation of provincial roads in the Limpopo Province. Client: Limpopo Department of Roads and Transport.
- Borrow pits required for the Medupi Coal Fired Power Station, Limpopo, South Africa (2008): Project Manager. This project involved the compilation of Environmental Management plans as part of the applications for Mining Permits for borrow pits required for the Medupi Coal Fired Power Station in the Limpopo Province. Client: Eskom Generation.
- Borrow pits required for the Ingula Pumped Storage Scheme, KwaZulu-Natal, South Africa (2008): Project Manager. This project involved the compilation of Environmental Management plans as part of the applications for Mining Permits for borrow pits required for the Ingula Pumped Storage Scheme in the Kwa-Zulu Natal Province. Client: Eskom Generation.
- Project Manager, Mining Right Application for a 23 Hectare Borrow Pit required for the Steelpoort Pumped Storage Scheme, Mpumalanga, South Africa (2007): Project Manager. This project entailed the compilation of the required Environmental Management Programme Report in support of a Mining Right Application for a 23 Hectare Borrow Pit required for the Steelpoort Pumped Storage Scheme in the Mpumalanga Province. Client: Eskom Generation.
- Renewed Mining and Prospecting Activities on the farm Quaggaskop 215, Vanrhynsdorp, Western Cape, South Africa (2004): Environmental Consultant. This project involved the compilation of an Environmental Management Programme Report for the recommencement of mining and prospecting activities on the farm Quaggaskop 215 outside Vanrhynsdorp in Western Cape Province. Client: Minexpo.

Waste Management Projects

- Proposed continuous Ashing at Majuba Power Station, Mpumalanga, South Africa (2012): Project Manager. This project entailed the compilation



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- Environmental Impact Assessment and Waste Management License Application for the proposed continuous ashing project at the Majuba Power Station in Mpumalanga. Client: Eskom Holdings SOC Limited.
- Proposed continuous Ashing at Tutuka Power Station, Mpumalanga, South Africa (2012): Project Manager. This project entailed the compilation Environmental Impact Assessment and Waste Management License Application for the proposed continuous ashing project at the Tutuka Power Station in Mpumalanga. Client: Eskom Holdings SOC Limited.
 - Proposed extension of Ash Dams at Hendrina Power Station, Mpumalanga, South Africa (2011): Project Manager. This project entailed the compilation Environmental Impact Assessment and Waste Management License Application for the proposed extension of the ash dams at the Hendrina Power Station in Mpumalanga. Client: Hendrina Power Station.
 - Phase 1 of the Environmental Impact Assessment for the Proposed Regional General and Hazardous Waste Processing Facility, Eastern Cape (2005). Project Manager. This project entailed the compilation Environmental Impact Assessment for the Proposed Regional General and Hazardous Waste Processing Facility in the Eastern Cape. Client: Coega Development Corporation.

Specialist Projects

- Strategic Environmental Assessment for the Development. Master Plan Greater Port Harcourt, Rivers State, Nigeria, Africa (2008): Senior Environmental Consultant. This project entailed the compilation of a Strategic Environmental Assessment for the City of Port Harcourt as part of the development of the Master Plan for the Greater Port Harcourt Area. Client: Port Harcourt Government
- Development of an Environmental Policy, Gauteng, South Africa (2006): Environmental Consultant. This project entailed the development and compilation of an environmental policy for the Ekurhuleni Metropolitan Municipality. Client: Ekurhuleni Metropolitan Municipality.
- Environmental Input into the National Transport Master Plan, South Africa (2007): Environmental Consultant. This project included the provision of strategic environmental input in to the Draft National Transport Plan. Client: Department of Transport.
- Development of the Development Corridors, Ekurhuleni, Gauteng, South Africa (2006): Environmental Consultant. This project included the provision of strategic environmental input in to the Ekurhuleni Metropolitan Municipalities Development Corridor Study. Client: Ekurhuleni Metropolitan Municipality.

Auditing

- Compliance Audit for the Bokpoort Concentrating Solar Power (CSP) Facility, Groblershoop, Northern Cape, South Africa (2016): Lead Auditor. This project involved the environmental compliance auditing of the Waste Management License, Environmental Authorisation and Water Use License for the Bokpoort CSP Facility near Groblershoop in the Northern Cape Province. Client: ACWA Power Solafrica Bokpoort CSP Power Plant (Pty) Ltd.
- Compliance Audit for the Waste Recycling Facility and Redundant Materials Management Yard, Secunda, Mpumalanga, South Africa (2016): Lead Auditor. This project involved the environmental compliance auditing of the Waste Management license and other relevant permits for Waste Recycling Facility and Redundant Materials Management Yard in Secunda in Mpumalanga Province. Client: Sasol Chemical Industries: Secunda Synfuels Operations.



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Principal Consultant (Environmental Services), Environment & Energy

- InvestChem Annual Environmental Compliance Monitoring, Kempton Park, Gauteng, South Africa (2013 - 2016): Lead Auditor. This project involved the annual environmental compliance auditing for InvestChem's Sulphonation Plant in Kempton Park, Gauteng Province. The monitoring included InvestChem's compliance to various commitments contained in their environmental management programmes and conditions within their environmental authorisations (records of decision). Client: Investchem (Pty) Ltd.
- Waste Management License Audit for the Sasol Waste Ash Site, Secunda, Mpumalanga, South Africa (2014 - 2016): Lead Auditor. This project involved the annual environmental compliance auditing of the Waste Management license for Sasol's Waste Ash Site in Secunda in Mpumalanga Province. Client: Sasol Chemical Industries: Secunda Synfuels Operations.
- EMPR Performance Assessment Report for the Landau Colliery, Mpumalanga, South Africa (2013): Auditor. This project involved the formal assessment and verification of the Landau Colliery Environmental Management Programme Report, conducted in accordance with Regulation 55 of the Mineral and Petroleum Resources Development Act (No. 28 of 2002). Client: Anglo Thermal Coal.
- Waste Management License Audit for the Slagment Operation, Vanderbijlpark, Gauteng, South Africa (2013): Lead Auditor. This project involved the annual environmental compliance auditing for AfriSam's Slagment Operation in Vanderbijlpark in Gauteng Province. The audit included AfriSam's compliance to the conditions of their waste management license. Client: AfriSam Southern Africa (Pty) Ltd.
- EMPR Performance Assessment Report for the New Vaal Colliery, Free State, South Africa (2006-2007): Auditor. This project involved the formal assessment and verification of the New Vaal Colliery Environmental Management Programme Report, conducted in accordance with Regulation 55 of the Mineral and Petroleum Resources Development Act (No. 28 of 2002). Client: Anglo American Thermal Coal.

Environmental Control Projects

- N14 rehabilitation between Sannieshof and Delareyville, North West, South Africa (2012): Environmental Control Officer. This project involved the monthly auditing of the contractor's compliance with the conditions of the approved Environmental Management Plan as well as ad hoc environmental advise to the Project Engineer and SANRAL. Client: SANRAL.
- Delmas and Bontleng Waste Water Treatment Works, Mpumalanga, South Africa (2009): Environmental Control Officer. This project involved a once off compliance audit of the above-mentioned Waste Water Treatment Works. Client: Victor Khanye Municipality.
- Nkonjaneni Water Borne Sewer Project in Piet Retief, Mpumalanga, South Africa (2009): Environmental Control Officer. This project involved the monthly auditing of the contractor's compliance with the conditions of the approved Environmental Management Plan as well as ad hoc environmental advise to the Project Engineer. Client: Mkhondo Local Municipality.
- Upgrading of the Waterval Water Care Works, Gauteng, South Africa (2005-2007): Environmental Control Officer. This project involved the monthly auditing of the contractor's compliance with the conditions of the approved Environmental Management Plan. Client: ERWAT.
- Lotus Gardens Ext 2 Township establishment, Gauteng, South Africa (2003): Environmental Control Officer. This project involved the monthly auditing of the contractor's compliance with the conditions of the approved Environmental Management Plan. Client: City of Tshwane.



ASHLEA STRONG, MEM, EAP

Principal Consultant (Environmental Services), Environment & Energy

Training

- N14 rehabilitation between Sannieshof and Delareyville, North West, South Africa (2012): Project Manager. This project involved the provision of training for the staff of the N14 rehabilitation project with regards to the contents of the environmental management plan. Client: SANRAL.
- Training in Environmental Aspects and Rehabilitation for the Small Scale Mining Division of Mintek, City, Province, South Africa (2004): Trainer. This project involved the provision of environmental awareness training for delegates involved in the small scale miner training programme run by the Mintek small scale mining division. Client: Mintek
- Training in Environmental Aspects and Impacts, Germiston, Gauteng, South Africa (2004): Trainer. This project involved the provision of environmental aspects and impacts training for the staff of Transwerk in Germiston. Client: Transwerk Germiston.

Health & Safety Projects

- Payneville water and sewer reticulation project, Gauteng, South Africa (2012): Health and Safety Officer. This project involved the monthly health and safety auditing of the Payneville water and sewer reticulation project in Springs. Client: Ekurhuleni Metropolitan Municipality.
- Nkonjaneni Water Borne Sewer Project in Piet Retief, Mpumalanga, South Africa (2009): Health and Safety Officer. This project involved the monthly health and safety auditing of the Nkonjaneni water borne sewer project in Piet Retief. Client: Mkhondo Local Municipality.



CHIFADZA TUTAYI, B.Sc.H

Environmental Consultant (Environmental Management), Environment & Energy



YEARS WITH THE FIRM

1>

YEARS TOTAL

3.5

AREAS OF PRACTICE

Environmental Management

CAREER SUMMARY

Tutayi Chifadza is an Assistant Environmental Consultant for WSP at the Johannesburg, Bryanston office in the Environmental Services division. He moved to WSP from Sparrow Consulting almost a year ago where he was Project Manager for their Technical Manual/Training material development team.

He is currently teaming up with Senior Consultants on Water Use License applications, BA and audits for Transnet on their pipeline infrastructure as well as the BA process for Sasol Energy Technology. He conducted Water Use License audits for four sections at South 32 and its reporting. He was also responsible for conducting a Waste Management Licence audit and its reporting for the Sappi solid waste disposal facility in Springs, Gauteng.

Tutayi has been previously involved in the technical area of production industries with regards to their processes and instrumentation for the purpose of creating technical training manuals and SOPs. He is currently part of the Employment Equity Committee at WSP and recently completed an online training course in Project Management Professional.

EDUCATION

Bachelor of Science (Honours), Applied Science in Environmental Technology, University of Pretoria, Pretoria, South Africa	2013
Bachelor of Science, Chemistry, University of Pretoria, Pretoria, South Africa	2012

ADDITIONAL TRAINING

Certificate of Completion for Project Management Professional (PMBOK), e-careers (Online learning)	2016
--	------

PROFESSIONAL EXPERIENCE

Environmental Services

- Knightsbridge Development EMP ECO, Johannesburg, Gauteng, South Africa (2016): Tutayi's role was to conduct the ECO audit against the EMP created for Greenstar requirements. Client: Emira Property.
- PPC Waste Classification, All PPC South Africa sites, South Africa (2016): Tutayi's role was to consolidate the waste inventories from different sites into one waste inventory, pre-classify the waste, collect samples, conduct waste profiling, waste classification and create SDSs based on laboratory analysis of samples collected. He also created generic SDSs for waste where sampling was not required. Client: PPC Ltd.
- FFS Construction of a Filtration Plant at the FFS Evander Facility, Evander, Mpumalanga, South Africa (2016): Tutayi's role was to conduct the audit of the relevant license conditions during the construction phase of the filtration plant and. He also conducted the close-out audit for the construction phase. The project is about monitoring and auditing the state of the site during the construction of the filtration plant. Client: FFS Refiners (Pty) Ltd.
- Total SA WMP, Johannesburg, Gauteng, South Africa (2016): Tutayi's role is to create a waste database, rating waste, SDSs and devising best management plans for each type of waste at Total entities. The project involves creating a waste management plan for all forms of waste at Total entities. This includes



CHIFADZA TUTAYI, B.Sc.H

Environmental Consultant (Environmental Management), Environment & Energy

depots, offices, commercial installations, service stations, ISPs and LMPs.
Client: Total SA.

- South 32 EMPR PAR, WUL and WML audits, Middelburg, Mpumalanga, South Africa (2016): Tutayi's role was to conduct WUL audits for the Klipfontein, MMS North and South, Douglas and BMK Extension coal mining sections as well as write up the relevant reports. The project is about conducting performance assessment reports (EMPR), as well as WUL and WML auditing. Client: Middleburg Mine Services (South 32).
- Impala Plat Landfill Audit, Rustenberg, North West, South Africa (2016): Tutayi's role was to take gas concentration readings from probes strategically placed on the landfill using the Geotech instrument. Methane, oxygen, carbon dioxide and nitrogen gas concentrations were focused on. The project is about auditing the landfill and monitor the gas concentrations to make sure that there is no significant methane build-up within the landfill. Client: Impala Platinum Limited.
- Butsanani EIA-EMPR, Middelburg, Mpumalanga, South Africa (2016): Tutayi's role was to help the senior consultant in compiling, collecting and researching data for the purpose of filling in the WUL application forms. The project is about helping the client acquire the WUL in order to start mining activities. Client: Rietvlei Mining Company (Pty) Ltd.
- Samancor Manganese South Plant demolition, Meyerton, Gauteng, South Africa (2016): Tutayi's role was to provide ECO services for the demolition of the South Plant site on the premises. This entailed conducting environmental audits to ensure EMP compliance for the project to minimise impacts and risk during the activities. Client: Samancor Manganese, Metalloys, operated by South 32.
- Sappi External Waste Management Licence Compliance Audit, Springs, Gauteng, South Africa (2016): Tutayi was responsible for conducting the WML environmental compliance audit of the solid waste disposal facility situated at Enstra and compile an audit report according to the requirements of the National Environmental Management Waste Act (No. 59 of 2008) (NEMWA). Client: Sappi Southern Africa Limited.
- General Electric Healthcare Environmental Health and Safety Audit, Rosebank, Gauteng, South Africa (2016): Tutayi was responsible for undertaking an Environmental Health and Safety (EHS) inspection of the GE Healthcare operations in Rosebank and one field site. The field site was at the Life Carstenhof Hospital where the Field Engineers were installing a new piece of equipment. Client: GE Healthcare, a Division of General Electric.
- Rose Foundation Environmental Compliance Audit of Old Oil Man, Chamdor, Gauteng, South Africa (2016): Tutayi was responsible for undertaking an environmental compliance audit to identify and assess key environmental issues pertaining to the operations and facilities against which on-going continuous improvements and modifications of the facility can be evaluated. The audit covered site operational control measures, legal and regulatory compliance, impacts to environment and general environmental practice. Client: Rose Foundation.
- Samancor Chrome Turfontein Underground Mine Project Mooioi, North West, South Africa (2016): Tutayi assisted in facilitating the public participation process during the public meeting conducted to provide insight into the potential impacts and benefits from the proposed underground mine project. Client: Samancor Chrome.
- Sasol Oil Pretoria West Depot Environmental Authorisation Compliance Audit, Pretoria West, Gauteng, South Africa (2016): Tutayi was responsible for conducting a technical compliance audit of the Exemption Record of Decision

(ROD) and an Amended Environmental Authorisation (EA) and compile an audit report according to the requirements of the National Environmental Management Act (No. 107 of 1998) as amended (NEMA), and as part of the conditions of the EA. Client: Sasol Oil (Pty) Ltd.

- BioTherm Wind and Solar Energy Facilities, Western Cape and Northern Cape, South Africa (2017-2017): Tutayi assisted in the creation of a consolidated impact assessment rating based on the available specialist studies as well as consolidating the comments and response from commenting authorities and stakeholders. Client: BioTherm Energy.
- Sasol Energy Technology Blending Facility Upgrade Project, Sasolburg, Free State, South Africa (2016-2017): Tutayi is part of a two-man team responsible for the EIA process for the replacement of old USTs with new ones on the Sasol One site. Client: Sasol Energy Technology, a Division of Sasol Oil (Pty) Ltd.
- Anglo Platinum Water Separation Project, Rustenburg, North West, Gauteng (2016-2-17): Tutayi is assisting in the BA process for the proposed refurbishment of an existing pipeline and installation of new pipelines as well in the Water Infrastructure Separation Project. Client: Anglo American Platinum Limited.
- South 32 Middelburg Water Reclamation Plant (MWRP), Middelburg, Mpumalanga, South Africa (2017): Tutayi is part of the team conducting sampling and classification of Stage 1 and Stage 2 gypsum produced as the by-product of the process as well as conducting the fertiliser assessment potential of the by-products. Client: South 32 Limited.
- J.P Morgan Chase & Company, 1 Fricker Road EMP ECO, Illovo, Gauteng, South Africa (2017): Tutayi compiled the EMP for the proposed refurbishment of the office building to attain a Green Star rating and is also responsible for conducting the first EMP compliance audit and training of the DEO to carry out subsequent audits. Client: J.P Morgan Chase & Company.
- Transnet Pipelines EIA/BA process ECO, Phola & Secunda, Mpumalanga, South Africa (2017): Tutayi is responsible for undertaking the BA and EIA process, WUL applications and ECO activities in the Mpumalanga region on an as and when required basis for the existing and potential new pipeline infrastructure. Client: Transnet Pipelines, a Division of Transnet Limited.

B EAP DECLARATION OF INTEREST AND UNDERTAKING





Client ref.: 14/12/16/3/3/2/1064
WSP ref.: 41100611

06 August 2018

PUBLIC

Subject: Affirmation By Environmental Assessment Practitioner: As required in terms of Appendix 3, subsection(s) of Government Notice Regulation (GNR) 326

PROJECT NAME: The Proposed Wildcoast Special Economic Zone in Mthatha, Eastern Cape Province

Consultant:	WSP Environmental (Pty) Ltd
EAP Details	
Contact Person:	Tutayi Chifadza
Postal Address:	P O Box 98867, Sloane Park, 2152
Physical Address:	Building C, Knightbridge, 33 Sloane Street, Bryanston, 2191, South Africa
Telephone:	011 361 1390
Fax:	011 361 1301
Email:	Tutayi.Chifadza@wsp.com

I, **Tutayi Chifadza**, the appointed Environmental Assessment Practitioner (EAP), confirm through this affirmation (as required in terms of Appendix 3 subsection (s) of GNR 326) that:

- i. To the best of my knowledge the information provided in this report is factually correct
- ii. To the best of my knowledge all relevant project information which has been provided to stakeholders and interested and affected parties (I&APs) is correct
- iii. All comments and inputs received from stakeholders / I&APs, prior to the submission of the Environmental Impact Report, have been included as part of the Environmental Impact Report and addressed where necessary
- iv. All information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties are the unbiased opinion of the EAP and are based on factually correct information

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Bryanston, 2191
South Africa

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- v. All inputs and recommendations from the specialist reports have been included as part of the Environmental Impact Report where relevant.

Thifadza

Signature of the EAP

S. Whitfield

Signature - Commissioner of Oaths

WSP Environmental (Pty) Ltd

Company

07/08/2018

Date

07/08/2018

Date

Stamp:

COMMISSIONER OF OATHS (RSA)
SARA WHITFIELD CA (SA)
Membership No : 20019075
Building C, Knightsbridge,
33 Sloane Street, Bryanston, 2191

C

MAPS

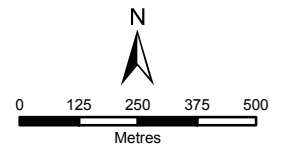


C-1 *SITE LAYOUT*

**COEGA DEVELOPMENT CORPORATION
LAYOUT MAP**

Legend

- Placenames
- Regional Road
- Proposed Project Area



DISCLAIMER

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DATA SOURCE:

PROJECTION: WGS 29 HARTEBEESTHOEK 94

PROJECT TITLE:

WILD COAST SPECIAL ECONOMIC ZONE

SCALE: 1:16,000

DRAWN BY: SABELO DUBE

DATE: 19/02/2018

REVIEWED BY: TUTAYI

FIGURE NO: 2

PROJECT NO: 41100611_1

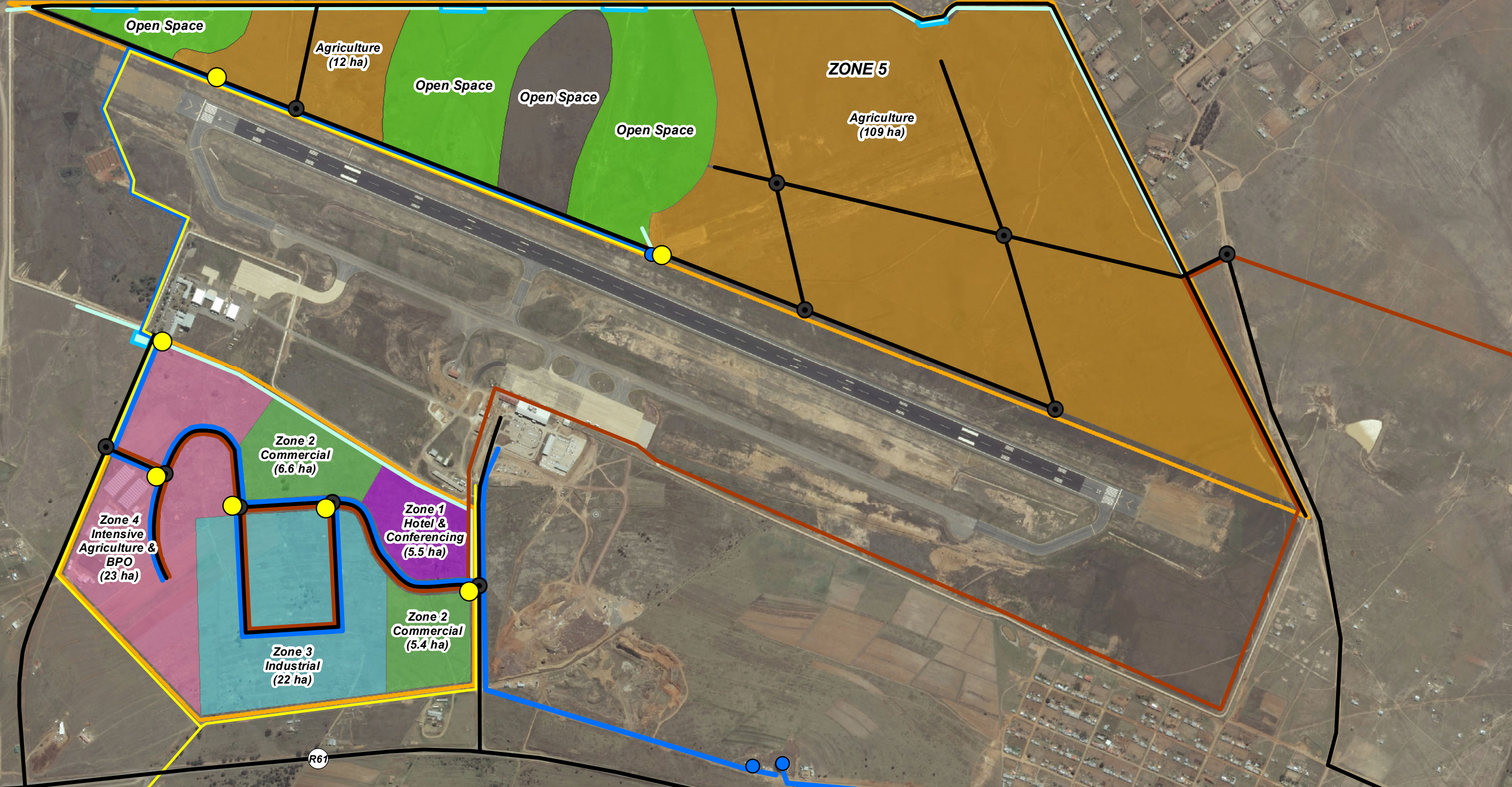
REV:

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

WILD COAST MTHATHA SEZ CONCEPT PLAN: SERVICES LAYOUT




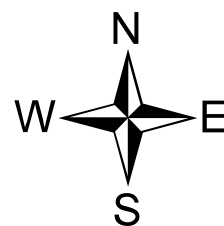
NOTES

- 1) Electrical: The substation is located at Paynes Farm and the SEZ will be supplied from a 22kva MV supply line. Provision is made for five substations in the Southern section and two substations in the Northern section
- 2) Water: A 10 Ml reservoir will supply the SEZ with internal reticulation within the SEZ from a 200 mm mainline pipeline drawing off a 300 mm bulk gravity.
- 3) Sewer: The Northern Outfall Sewer is to be extended to the boundary of the SEZ by the local municipality in the longer term. In the shorter term, septic tanks will service the area.
- 4) Stormwater: Road reserve will incorporate stormwater

- 5) General Design Principles: Services will generally follow the alignment of roads and the boundaries of the SEZ utilizing gravity to supply and deliver towards a northerly direction. Infrastructure to be sized in consultation with the local municipality
- 6) Open Space Principles: 37 ha of Open Space to be retained as functional wetlands. Services crossing the Open Space to be managed in terms of an Open Space Management Plan and stormwater attenuation structures to be managed as functional wetland areas.

0 137.5 275 550 825 1100 Meters
 1:10 000 Reference: 11 October 2018 - CDCGIS02://181011_Wild...Rev2

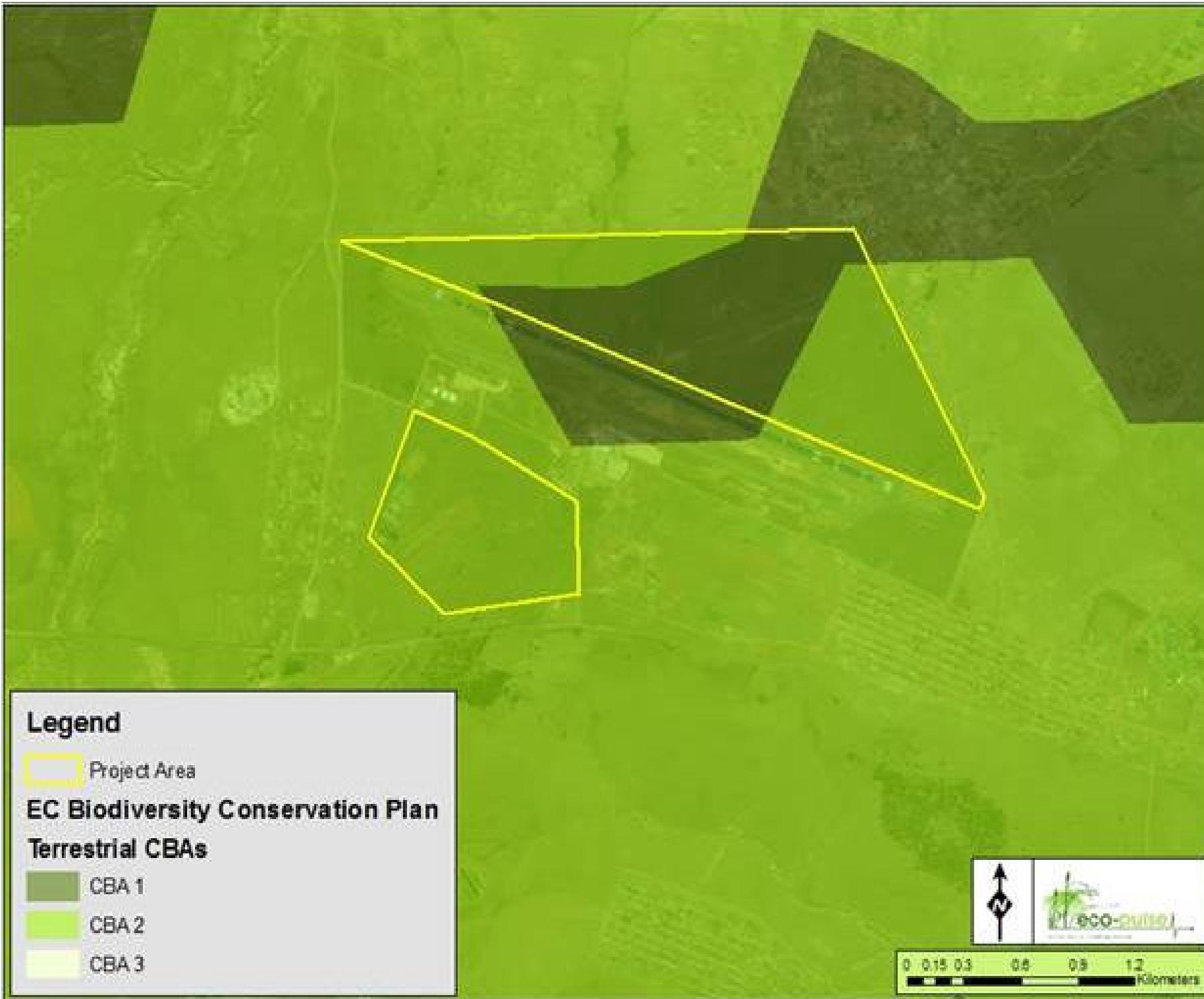
- Electrical Substations
- Reservoirs
- Roads
- Electrical
- Water
- Sewer
- Stormwater
- Stormwater Attenuation

APPENDIX

C-2 *CBA MAP*

**COEGA DEVELOPMENT CORPORATION
CRITICAL BIODIVERSITY AREA**



Legend

Project Area

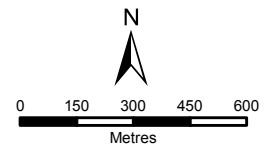
EC Biodiversity Conservation Plan

Terrestrial CBAs

CBA 1

CBA 2

CBA 3



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DATA SOURCE:

ECO PULSE ECOLOGICAL SCOPING REPORT

PROJECTION: WGS 29 HARTEBEESTHOEK 94

PROJECT TITLE:

WILD COAST SPECIAL ECONOMIC ZONE

SCALE: 1:20,000

DRAWN BY: SABELO DUBE

DATE: 19/02/2018

REVIEWED BY: TUTAYI
CHIFADZA

FIGURE NO: 3

PROJECT NO: 41100611_1 REV:




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C-3 *PALAEOSENSITIVITY MAP*


**COEGA DEVELOPMENT CORPORATION
PALAEOSENSITIVITY**

Legend

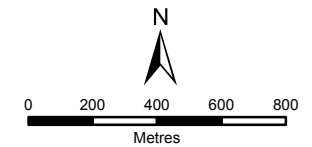
 Proposed Project Area

Sensitivity

 Low

 Moderate

 Very High



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DATA SOURCE:

SAHRA

PROJECTION:

PROJECT TITLE:

WILD COAST SPECIAL ECONOMIC ZONE

SCALE: 1:23,500

DRAWN BY: SABELO DUBE

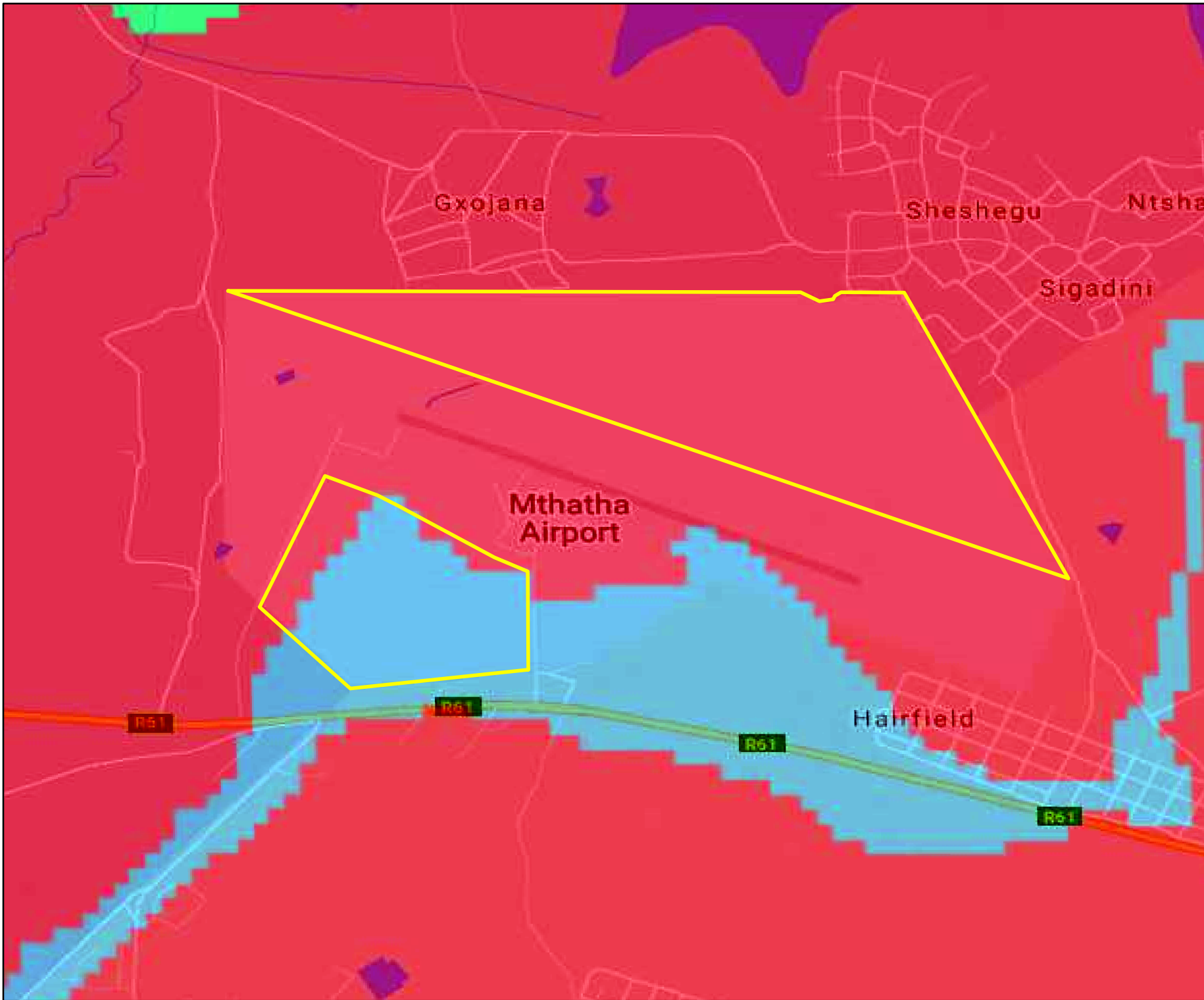
DATE: 08/02/2018

REVIEWED BY: TUTAYI

FIGURE NO: 5

PROJECT NO: 41100611_1 REV:

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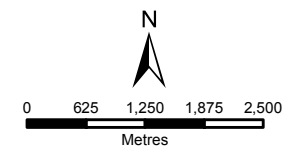


APPENDIX

C-4 *RIVERS AND WETLANDS MAP*



**COEGA DEVELOPMENT CORPORATION
RIVERS AND WETLANDS**



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DATA SOURCE:
ECO PULSE ECOLOGICAL SCOPING REPORT

PROJECTION: WGS 29 HARTEBEESTHOK 94

PROJECT TITLE:
WILD COAST SPECIAL ECONOMIC ZONE

SCALE: 1:80,000 **DRAWN BY:** SABELO DUBE

DATE: 19/02/2018 **REVIEWED BY:** TUTAYI CHIFADZA

FIGURE NO.: 6 **PROJECT NO.:** 41100611_1 **REV.:**

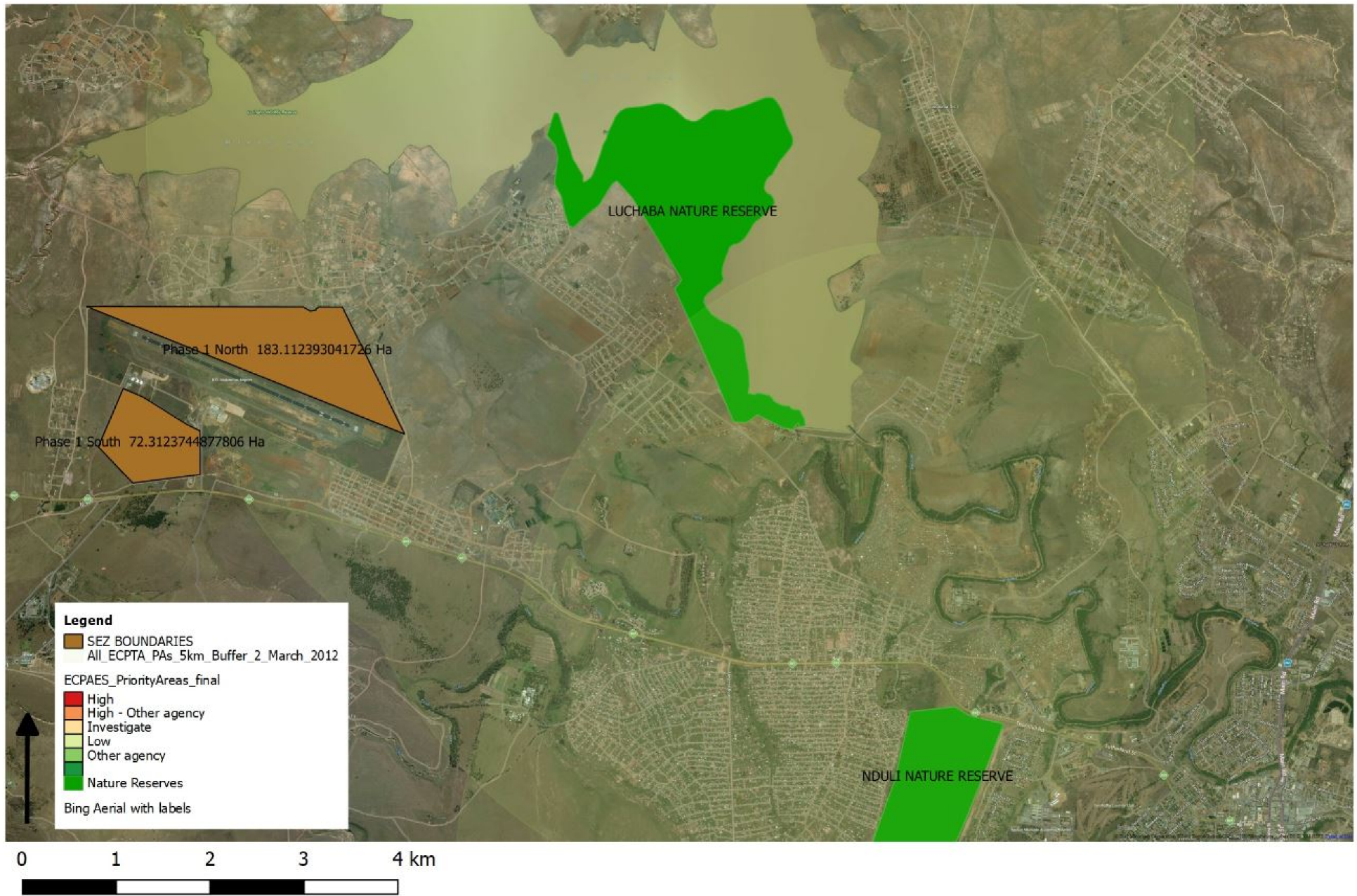
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Legend

- Project Area
- No status
- FEPA site
- Fish Support Area
- Rehab FEPA
- Upstream Management Catchment
- Wetland Non-FEPA site
- Wetland FEPA site
- NFEPA Rivers

eco-pulse

C-5 *PROTECTED AREAS* *MAP*



COEGA DEVELOPMENT CORPORATION

PROTECTED AREAS MAP

PROJECT: WILD COAST SPECIAL ECONOMIC ZONE

PROJECT NO: 41100611

DRAWN BY: SINENHLANHLA RADEBE

REVIEWED BY: TUTAYI CHIFADZA

DATE:

2018/10/19

FIGURE NO:

12



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APPENDIX

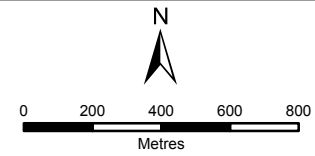
C-6 *ENVIRONMENTAL SENSITIVITIES*

COEGA DEVELOPMENT CORPORATION

ENVIRONMENTAL SENSITIVITY MAP

Legend

- Electrical Substations
- Reservoirs
- Place Names
- Traffic Circle
- Rivers
- ▭ Proposed Project Area
- ▭ Stormwater Attenuation
- ▭ Stormwater
- ▭ Water
- Electrical
- Sewer
- Roads
- Municipal, 20
- Municipal, 40
- SANRAL, 80
- SEZ, 20
- SEZ, 40
- SEZ, 6
- ▭ ECBCP: Protected Areas
- ▭ DWS Regulated Area
- ▭ 15m Buffer Width
- Wetland HGM Type**
- ▭ Seep
- ▭ Artificial
- EC Biodiversity Conservation Plan Terrestrial CBA's**
- ▭ CBA 1
- ▭ CBA 2
- Palaeosensitivity**
- ▭ Low
- ▭ Moderate
- ▭ Very High



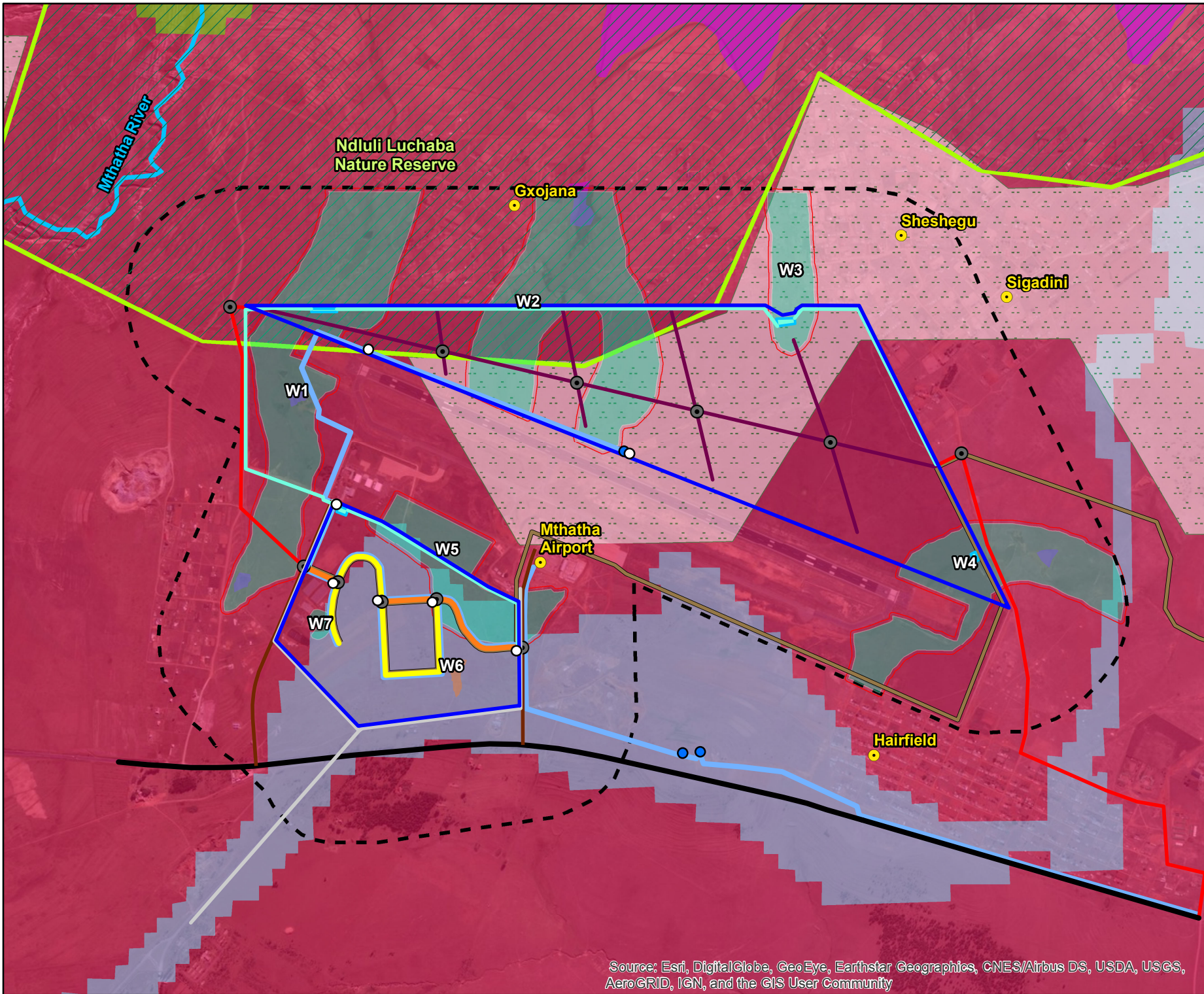
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PROJECTION: GCS_WGS_1984		
PROJECT TITLE: WILD COAST SPECIAL ECONOMIC ZONE		
SCALE: 1:22,000	DRAWN BY: SINENHLANHLA RADEBE	
DATE: 2018/07/02	REVIEWED BY: TUTAYI CHIFADZA	
FIGURE NO: 11	PROJECT NO: 41100611	REV:

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