



SASOL SOUTH AFRICA LIMITED

SASOL RECEIVER PIGGING STATION

Draft Basic Assessment Report





SASOL SOUTH AFRICA LIMITED

SASOL RECEIVER PIGGING STATION

Draft Basic Assessment Report

TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 41103670

DATE: APRIL 2023

WSP

**1st Floor, Pharos House
70 Buckingham Terrace
Westville, Durban, 3629
South Africa**

Phone: +27 31 240 8800

WSP.com



QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	Draft BAR			
Date	April 2023			
Prepared by	Patricia Nathaniel			
Signature				
Checked by	Jacqui Fincham			
Signature				
Authorised by	Jacqui Fincham			
Signature				
Project number	41103670			
Report number	01			
File reference	\\corp.pbwan.net\za\Central_Data\Projects\41100xxx\41103670 - Sasol Piggung Basic Assessment\41 ES\01-Reports\01-Draft\04- BAR			

CONTENTS

GLOSSARY

1	INTRODUCTION	1
<hr/>		
1.1	TERMS OF REFERENCE	1
1.2	PURPOSE OF THIS REPORT	1
1.3	PROJECT OVERVIEW	1
1.4	DETAILS OF KEY ROLE PLAYERS	5
1.5	BASIC ASSESSMENT REPORT STRUCTURE	7
2	BASIC ASSESSMENT PROCESS	10
<hr/>		
2.1	OBJECTIVES OF THE BASIC ASSESSMENT PROCESS AS PER THE PROCEDURAL FRAMEWORK	10
2.2	DFFE WEB-BASED ENVIRONMENTAL SCREENING TOOL	10
2.3	APPLICATION FOR ENVIRONMENTAL AUTHORISATION	14
2.4	BASELINE ENVIRONMENTAL ASSESSMENT	14
2.5	IMPACT ASSESSMENT METHODOLOGY	14
2.6	STAKEHOLDER ENGAGEMENT PROCESS	16
2.7	ASSUMPTIONS AND LIMITATIONS	21
3	PROJECT DESCRIPTION	25
<hr/>		
3.1	LOCATION OF THE PROPOSED PROJECT	25
3.2	GENERAL PIPELINE PIGGING	29
3.3	CURRENT OPERATION OF THE PRESSURE REDUCTION STATION	31
3.4	NEED AND DESIRABILITY OF THE PROJECT	33
4	PROJECT ALTERNATIVES	36
<hr/>		
4.1	SITE ALTERNATIVES	36
4.2	TECHNOLOGY ALTERNATIVES	36



4.3	LAYOUT ALTERNATIVES	37
4.4	NO-GO ALTERNATIVE	38
5	GOVERNANCE FRAMEWORK	40
5.1	NATIONAL LEGAL AND REGULATORY FRAMEWORK	40
5.2	PROVINCIAL AND MUNICIPAL LEGAL AND REGULATORY FRAMEWORK	44
5.3	ADDITIONAL PERMITS AND AUTHORISATIONS	45
6	BASELINE ENVIRONMENT AND SITE VERIFICATION	48
6.1	PHYSICAL ENVIRONMENT	48
6.2	TERRESTRIAL ENVIRONMENT	49
6.3	SOCIO-ECONOMIC ENVIRONMENT	67
7	ENVIRONMENTAL IMPACT ASSESSMENT	72
7.1	TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT	72
7.2	ARCHAEOLOGICAL, CULTURAL HERITAGE AND PALAEOLOGICAL IMPACT ASSESSMENT	77
7.3	SOCIAL IMPACT ASSESSMENT	78
7.4	CUMULATIVE IMPACTS	80
8	ENVIRONMENTAL IMPACT STATEMENT	84
8.1	SPECIALIST CONCLUSIONS	85
8.2	IMPACT SUMMARY	85
8.3	CONDITIONS AND RECOMMENDATIONS	86
9	CONCLUSION AND WAY FORWARD	90
	WAY FORWARD	90
10	REFERENCES	92

TABLES

Table 1-1 – Details of Project Proponent	5
Table 1-2 – Competent Authority	5
Table 1-3 – Details of the EAP	6
Table 1-4 – Details of Specialists	6
Table 1-5 - Legal Requirements as detailed in Appendix 1 of the EIA Regulations	7
Table 2-1 – Sensitivities identified in the DFFE Screening Report	11
Table 2-2 – Impact Assessment Criterion and Scoring System	15
Table 2-3 – Level of Public Participation as per Public Participation Guideline (DEA, 2017)	17
Table 2-4 – Details of Site Notice Placement	20
Table 3-1 – Sasol Receiver Station Property Details	25
Table 3-2 – Co-ordinate Points of the Proposed Receiver Station Site	26
Table 3-3 – Project Infrastructure and Construction Methods	32
Table 5-1 – Applicable National Legislation	40
Table 5-2 – Provincial Plans	45
Table 5-3 – Additional Permits and Authorisations required for the proposed development	46
Table 7-1 – Impact on CBA and NPAES areas outside of the expansion footprint	73
Table 7-2 – Loss of indigenous flora and SCC outside the expansion footprint	74
Table 7-3 – Impacts to fauna due to construction, operation, and decommissioning activities outside the expansion footprint	75
Table 7-4 – Proliferation of alien invasive species during construction, operation and decommissioning	76
Table 7-5 – Potential removal and destruction of archaeological and paleontological material or objects	77
Table 7-6 – Impacts of expenditure and employment during the construction, operation and decommissioning phases of the Project	78
Table 7-7 – Disturbance to surrounding businesses during the construction phase	78
Table 7-8 – Impact of noise from construction and decommissioning activities	79
Table 7-9 – Cumulative Impact on Terrestrial Biodiversity	81
Table 7-10 – Impacts of the proposed Project contributing to the Control of Alien Invasive Vegetation and Fauna within the PAOI	81

Table 7-11 – Cumulative Impact on Palaeontology	82
Table 8-1 – Impact Summary	85

FIGURES

Figure 1-1 - Locality Map of the Sasol Receiver Station	3
Figure 1-2 - Locality Map indicating the transformed area within which the Receiver Station will be located	4
Figure 2-1 - Mitigation Sequence/Hierarchy	16
Figure 3-1 – Sasol PRS and the proposed structures and pipeline associated with the Receiver Station (to be constructed on apron slabs)	28
Figure 3-2 – A typical intelligent pipeline pig (www.i2ipipelines.com)	29
Figure 3-3 – Pig launcher/receiver for a natural gas pipeline (oilgasfacility.com)	30
Figure 4-1 – Sasol Receiver Station Project Layout at the existing PRS Site	37
Figure 6-1 – Average rainfall in Durban (Source: https://en.climate-data.org/)	48
Figure 6-2 – Average temperature in Durban (Source: https://en.climate-data.org/)	49
Figure 6-3 - Map of Agriculture Sensitivity	50
Figure 6-4 - Map of Animal Species Sensitivity	51
Figure 6-5 - Map of the Site Ecological Importance Associated with the Project Area	52
Figure 6-6 – Freshwater features associated with the proposed Project area	54
Figure 6-7 – Map illustrating an overview of the land-use within the local catchment of the Mbokodweni Estuary	55
Figure 6-8 - Map of Aquatic Biodiversity Sensitivity	56
Figure 6-9 – Freshwater features downstream of the Project area	57
Figure 6-10 - Archaeological and Cultural Heritage Theme	58
Figure 6-11 – Palaeontology Theme	59
Figure 6-12 – Terrestrial Biodiversity Theme Sensitivity	60
Figure 6-13 – Drone footage of the PAOI, showing wetland features to the left, transformed areas to the right, and coastal forest in between	61
Figure 6-14 – Map presenting the Project Area of Interest superimposed on the KwaZulu-Natal Biodiversity Plan dataset	62
Figure 6-15 – Map presenting the PAOI superimposed on the NPAES dataset	64



Figure 6-16 – Map presenting the Project Area of Interest superimposed on the 2018 D'MOSS dataset	66
Figure 6-17 - eThekwini population pyramid (Source: Stats SA, 2021 - Population Estimates)	67
Figure 6-18 - eThekwini Spatial Regions (Source: Development, Planning, Environment & Management Unit; eThekwini Municipality)	69
Figure 6-19 - eThekwini Municipality in regional Context (source: eThekwini MSDF 2022-2023)	70
Figure 8-1 – Map indicating the Project site sensitivity and the 'no-go' areas	88

APPENDICES

APPENDIX A

EAP CV

APPENDIX B

EAP DECLARATION

APPENDIX C

SPECIALIST DECLARATION

APPENDIX D

STAKEHOLDER ENGAGEMENT REPORT

APPENDIX E

DFFE SCREENING TOOL REPORT

APPENDIX F

SPECIALIST STUDIES

APPENDIX F.1

FRESHWATER ECOLOGY COMPLIANCE STATEMENT

APPENDIX F.2

TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT

APPENDIX F.3

HERITAGE ASSESSMENT

APPENDIX G

EMPR



APPENDIX H
MAPS



GLOSSARY

Abbreviation	Definition
AIS	Alien and Invasive Species
BDM	Biodiversity Management (formerly known as eThekweni Municipality's EPCPD)
CARA	Conservation of Agricultural Resources Act (No. 43 of 1993)
CR	Critically Endangered
DEA	Department of Environmental Affairs
D'MOSS	Durban Metropolitan Open Space System
ECA	Environmental Conservation Act 73 of 1989
EFZ	Estuarine Functional Zone
EI	Ecological Importance
EMPr	Environmental Management Programme
EN	Endangered
EPL	Ecosystem Protection level
ESA	Ecological Support Areas
ETS	Ecosystem Threat Status
GA	General Authorisation
GDP	Gross Domestic Product
IDP	Integrated Development Plan
LC	Least Concern
NEM: AQA	The National Environmental Management: Air Quality Act 39 of 2004
NEM: BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEM: PAA	National Environmental Management Protected Areas Act (No. 57 of 2003)
NEM: WA	National Environmental Management: Waste Act (59 of 2008)
NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	The National Heritage Resources Act (No. 25 Of 1999)



Abbreviation	Definition
NPAES	National Protected Areas Expansion Strategy
NWA	The National Water Act (No. 36 Of 1998)
OEC	Obstacle Evaluation Committee
OHSA	National Occupational Health and Safety Act (No. 85 of 1993)
PES	Present Ecological Status
SAAF	South African Air Force
SACAA	South African Civil Aviation Authority
SAHRA	South African Heritage Resource Authority
SQR	Sub-quaternary Reach
VU	Vulnerable
WMA	Water Management Area
WUL	Water Use Licence

1

INTRODUCTION



1 INTRODUCTION

1.1 TERMS OF REFERENCE

WSP Group Africa (Pty) Ltd (hereafter 'WSP') have been appointed by Sasol South Africa Limited (hereafter "Sasol") to undertake a Basic Assessment (BA) process for the expansion of the South Pressure Reducing Station (PRS) to include a Receiver "Pigging" Station, located in Umbogintwini. The Pigging Station is to be established on the existing operating South Durban Pipeline (SDP) network in KwaZulu-Natal (KZN) adjacent to the existing PRS (**Figure 1-1**).

In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the Environmental Impact Assessment (EIA) Regulations promulgated in Government Notice (GNR) 982 of 2014 as amended (hereafter EIA Regulations), a Basic Assessment (BA) process is required for the proposed expansion project. In order for the proposed project to proceed, it will require an Environmental Authorisation (EA) from the Competent Authority (i.e., the KwaZulu-Natal Department of Economic Development, Tourism & Environmental Affairs (EDTEA)).

1.2 PURPOSE OF THIS REPORT

The BA process is an interdisciplinary procedure to ensure that environmental and social considerations are included in decisions regarding projects. Simply defined, the process aims to identify the possible environmental and social effects of a proposed activity and how those impacts can be mitigated.

In the context of this report, the purpose of the BA process is to inform decision-makers and the public of potential negative and positive consequences of the proposed Project. This provides the Competent Authority (CA) sufficient information to make an informed decision with regards to granting or refusing the Environmental Authorisation (EA) applied for.

1.3 PROJECT OVERVIEW

Sasol is the supplier of natural gas, sourced from the Pande and Temane gas fields in Mozambique via the existing Mozambique to Secunda pipeline, as well as methane rich gas manufactured in the Sasol Secunda Plant. The gas is transported through an underground network of pipelines through to the various provinces in South Africa namely Mpumalanga, North-West, Gauteng, Free-State and KZN.

To verify pipeline integrity and conduct internal cleaning of the pipeline, Sasol Satellite Operations performs "pigging" of the pipeline at predefined intervals. Pigging along the KZN route are proposed to be located as follows:

- Launch station located near Bayhead Road, close to the harbour [29°54'20.09"S; 31° 0'32.46"E]
- Receiving Station will be located near Kynoch Road, Umbogintwini [30°0'59.26"S 30°54'31.58"E] (**Figure 1-1**)

It must be noted that the application for EA and the associated BAR is applicable only to the Receiver Station located in Umbogintwini. Despite all construction and operational activities associated with the proposed Receiver Station being located within a transformed area, the proposed activities constitute the expansion of the footprint of the existing PRS resulting in the potential removal of 300 m² of indigenous vegetation within an area defined as Critical Biodiversity



Area (CBA): Irreplaceable (KZN Biodiversity Sector Plan (2016) therefore an application subject to a BA is required.

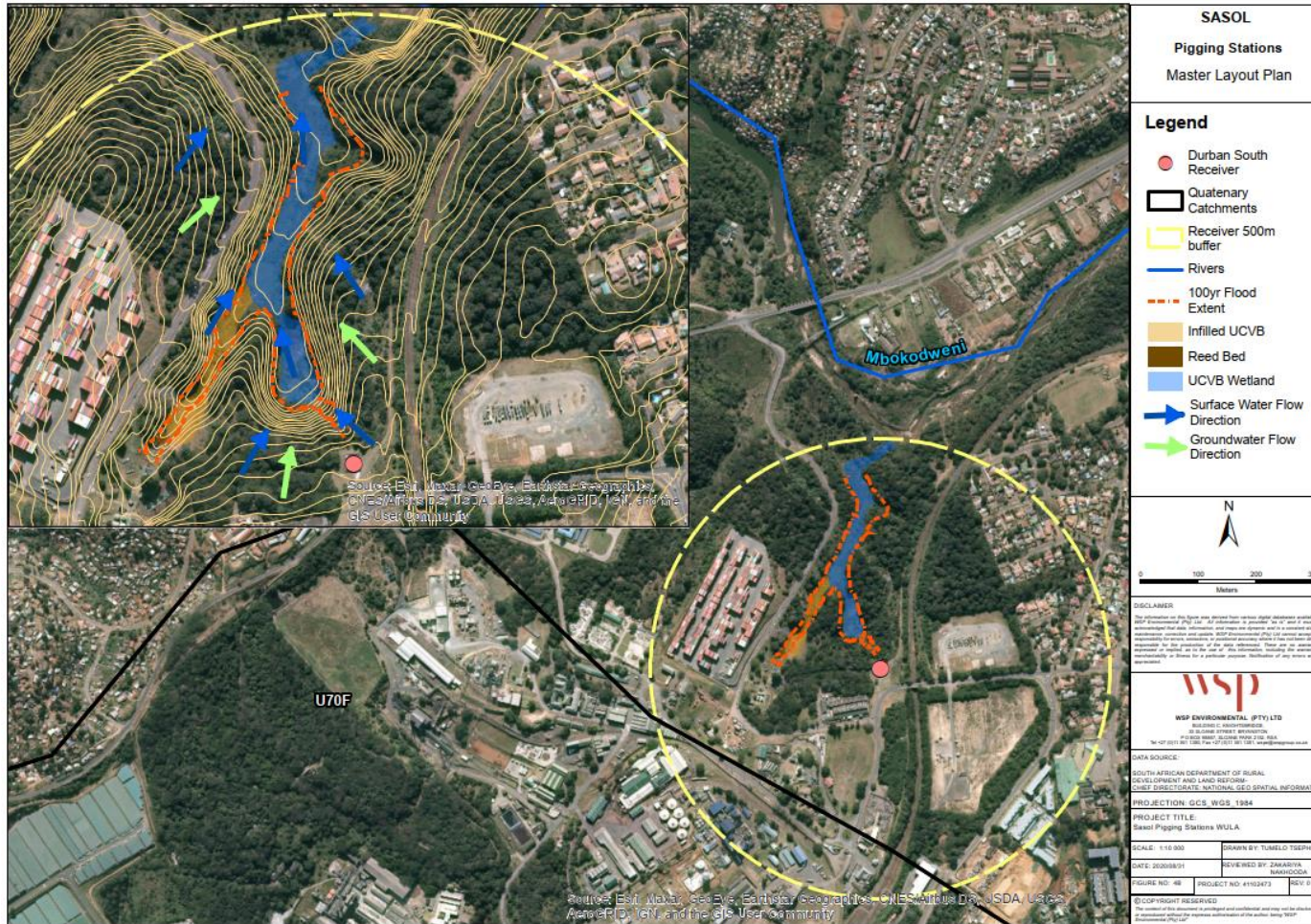


Figure 1-1 - Locality Map of the Sasol Receiver Station

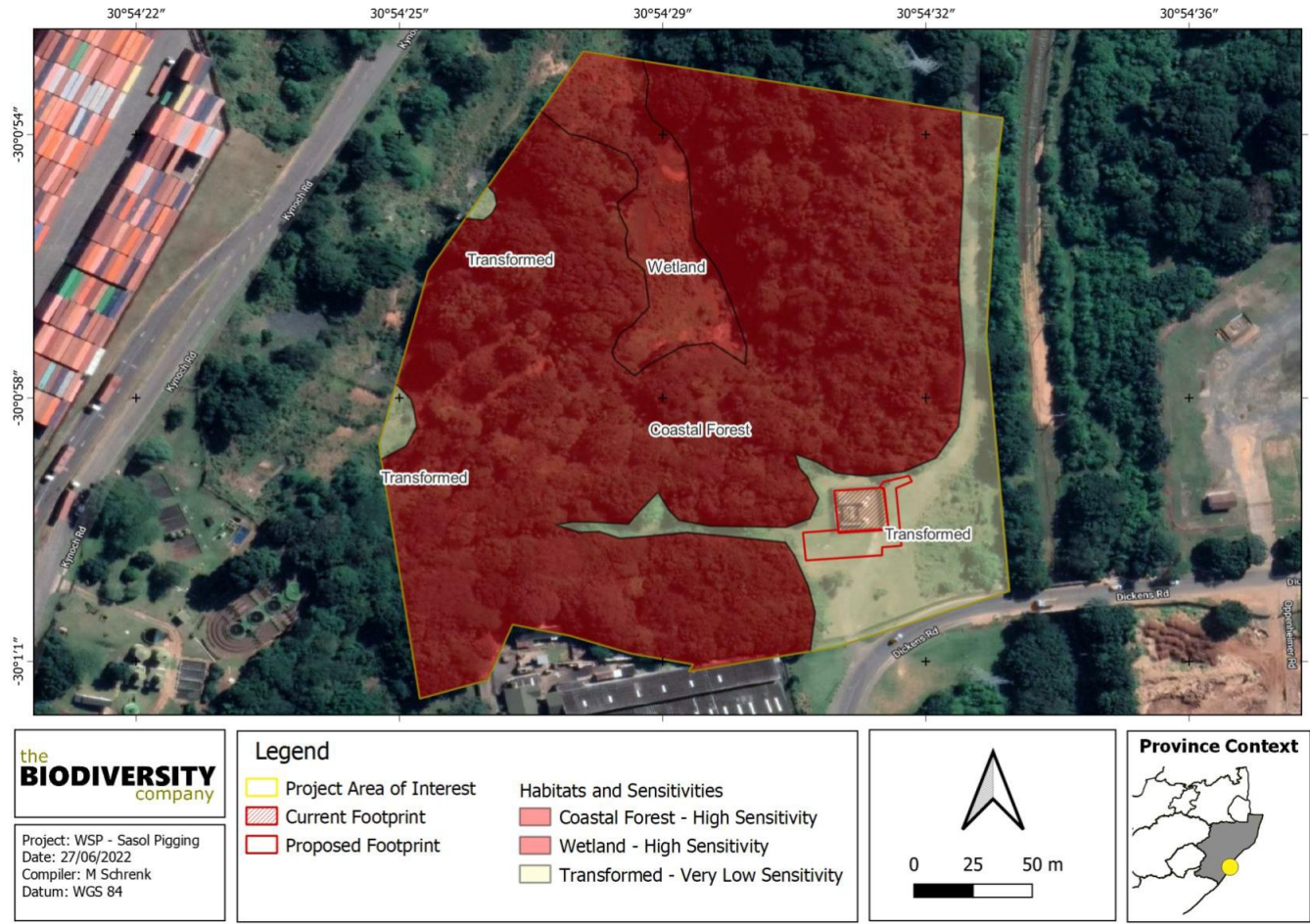


Figure 1-2 - Locality Map indicating the transformed area within which the Receiver Station will be located

1.4 DETAILS OF KEY ROLE PLAYERS

1.4.1 PROJECT PROPONENT

Sasol is the project proponent (Applicant) for the application for EA of the proposed Receiver Station. **Table 1-1** provides the relevant details of the project proponent.

Table 1-1 – Details of Project Proponent

Proponent:	Sasol South Africa Limited
Contact Person:	Vaneshrie Govender
Postal Address	PO Box 5486, Johannesburg, 2000
Telephone:	+27 10 344 5707
Email:	Vaneshrie.Govender@sasol.com

1.4.2 COMPETENT AUTHORITY

A Pre-Application meeting was held on 11 February 2022 with the KZN EDTEA to discuss the project details, legislative context and the Public Participation Plan (PPP) required to fulfil the requirements of the EIA Regulations. There were no objections regarding EDTEA being assigned as the CA for reviewing and authorising the proposed Project.

Table 1-2 provides the relevant details of the CA on the Project.

Table 1-2 – Competent Authority

Aspect	Competent Authority	Contact Details
Competent Authority: Environmental Authorisation	KwaZulu Natal Economic Development, Tourism and Environmental Affairs	Case Officer: Natasha Brijlal Control Environmental Officer, Environmental Impact Assessment Email: Natasha.Brijlal@kznedtea.gov.za Tel: 031 350 3015

1.4.3 COMMENTING AUTHORITY

The commenting authorities for the project include but not limited to the following:

- KZN EDTEA;
- Ezemvelo KZN Wildlife (EKZNWL);
- Department of Water and Sanitation (DWS);
- eThekweni Municipality; and
- KZN Amafa and Research Institute.

Refer to the Stakeholder Engagement Report (SER) in **Appendix D** for a full list of commenting authorities.

1.4.4 ENVIRONMENTAL ASSESSMENT PRACTITIONER

WSP was appointed in the role of Independent Environmental Assessment Practitioner (EAP) to undertake the BA process for the proposed project. The CV of the EAP is available in **Appendix A**. The EAP declaration of interest and undertaking is included in **Appendix B**. **Table 1-3** details the relevant contact details of the EAP.

Table 1-3 – Details of the EAP

EAP:	WSP Group Africa (Pty) Ltd
Contact Person:	Patricia Nathaniel
Physical Address:	1st Floor, Pharos House, 70 Buckingham Terrace, Westville 3629 South Africa
Postal Address:	As above
Telephone:	+27 11 361 1398
Fax:	N/A
Email:	Patricia.nathaniel@wsp.co.za
EAP Qualifications:	BSc (Hons) Geography and Environmental Management
EAPASA Registration Number:	EAPASA (2020/1120)

Statement of Independence

Neither WSP nor any of the authors of this Report have any material present or contingent interest in the outcome of this Report, nor do they have any business, financial, personal or other interest that could be reasonably regarded as being capable of affecting their independence. WSP has no beneficial interest in the outcome of the assessment.

1.4.5 SPECIALISTS

Specialist input was required in support of this application for EA. The details of the specialists are provided in **Table 1-4** below. The specialists' studies are attached in **Appendix F** and their declarations in **Appendix C**.

Table 1-4 – Details of Specialists

Assessment	Name of Specialist	Company	Sections in Report	Specialist Report attached as
Terrestrial Ecology Baseline Assessment	Leigh-Ann de Wet	The Biodiversity Company	<ul style="list-style-type: none"> ■ Section 2.4 ■ Section 2.7.2 ■ Section 6.2.6 ■ Section 6.2.2 ■ Section 7.1 	Appendix G.1

Assessment	Name of Specialist	Company	Sections in Report	Specialist Report attached as
Freshwater Ecology Compliance Statement Assessment	Christian Fry	The Biodiversity Company	<ul style="list-style-type: none"> ■ Section 2.2 ■ Section 2.7.3 ■ Section 6.2.3.1 ■ Section 6.2.3 ■ Section 8.1.2 	Appendix G.2
Heritage Impact Assessment	J Van Der Walt	Beyond heritage	<ul style="list-style-type: none"> ■ Section 2.2 ■ Section 2.7.4 ■ Section 6.2.4 ■ Section 7.2 ■ Section 8.1.3 	Appendix G.3

1.5 BASIC ASSESSMENT REPORT STRUCTURE

Appendix 1 of the EIA Regulations provides for the legislated requirements that must be contained within a Basic Assessment Report (BAR) for CA to consider and come to a decision on the application. **Table 1-5** below details where the required information is located within the draft BAR (this report).

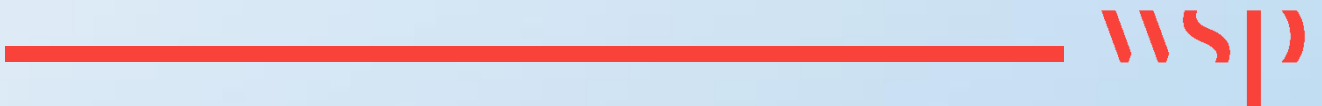
Table 1-5 - Legal Requirements as detailed in Appendix 1 of the EIA Regulations

Appendix 1 of GNR 326	Description	Relevant Report Section
3(1) (a)	Details of the EAP who prepared the report and the expertise of the EAP, including a curriculum vitae	Section 1.4.4 and Appendix A
3(1) (b)	The location of the activity	Section 3.1
3(1) (c)	A plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale	Section 3.1 and Section 3.3.1.1
3(1) (d)	A description of the scope of the proposed activity	Section 3.3.1.1
3(1) (e)	A description of the policy and legislative context within which the development is proposed	Section 5
3(1) (f)	A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location	Section 3.4
3(1) (g)	A motivation for the preferred site, activity and technology alternative	Section 4
3(1) (h)	A full description of the process followed to reach the proposed alternative within the site	Section 4

Appendix 1 of GNR 326	Description	Relevant Report Section
3(1) (i)	A full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity	Section 4 and Section 2.5
3(1) (j)	An assessment of each identified potentially significant impact and risk	Section 7
3(1) (k)	Where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report	Section 6 and Section 7
3(1) (l)	An environmental impact statement	Section 8
3(1) (m)	Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the Environmental Management Programme (EMPr).	Section 8.3
3(1) (n)	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation.	Section 8.3
3(1) (o)	A description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed	Section 2.7
3(1) (p)	A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation	Section 9
3(1) (q)	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be conducted, and the post construction monitoring requirements finalised	Section 9
3(1) (r)	An undertaking under oath or affirmation by the EAP	Appendix B
3(1) (s)	Where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts	N/A
3(1) (t)	Any specific information that may be required by the competent authority	N/A
3(1) (u)	Any other matters required in terms of section 24(4)(a) and (b) of the Act	N/A

2

BASIC ASSESSMENT PROCESS



2 BASIC ASSESSMENT PROCESS

2.1 OBJECTIVES OF THE BASIC ASSESSMENT PROCESS AS PER THE PROCEDURAL FRAMEWORK

As defined in Appendix 1 of the EIA Regulations, the objective of the impact assessment process is to, through a consultative process:

- Determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- Identify the alternatives considered, including the activity, location, and technology alternatives;
- Describe the need and desirability of the proposed alternatives;
- Through the undertaking of an impact assessment process, inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and impact of the proposed activity and technology alternatives on these aspects to determine—
 - The nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - The degree to which these impacts—
 - Can be reversed;
 - May cause irreplaceable loss of resources; and
 - Can be avoided, managed, or mitigated.
- Through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
 - Identify and motivate a preferred site, activity and technology alternative;
 - Identify suitable measures to avoid, manage or mitigate identified impacts; and
 - Identify residual risks that need to be managed and monitored.

2.2 DFFE WEB-BASED ENVIRONMENTAL SCREENING TOOL

DFFE has developed the National Web-based Environmental Screening Tool (hereafter the DFFE Screening Tool) to flag areas of potential environmental sensitivity related to a site as well as a development footprint and produces the screening report required in terms of regulation 16 (1)(v) of the EIA Regulations (2014, as amended). *The Notice of the requirement to submit a report generated by the national web-based environmental screening tool in terms of section 24(5)(h) of the NEMA, 1998 (Act No 107 of 1998) and regulation 16(1)(b)(v) of the EIA regulations, 2014, as amended (GN 960 of July 2019)* states that the submission of a report generated from the national web-based environmental screening tool, as contemplated in Regulation 16(1)(b)(v) of the EIA Regulations, 2014, published under Government Notice No. R982 in Government Gazette No. 38282 of 4 December 2014, as amended, is compulsory when submitting an application for environmental authorisation in terms of regulation 19 and regulation 21 of the EIA Regulations, 2014 (as amended) as of 04 October 2019.

The Screening Report generated by the National Web-based Environmental Screening Tool contains a summary of any development incentives, restrictions, exclusions, or prohibitions that

apply to the proposed development footprint as well as the most environmentally sensitive features on the footprint based on the footprint sensitivity screening results for the application classification that was selected.

A Screening Tool Report for the proposed Receiver Station was generated on 5 October 2022 and is attached as **Appendix E**. The Screening Report for the project identified various sensitivities for the site. The report also generated a list of specialist assessments that should form part of the BA Process based on the development type and the environmental sensitivity of the site. Assessment Protocols in the report provide minimum information to be included in a specialist report to facilitate decision-making.

Table 2-1 below provides a summary of the sensitivities identified for the development footprint.

Table 2-1 – Sensitivities identified in the DFFE Screening Report

Theme	Very High Sensitivity	High Sensitivity	Medium Sensitivity	Low Sensitivity
Agriculture Theme	X			
Animal Species Theme		X		
Aquatic Biodiversity Theme				X
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme		X		
Defence Theme	X			
Palaeontology Theme		X		
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			

2.2.1 MOTIVATION FOR SPECIALIST STUDIES

The following section is a description of the specialist assessments which have been commissioned for the Project based on the environmental sensitivities identified by the Screening Tool Report and site verification as defined in the Protocol for Specialist assessment and minimum report content requirements for environmental impacts (GNR 43110 of 20 March 2020):

- Agricultural Theme Sensitivity– Refuted
 - According to the DFFE Screening Tool, the Agricultural Theme sensitivity is rated as Very High as the land capability ratings range from medium to very high (7 to 13). However, the Protocol allows for a Compliance Statement to be submitted if the information gathered from a site verification assessment renders the site Medium or Low Sensitivity.
 - The results of the site verification by the EAP found the site to be currently transformed and historically disturbed with the current PRS being hardened and therefore cannot be considered as arable land, therefore the site is considered Low sensitivity and as such an Agricultural

Potential Assessment was deemed not necessary and found to be acceptable to the EDTEA (as per the pre-application meeting minutes in Appendix E).

- Animal Species Theme Sensitivity – Confirmed
 - According to the DFFE Screening Tool, the site is considered High sensitivity for the Animal Species Theme for which an assessment is required. During the site verification assessment, the EAP identified the presence of the adjacent forest and wetland areas which serve as a habitat for potential Species of Conservation Concern (SCC) therefore the EAP agrees with requirement for an assessment as per the Protocol and an assessment was undertaken.
- Aquatic Biodiversity Theme Sensitivity - Confirmed
 - According to the DFFE Screening Tool, the site is considered Low sensitivity for the Aquatic Biodiversity Theme, as such the Protocol requires a Compliance Statement to be undertaken for the proposed Project. The site verification confirmed the presence of a drainage line approximately 40 m from the proposed Receiver Station site and the Mbokodweni River in the greater Project Area of Influence (PAOI) which could potentially be impacted upon if strict controls are not implemented during the construction phase. The site verification assessment confirmed the Low sensitivity of the site however the downstream freshwater habitat is considered as Very High Sensitivity; therefore, an Aquatic Compliance Statement was undertaken.
- Archaeological and Cultural Heritage Theme Sensitivity– Confirmed
 - The DFFE Screening Tool rendered the proposed site to be Low sensitivity in relation to the Archaeological and Cultural Theme, as such the Protocol requires a site verification be undertaken and the level of assessment to be determined based on the findings. The site verification assessment confirmed that the activities will be confined to a small area in close proximity to the existing disturbed site therefore there is a low probability of impacting upon resources of cultural and heritage significance. However, a Heritage Impact Assessment was undertaken to verify the findings of the EAP.
- Civil Aviation Theme Sensitivity - Refuted
 - The DFFE Screening Tool rendered the proposed site for the Receiver Station as High sensitivity for the Civil Aviation Theme due to the presence of a civil aviation radar within 15km of the site and other civil aviation aerodrome within 8km of the site, however the Screening Tool did not prescribe a protocol for any specialist assessment to be undertaken. Therefore, a formal Civil Aviation Assessment will not be undertaken as part of this BA process. Nevertheless, the Air Traffic Navigation Services have been included on the list of I&APs.
- Defence Theme Sensitivity – Refuted
 - The DFFE Screening Tool rendered the proposed site as Very High Sensitivity in relation to the Defence Theme, this is due to the presence of a military and defence site within proximity of the site. However, the Screening Tool did not prescribe a protocol for any specialist assessment to be undertaken. Further to this, the proposed Project is not likely to have any impact on any surrounding sites. The Department of Defence has been included on the project stakeholder database and will be allowed to provide comment on the proposed Project details and locality.

- Palaeontology Theme Sensitivity – Refuted
 - The DFFE Screening Tool rendered the site as High Sensitivity in relation to the Palaeontology Theme due to the presence of features with high palaeontological sensitivity, however the protocol for an assessment as contained in the Screening Tool Report indicated that a site verification must be undertaken and the level of assessment to be determined thereafter. A Palaeontological Survey was undertaken as part of the Heritage Assessment, the findings of which confirmed that the site is transformed and the impact on any heritage or palaeontological resources are low.
 - The High sensitivity rating is due to the palaeontology of the larger Project area and not the sensitivity of the Project footprint.
- Plant Species Theme – Confirmed
 - The DFFE Screening Tool rendered the site to be Medium in sensitivity in relation to the Plant Species Theme with majority of the site categorised as Low sensitivity. This is due to the potential occurrence of SCC. The Protocol prescribes that an assessment be undertaken.
 - The plant species assessment was undertaken as part of the Terrestrial Ecology Compliance Statement.
- Terrestrial Biodiversity Theme - Confirmed
 - The DFFE Screening Tool rendered the site to be Very High in sensitivity in relation to the Terrestrial Biodiversity Theme, this is due to the proposed site being located entirely within a Critical Biodiversity Area (CBA) and an Endangered Ecosystem i.e. the KZN Coastal Belt Grassland. The prescribed protocol as per the Screening Report deemed an assessment necessary.
 - However, due to the site being built up and initially disturbed for purposes of the existing PRS and all construction and related operational activities will be undertaken within the transformed Very Low sensitivity areas of the site and will not extend into the adjacent forest or wetland areas, only a Compliance Statement was undertaken for the Terrestrial Biodiversity Theme.
 - The Compliance Statement disputed the Very High Sensitivity of the site and rated it as Very Low sensitivity due to the significant levels of environmental disturbance that have taken place within the immediate vicinity and adjacent to the footprint area.
- Geotechnical Assessment:
 - The site is developed for purposes of the existing PRS. It is unlikely that the Receiver Station will have any negative impact on the subsurface conditions of the proposed site. The DFFE Screening Tool identified a Geotechnical Assessment as a potential specialist study however a protocol for the assessment was not prescribed and a site verification was deemed necessary to determine the level of assessment that will be required, if any. Following the site verification, it was confirmed that the proposed Receiver Station will be located within the existing footprint of the PRS therefore, sufficient information exists on the underlying geology at the site and surrounds that a Geotechnical Assessment will not be conducted as this stage of the proposed Project.
- Specialist assessments were conducted in accordance with the Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes, which were promulgated in Government Notice No. 320 of 20 March 2020 and in Government Notice No.

1150 of 30 October 2020 (i.e. “the Protocols”). Terrestrial Biodiversity Assessment – requirement for a Biodiversity Assessment to be completed;

2.3 APPLICATION FOR ENVIRONMENTAL AUTHORISATION

The application phase consisted of a pre-application consultation with KZN EDTEA and subsequently completing the appropriate application form as well as the submission and registration of the application for EA with the EDTEA. The pre-application meeting was held with EDTEA on 11 February 2022 (meeting minutes are included in the Stakeholder Engagement Report (SER) in **Appendix D**). The application form was submitted to the EDTEA on 1 March 2023 with the Final BAR due to the EDTEA on 6 June 2023.

2.4 BASELINE ENVIRONMENTAL ASSESSMENT

The description of the environmental attributes of the project area was compiled through a combination of desktop reviews and site investigations. Desktop reviews made use of available information including existing reports, aerial imagery, and mapping.

2.5 IMPACT ASSESSMENT METHODOLOGY

2.5.1 ASSESSMENT OF IMPACTS AND MITIGATION

The assessment of impacts and mitigation evaluates the likely extent and significance of the potential impacts on identified receptors and resources against defined assessment criteria, to develop and describe measures that will be taken to avoid, minimise or compensate for any adverse environmental impacts, to enhance positive impacts, and to report the significance of residual impacts that occur following mitigation.

The key objectives of the risk assessment methodology are to identify any additional potential environmental issues and associated impacts likely to arise from the proposed project, and to propose a significance ranking. Issues / aspects will be reviewed and ranked against a series of significance criteria to identify and record interactions between activities and aspects, and resources and receptors to provide a detailed discussion of impacts. The assessment considers direct¹, indirect², secondary³ as well as cumulative⁴ impacts.

A standard risk assessment methodology is used for the ranking of the identified environmental impacts pre-and post-mitigation (i.e., residual impact). The significance of environmental aspects is determined and ranked by considering the criteria⁵ presented in

Table 2-2.

¹ Impacts that arise directly from activities that form an integral part of the Project.

² Impacts that arise indirectly from activities not explicitly forming part of the Project.

³ Secondary or induced impacts caused by a change in the Project environment.

⁴ Impacts are those impacts arising from the combination of multiple impacts from existing projects, the Project and/or future projects.

⁵ The definitions given are for guidance only, and not all the definitions will apply to all the environmental receptors and resources being assessed. Impact significance was assessed with and without mitigation measures in place.

Table 2-2 – Impact Assessment Criterion and Scoring System

Criteria	Score 1	Score 2	Score 3	Score 4	Score 5
Impact Magnitude (M) The degree of alteration of the affected environmental receptor	Very low: No impact on processes	Low: Slight impact on processes	Medium: Processes continue but in a modified way	High: Processes temporarily cease	Very High: Permanent cessation of processes
Impact Extent (E) The geographical extent of the impact on a given environmental receptor	Site: Site only	Local: Inside activity area	Regional: Outside activity area	National: National scope or level	International: Across borders or boundaries
Impact Reversibility (R) The ability of the environmental receptor to rehabilitate or restore after the activity has caused environmental change	Reversible: Recovery without rehabilitation		Recoverable: Recovery with rehabilitation		Irreversible: Not possible despite action
Impact Duration (D) The length of permanence of the impact on the environmental receptor	Immediate: On impact	Short term: 0-5 years	Medium term: 5-15 years	Long term: Project life	Permanent: Indefinite
Probability of Occurrence (P) The likelihood of an impact occurring in the absence of pertinent environmental management measures or mitigation	Improbable	Low Probability	Probable	Highly Probability	Definite
Significance (S) is determined by combining the above criteria in the following formula:	$[S = (E + D + R + M) \times P]$ $Significance = (Extent + Duration + Reversibility + Magnitude) \times Probability$				
Impact Significance Rating					
Total Score	4 to 15	16 to 30	31 to 60	61 to 80	81 to 100
Environmental Significance Rating (Negative (-))	Very low	Low	Moderate	High	Very High
Environmental Significance Rating (Positive (+))	Very low	Low	Moderate	High	Very High

2.5.2 IMPACT MITIGATION

The impact significance without mitigation measures will be assessed with the design controls in place. Impacts without mitigation measures in place are not representative of the proposed

development’s actual extent of impact and are included to facilitate understanding of how and why mitigation measures were identified. The residual impact is what remains following the application of mitigation and management measures and is thus the final level of impact associated with the development. Residual impacts also serve as the focus of management and monitoring activities during Project implementation to verify that actual impacts are the same as those predicted in this report.

The mitigation measures chosen are based on the mitigation sequence/hierarchy which allows for consideration of five (5) different levels of mitigation, which include avoid/prevent, minimise, rehabilitate/restore, offset and no-go, in that order. During the consideration of impacts, the first option should be to avoid or prevent the impacts from occurring initially if possible, however, this is not always feasible. If this is not attainable, the impacts can be allowed, however they must be minimised as far as possible by considering reducing the footprint of the development so that minimal impact is experienced. If impacts are unavoidable, the next goal is to rehabilitate or restore the areas impacted back to their original form after project completion. Offsets are then considered if all the other measures described above fail to remedy high/significant residual negative impacts. If no offsets can be achieved on a potential impact, which results in full destruction of any ecosystem for example, the no-go option is considered so that another activity or location is considered in place of the original plan.

The mitigation sequence/hierarchy is shown in **Figure 2-1** below.

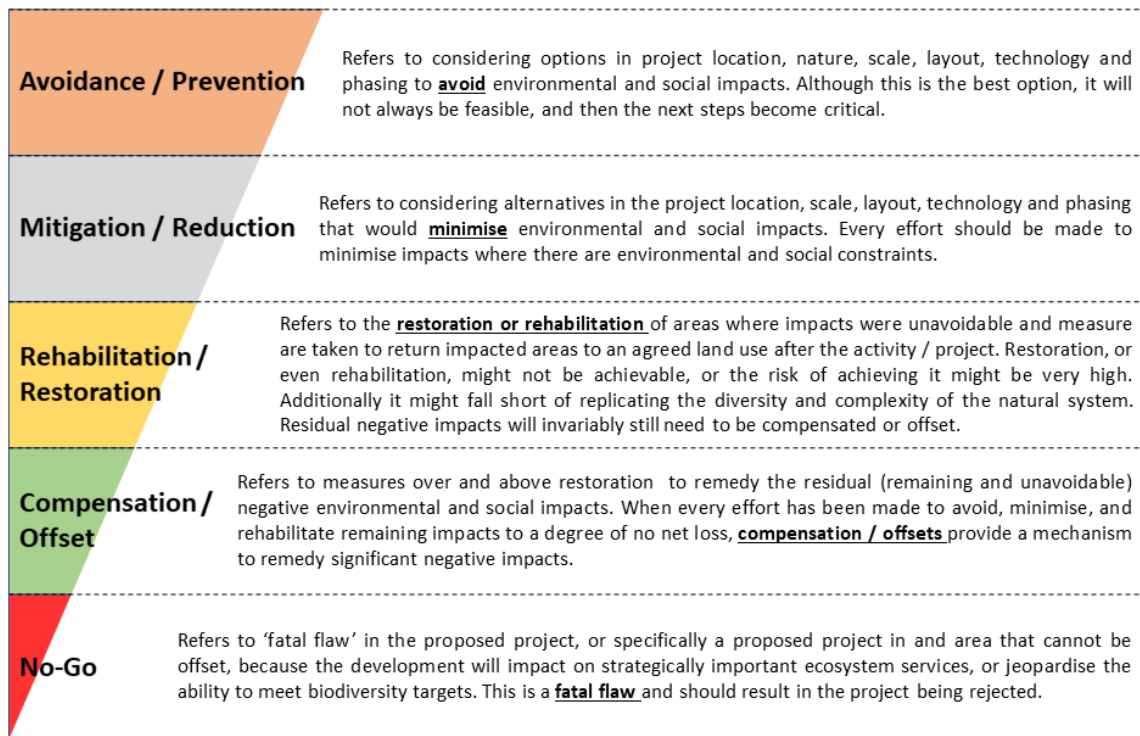


Figure 2-1 - Mitigation Sequence/Hierarchy

2.6 STAKEHOLDER ENGAGEMENT PROCESS

Stakeholder engagement (PPP) is a requirement of the BA process. It consists of a series of inclusive and culturally appropriate interactions aimed at providing stakeholders with opportunities to

express their views, so that these can be considered and incorporated into the BA decision-making process. Effective engagement requires the prior disclosure of relevant and adequate project information to enable stakeholders to understand the risks, impacts, and opportunities of the proposed project. The objectives of the stakeholder engagement process can be summarised as follows:

- Identify relevant individuals, organisations and communities who may be interested in or affected by the proposed Project;
- Clearly outline the scope of the proposed Project, including the scale and nature of the existing and proposed activities;
- Identify viable proposed Project alternatives that will assist the relevant authorities in making an informed decision;
- Identify shortcomings and gaps in existing information;
- Identify key concerns, raised by Stakeholders that should be addressed in the specialist studies;
- Highlight the potential for environmental impacts, whether positive or negative; and
- To inform and provide the public with information and an understanding of the proposed project, issues, and solutions.

The approach to stakeholder engagement is based on the following principles:

- Undertake meaningful and timely participation with stakeholders;
- Focus on important issues during the process;
- Undertake due consideration of alternatives;
- Take accountability for information used;
- Encourage co-regulation, shared responsibility and a sense of ownership over the proposed Project lifecycle;
- Apply “due process” particularly with regard to public participation as provided for in the EIA Regulations; and
- Consider the needs, interests and values of stakeholders.

The Public Participation guideline in terms of the NEMA EIA Regulations, drafted by the Department of Environmental Affairs (DEA) (now DFFE) in 2017, tabulates the level of Public Participation required for various levels of anticipated project impacts. This table has been used to identify additional Public Participation methods which are required for the Project. Highlighted cells (red) indicate the applicable response to the anticipated impacts. Results of the process are shown in **Table 2-4**.

Table 2-3 – Level of Public Participation as per Public Participation Guideline (DEA, 2017)

Scale of Anticipated Impacts	Recommended Response	
	If “Yes”	If “No”
Are the impacts of the project likely to extend beyond the boundaries of the local municipality?	Formal Consultation with other affected municipalities should be carried out during the PPP.	No need to have a formal consultation with other municipalities during PPP. Minimum requirements for public participation in accordance with EIA must be met.

Scale of Anticipated Impacts	Recommended Response	
	If “Yes”	If “No”
Are the impacts of the project likely to extend beyond the boundaries of the province?	Formal Consultation with other affected provinces should be carried out during the PPP.	No need to have a formal consultation with other provinces during PPP. Minimum requirements for public participation in accordance with EIA must be met.
Is the project a greenfields development (a new development in a previously undisturbed area)?	Extensive consultation with Registered Interested and Affected Parties (RI&APs) might be required before a decision is taken on the project to in order to gather more information, and to ensure that there is minimal impact on the environment.	Minimum requirements for public participation in accordance with EIA Regulations must be met.
Does the area already suffer from socio-economic problems (e.g. job losses) or environmental problems (e.g. pollution), and is the project likely to exacerbate these?	Extensive consultation with RI&APs within the area should be undertaken, to gather more information on both the socio-economic and environmental problems.	Minimum requirements for public participation in accordance with EIA Regulations must be met.
Is the project expected to have a wide variety of impacts (e.g. socio-economic and ecological)?	Thorough consultation needs to be conducted with RI&APs, in order to address variety of impacts.	Minimum requirements for public participation in accordance with EIA Regulations must be met.
Public and environmental sensitivity of the project:		
Are there widespread public concerns about the potential negative impacts of the project?	Broader consultation with all RI&APs will need to be undertaken.	Minimum requirements for public participation in accordance with EIA Regulations must be met.
Is there a high degree of conflict among RI&APs?	There might need to be more consultation to ensure that there is consensus reached among RI&APs.	Minimum requirements for public participation in accordance with EIA Regulations must be met.
Will the project impact on private land other than that of the applicant?	Consultation with the private landowner must be done, and all their concerns need to be addressed.	Minimum requirements for public participation in accordance with EIA Regulations must be met.
Does the project have the potential to create unrealistic expectations (e.g. that a new factory would create a large number of jobs)?	Thorough consultation that addresses the perceptions of unrealistic expectations needs to be carried out.	Minimum requirements for public participation in accordance with EIA Regulations must be met.
Potentially affected parties:		

Scale of Anticipated Impacts	Recommended Response	
	If “Yes”	If “No”
Has very little previous public participation taken place in the area?	More thorough public participation should take place within the area, to ensure that all potential and RI&APs participate.	Minimum requirements for public participation in accordance with EIA Regulations must be met.
Did previous public participation processes in the area result in conflict?	Additional consultation might be needed to ensure that issues of conflict are addressed effectively.	Minimum requirements for public participation in accordance with EIA Regulations must be met.
Are there existing organisational structures (e.g. local forums) that can represent I&APs?	Organizational structures might minimise conflict whilst maximising the participation.	Minimum requirements for public participation in accordance with EIA Regulations must be met.
Is the area characterised by high social diversity (i.t.o. socio-economic status, language or culture)?	Proper consultations that address language and cultural diversity should be promoted.	Minimum requirements for public participation in accordance with EIA Regulations must be met.
Were people in the area victims of unfair expropriations or relocation in the past?	PPP should be extensive and address any unfair practices that occurred in the past.	Minimum requirements for public participation in accordance with EIA Regulations must be met.
Is there a high level of unemployment in the area?	The PPP should ensure that there are no unrealistic expectations created due to the project. The consultation should ensure that any unrealistic expectations are adequately addressed before the project starts.	Minimum requirements for public participation in accordance with EIA Regulations must be met.
Do the RI&APs have special needs (e.g. a lack of skills to read or write, disability, etc)?	Consultation should include mechanisms that will ensure full participation by people with special needs.	Minimum requirements for public participation in accordance with EIA Regulations must be met. Minimum requirements for PP in accordance with the Act must be met as well as best practices relating to PP.

An SER has been included in **Appendix D** and will be updated in the final BAR, detailing the project’s compliance with Chapter 6 of the NEMA EIA Regulations 2014, as amended.

2.6.1 STAKEHOLDER IDENTIFICATION

Stakeholders were identified and will continue to be identified through several mechanisms. These include:

- Utilising existing databases from other projects in the area;
- Networking with local business owners, non-governmental agencies, community based organisations, and local council representatives;
- Field work in and around the project area;
- Advertising in the press;

- Placement of community notices; and
- Completed comment sheets;

All stakeholders identified to date have been registered on the Project stakeholder database. The EAP endeavoured to ensure that individuals/organisations from referrals and networking were notified of the proposed Project. Stakeholders were identified at the horizontal (geographical) and vertical extent (organisations level).

A list of stakeholders captured in the project database is included in the SER in **Appendix D**.

2.6.2 STAKEHOLDER NOTIFICATION

2.6.2.1 Newspaper Advertisements

In accordance with the requirements of the EIA Regulations, the proposed Project was advertised in a regional newspaper i.e. The Mercury in English and isiZulu on 13 May 2022 and in the South Coast Sun local newspaper on 6 May 2022. The purpose of the advertisement was to notify the public about the proposed Project and to invite them to register as stakeholders (**Appendix D**).

2.6.2.2 Site Notices

Regulation 41 (2) (a) of the EIA Regulations requires that site notices providing information on the project and EIA Process are fixed at places that are conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of the site where the application will be undertaken or any alternative site. The table below provides the details of the site notices placement. A copy of the site notice and proof of placement is included in **Appendix D**.

Table 2-4 – Details of Site Notice Placement

Name	Area	Type of Establishment	Coordinates
Sasol Piggling Station	Umbongotwini Industrial Complex	Piggling Station	30° 1'0.87"S 30°54'31.50"E
Athlone Park Memorial Library	Athlone Park	Library	30° 1'3.88"S 30°55'9.96"E
Athlone Park Clinic	Athlone Park	Clinic	30° 1'4.39"S 30°55'10.68"E
Mfundu Tuckshop- next to a school	Ezimbokodweni	Tuckshop next to schools	30°00'54.24"S 30°53'38.43"E
Sunil's Supermarket	Lotus Park	Chain of local stores next to residential flats	29°59'47.93"S 30°54'38.65"E
Isipingo Civic Library	Isipingo	Library, next to a clinic	29°59'45.12"S 30°55'14.47"E

2.6.3 PUBLIC REVIEW OF THE DRAFT BASIC ASSESSMENT REPORT

The Draft BA report will be made available to stakeholder as follows:

- WSP on request; and
- Online on the WSP website: <https://www.wsp.com/en-za/services/public-documents>.

Hard copies and/or electronic copies of the report will be provided to the relevant regulatory and local authorities for comment, including but not limited to:

- KZN EDTEA;
- EKZNWL;
- DWS;
- eThekweni Municipality; and
- KZN Amafa and Research Institute.

2.6.4 COMMENT AND RESPONSE REPORT

All concerns, comments, viewpoints and questions (collectively referred to as 'issues') will be documented and responded to adequately in a Comment and Response Report (CRR) to be included in the Final BAR.

The comments received and associated responses will be included in the Final BAR. Copies of the original comments are included in **Appendix D**.

2.6.5 SUBMISSION AND DECISION MAKING

All issues raised during the public review of the Draft BA report will be incorporated and addressed in the Final BA report submitted to EDTEA. The EDTEA is allocated 107 days to review the Final BA report as per the EIA Regulations. Stakeholders will be notified of the Final BA report availability for further comment. Comments are to be submitted by stakeholders directly to EDTEA.

2.7 ASSUMPTIONS AND LIMITATIONS

2.7.1 GENERAL ASSUMPTIONS AND LIMITATIONS

- The EAP hereby confirms that they have undertaken to obtain project information from the client that is deemed to be accurate and representative of the Project.
- A site visit has been undertaken by the EAP to better understand the project and ensure that the information provided by the client is correct, based on site conditions observed.
- WSP's assessment of the significance of impacts of the proposed Project on the affected environment has assumed that the activities will be confined to those described in **Section 3**. If any substantial changes to the project description are made, impacts may need to be reassessed.
- The EAP hereby confirms their independence and understands the responsibility they hold in ensuring any comments received for the project will be accurately replicated and responded to within the EIA documentation.
- The comments received in response to the PPP, will be representative of comments from the broader community.
- Where detailed design information is not available, the precautionary principle (i.e., a conservative approach that overstates negative impacts and understates benefits) has been adopted.
- Based on the pre-application meeting and subsequent minutes, the CA would not require additional specialist input, as per the proposals made in this report, in order to make a decision regarding the application.

- All information is assumed to be accurate and relevant at the time of writing this report.

Notwithstanding these assumptions, it is the view of WSP that this BA report provides a good description of the issues associated with the project and the resultant impacts.

2.7.2 TERRESTRIAL ECOLOGY COMPLIANCE STATEMENT

- It is assumed that all information received from the client is accurate.
- All datasets accessed and utilised for the Terrestrial Ecology Assessment are considered to be representative of the most recent and suitable data for the intended purposes.
- The handheld GPS utilised for the fieldwork had a maximum accuracy of 5 m. As such, any features spatially logged and mapped as part of this report may be offset by approximately 5 m.
- Only a single season survey was conducted for this assessment, and this constitutes a dry season survey. Temporal trends were therefore not considered. This level of assessment was deemed sufficient by the Specialist as the proposed Project footprint will be restricted to the already disturbed vegetation areas which are considered Very Low sensitivity where there is no evidence of functional CBA vegetation remaining. The adjacent forest areas to the north of the station are considered Very High sensitivity and will be demarcated as 'no-go' areas therefore additional seasonal assessments of the Very High sensitivity were not deemed necessary as these areas will not be impacted upon by the proposed Project.

2.7.3 AQUATIC ECOLOGY COMPLIANCE STATEMENT

- A single season site visit was conducted for the respective study, which would constitute a dry season survey. As a result, no spatial or temporal trends were assessed for the associated watercourses. This is supported by the Low Sensitivity rating for the site by the DFFE Screening Tool in which the prescribed protocol for a specialist assessment is a Compliance Statement.
- Despite the larger PAOI (downstream receiving environment) being considered as Very High sensitivity, a Compliance Statement was deemed sufficient by the Specialist as the proposed Project footprint will be restricted to the already disturbed vegetation areas which are considered Very Low sensitivity and where the nearest identified watercourse is a drainage line approximately 40 m from the proposed activities to the north of the site, away from the planned expansion area. The adjacent wetland areas are considered Very High sensitivity and will be demarcated as 'no-go' areas therefore additional seasonal assessments of the Very High sensitivity were not deemed necessary as these areas will not be impacted upon by the proposed Project.

2.7.4 HERITAGE ASSESSMENT

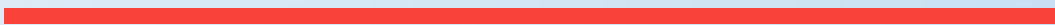
- The Heritage Assessment Report only deals with the footprint area of the proposed Project and consisted of non-intrusive surface surveys.
- The authors of the Heritage Assessment acknowledge that the brief literature review is not exhaustive on the literature of the area. Due to the nature of heritage resources and pedestrian surveys, the possibility exists that some features or artefacts may not have been discovered/recorded and the possible occurrence of graves and other cultural material cannot be excluded. This limitation is successfully mitigated with the implementation of a Chance Find Procedure and monitoring of the study area by the Environmental Control Officer (ECO).
- The study did not assess the impact on medicinal plants and intangible heritage as it is assumed that these components will be highlighted through the PPP if relevant. It is possible that new



information could come to light in future, which might change the results of the Heritage Assessment.

3

PROJECT DESCRIPTION



3 PROJECT DESCRIPTION

This section provides a description of the location of the project area and the site location alternatives considered for the project. The descriptions encompass the activities to be undertaken during the construction and operational phases as well as the consideration for site accessibility, water demand, supply, storage, and site waste management. This section also considers the need and desirability of the project in accordance with Appendix 1 of GNR 982.

3.1 LOCATION OF THE PROPOSED PROJECT

The locality details of the proposed Project are tabulated in **Table 3-1** below. The proposed Project will be located at Sasol’s existing PRS in Umbogintwini within the eThekwini Municipality in KZN. It is proposed that the Receiver Station and the associated pipelines will expand the footprint of the PRS by an area of 408 m² within the transformed low sensitivity area as illustrated in **Figure 8-1**.

The co-ordinates of the proposed development site are included in **Table 3-2** below.

Table 3-1 – Sasol Receiver Station Property Details

Property Description	
Province	KwaZulu-Natal
District Municipality	eThekwini Metropolitan Municipality
Local Municipality	eThekwini Metropolitan Municipality
Portion Number	Remainder of Portion 2190, Umlazi Location 4676 Remainder of Portion 2505, Umlazi Location 4676
SG Code	N0ET00000467602505 N0ET00000467602190

Table 3-2 – Co-ordinate Points of the Proposed Receiver Station Site

Map Label	Latitude	Longitude	Map Label	Latitude	Longitude
Proposed Pipelines					
A	30° 0'59.69"S	30°54'30.98"E	E	30° 0'58.83"S	30°54'31.84"E
B	30° 0'59.63"S	30°54'31.74"E	F	30° 0'59.43"S	30°54'31.98"E
C	30° 0'59.61"S	30°54'32.03"E	G	30° 0'59.48"S	30°54'31.38"E
D	30° 0'58.76"S	30°54'32.08"E	H	30° 0'59.60"S	30°54'31.39"E
Site Office					
SO1	30° 0'59.85"S	30°54'30.84"E	SO2	30° 0'59.78"S	30°54'30.93"E
SO3	30° 0'59.95"S	30°54'31.13"E	SO4	30° 0'60.00"S	30°54'31.05"E
Ablution Facilities					
A1	30° 1'0.26"S	30°54'31.06"E	A2	30° 1'0.35"S	30°54'31.13"E



The Project is located in a transformed area that is designated for industrial activity and for purposes of the existing PRS. Principal areas of activity within 5km of the Project include:

- Dickens, Kynoch and Oppenheimer Roads;
- Natrans Natal Transport Southwest from the site;
- Life Occupational Health Clinic Southwest from the site;
- Umbogintwini Industrial Complex West of the site;
- Railway line East of the site; and
- Forest area and Mbokodweni River North of the site.



Figure 3-1 – Sasol PRS and the proposed structures and pipeline associated with the Receiver Station (to be constructed on apron slabs)

3.2 GENERAL PIPELINE PIGGING

3.2.1 TYPES OF PIPELINE PIGS

Pipeline pigging involves the use of a "pig" device to perform pipeline maintenance, inspection, and clean-up tasks. The pipeline propels the pigs through the flow of liquid or gas in the line. Pigs come in various shapes and sizes and can be tailored to the parameters of a particular pipeline. There are four main types of pipeline pigs: foam pigs, brush pigs, cup pigs, and intelligent pigs.

Foam pigs are a basic pigging solution for pipelines that contain liquid. They are typically made from a lightweight foam material and have a conical shape. This allows them to travel through the pipeline with minimal resistance. Foam pigs have brushes attached to the tail, which helps sweep debris from the pipeline walls. Foam pigs are ideal for short pipelines, as it can be difficult to control in longer lengths.

Brush pigs are designed to clean pipelines that contain corrosive or sedimentary materials. These have a cylindrical shape and are made from rubber or nylon bristles. The bristles are designed to scrub away any residue that may be present in the pipeline. Brush pigs are ideal for long pipelines, as it provides a thorough cleaning and can travel long distances with minimal resistance.

Cup pigs are designed to separate debris from the liquid in a pipeline. These have a cup-shaped head with a tail sporting cups or discs. As the pig moves through the pipeline, the cups collect any present sediment. Cup pigs are most effective when dealing with small particles, such as sand and dirt, as larger particles may not be collected.

Intelligent pigs are designed to detect defects in pipelines. These are typically made from steel or plastic and contain various sensor components. These sensors allow the pig to detect any abnormalities in the pipeline walls, such as corrosion and cracks. Intelligent pigs are ideal for long-distance pipelines and can detect small defects that may be missed.

The figure below is a typical intelligent pipeline pig.

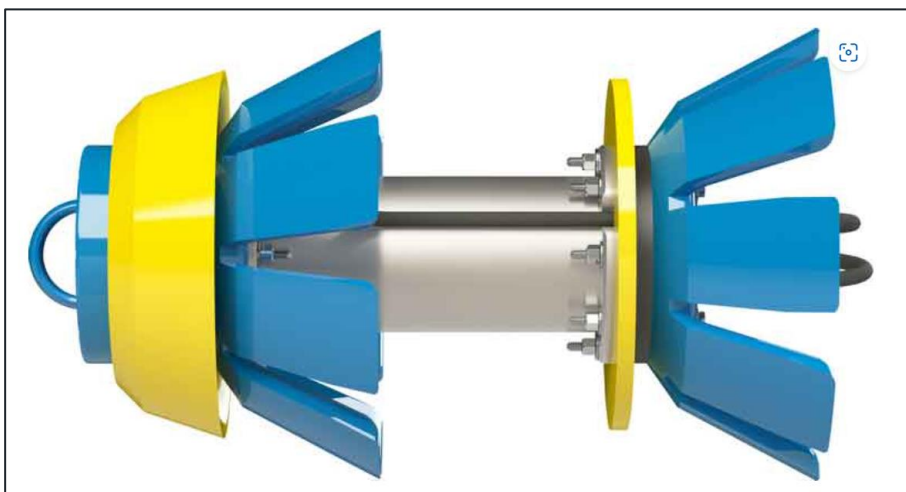


Figure 3-2 – A typical intelligent pipeline pig (www.i2ipipelines.com)

3.2.2 TYPICAL PIGGING PROCESS

By inserting the pig into a Pig Launcher (or Launching Station) and then applying flow under pressure to the rear of the device, the pig will move into the pipeline. The force applied by a pig as it traverses a pipeline can be calculated by multiplying the cross-sectional area of the back of the pig by the pressure applied to the rear of the pig.

Once a pig has launched and is moving through the pipeline, the differential pressure can be calculated by subtracting the pressure in front of the pig from the pressure acting on the back of the pig. The pig speed can be calculated by tracking the pig at various points along the pipeline and calculating the time it takes to arrive at each point against the input pressure and flow rate and then converting to velocity.

Generally, the outside diameter of most pigs will be sized to be larger than the internal bore and the resultant 'interference' enables the pig to scrape and remove debris as it traverses the pipeline. The degree of effectiveness in cleaning or clearing a pipeline is determined by the type of pig employed along with other influencing factors such as flow rate, pig speed, pressure, temperature, volume of debris to be removed, length of the pipeline, number of pigging runs, number and type of bends, pipeline elevations. pigging frequency and others.

When the pig reaches the other end of the pipeline it is captured in a Pig Catcher (or 'Receiving Station') which is isolated via a shut-off valve, allowing the pig to be safely removed.

Figure 3-3 below is a pig launcher/ receiver belonging to a natural gas pipeline.



Figure 3-3 – Pig launcher/receiver for a natural gas pipeline (oilgasfacility.com)

3.3 CURRENT OPERATION OF THE PRESSURE REDUCTION STATION

The PRS at Umbogintwini is the proposed site for the Receiver Station. The PRS is installed to reduce methane rich gas pressure from 50 bars to 6.5bars. The PRS installation also has filters where gas is cleaned before distribution to the Customer Metering Stations (CMS).

Equipment used on the PRS (valves, metre etc.) are flanged and could leak during normal operation. These points are identified during the Hazardous Area Classification (HAC) study as sources of release points. Any visible/known ignition sources should be eliminated from the station or within the predetermined hazardous area to avoid fires in case of a gas leak.

The PRS gas is fed from a high-pressure transmission gas pipeline from the Petronet tie-in at Bayhead to the PRS. This pipe is a 12" API 5L X52 ERW pipe with a wall thickness of 8,38mm. The length of the pipeline is 26 220m. The maximum allowable operating pressure is 59 bars and the current operating pressure is 50 bar.

Figure 3-1 illustrates the layout of the existing PRS in relation to the proposed Receiver Station which will be erected on concrete apron slabs.

3.3.1 PROPOSED SASOL PIGGING OPERATIONS

The proposed Receiver Station will be constructed on apron slabs within the disturbed footprint of the existing PRS at Umbogintwini. New pipelines will also be installed for the Receiver Station which will expand the existing servitude of the PRS by an area not exceeding 250 m² as indicated in **Figure 3-1**. Temporary offices and ablution facilities will also be made available during the construction phase and will be located within the Very Low sensitivity areas of the site.

The proposed Receiver Station and associated pigs will be installed to fulfil the purposes of the mandatory integrity assessment of the South Durban Pipeline (SDP). Integrity assessment of pipelines is a code requirement (ASME B31.8S). In- line inspection is the preferred method for the assessment of long pipelines such as the South Durban Pipeline (SDP) as it does not require the pipelines to be shut down. The main objective of the proposed Project is to make the pipeline piggable – to allow passage of in-line inspection tools which will enable smart tools to be launched into the pipeline to examine its integrity and safety of operations.

The initial piggability study undertaken by Sasol concentrated on establishing a Pig Launcher Station (not part of this application) and a Receiver Station. The study focussed on ensuring that the bends are piggable (minimum radius of 1.5D) and that all valves are full bore ball valves and of the same diameter or larger than the main pipeline. All modifications (deviations and tie-ins) made to the pipeline will be examined to ensure the passage of inspection tools is not hampered

3.3.1.1 Project Infrastructure and Construction Methods

Table 3-3 below provides a summary of the project infrastructure and the associated methods that will be implemented during construction. The activities and infrastructure include:

- Site preparation;
- 10m trench bypass line;
- Stoppie fittings installation;
- Bypass line construction;
- 50m trenching for the Receiver inlet line and filter outlet line;
- Receiver inlet line and filter outlet line construction;

- Fence installation; and
- Concrete apron slabs.

Table 3-3 – Project Infrastructure and Construction Methods

Activity	Method
Site Preparation	<ul style="list-style-type: none"> ▪ Site establishment i.e., temporary ablution facilities and site offices. ▪ SHE files' approval and site access. ▪ Transport of piping and equipment to site. ▪ Clearance of the site of rubble and grass where required. ▪ Demarcation of the construction area – barricades to be used around the working area. ▪ Erection of temporary fences prior to construction.
10m Trench for Bypass Line	<ul style="list-style-type: none"> ▪ Permit to be received from Sasol Satellite Operations. ▪ Excavate trench using a TLB, use of shoring if required, to expose the existing pipeline. All ground that has been dug up will be placed a minimum of 1 m away from the trench.
Stoppie Fittings installation	<ul style="list-style-type: none"> ▪ Remove existing pipeline wrapping and clean weld areas by grinding. ▪ Install end blank and connect digital recorder to pressure test manifold as well as a suitable pressure gauge.
Bypass line construction	<ul style="list-style-type: none"> ▪ Material to be bought for the construction of the bypass lines. ▪ Bypass line to be constructed according to line stop fittings on site.
50m Trenching for Receiver inlet line and filter outlet line	<ul style="list-style-type: none"> ▪ Excavation will take place by using a TLB. ▪ There will be 2 trenches dug out, the trench sizes are 1.2m deep x 800mm wide. ▪ If required shoring will be done and an access will be created. ▪ All ground that has been dug out will be placed in a demarcated area to prevent the trench from caving in.
Receiver inlet line and filter outlet line construction	<ul style="list-style-type: none"> ▪ The piping will be put in place by using an 8 Ton truck mounted crane. ▪ Each section of piping will be tack welded. ▪ Once all tack welds are completed the AIA will inspect all fit ups. ▪ Welding will then commence. ▪ Once all welds are cleared by NDE. The pressure testing of the pipeline will take place.

	<ul style="list-style-type: none"> ■ A pig launcher and receiver will be installed to clean and dry the two pipelines to ensure that no residual water is left after venting is completed. ■ Once the pipelines are cleaned, the wrapping process will commence. ■ Holiday testing to take place on the pipelines to ensure that there are no holiday defects. ■ Seven (7) excavations for the receiver slab and filter slab will then be done, at the indicated positions. ■ Excavations for the valves will be done at indicated positions. ■ The valve concrete slabs will then be cast for all valve chambers. ■ Concrete slab will then be cast for the receiver slab and filter slab.
Fence installation	<ul style="list-style-type: none"> ■ Trenches for the clear-vu fence poles will be dug 500mmx500mmx500mm. ■ The poles will be planted. ■ The clear-vu fence will then be installed. ■ 19mm crusher stone will then be transported onto the newly constructed site area.
Concrete apron slabs	<ul style="list-style-type: none"> ■ Excavations to be done around the clear-vu fence will be made 2mx1mx380mm deep. ■ The ground will then be refilled and compacted into layers of 150mm with each layer to be compacted to 95% MODAASHTO (maximum dry density). ■ Shutters will then be put in place for the apron slabs. ■ The apron slabs will then be cast in two block sections until the apron slab is completed.
Erection of the Receiver Station	<ul style="list-style-type: none"> ■ The Receiver Station will be erected on the apron slabs as described above.

3.3.2 OPERATIONAL PHASE

During operation, the key activities will include the passage of in-line inspection tools which will enable smart tools to be launched into the pipeline to examine its integrity.

3.3.3 DECOMMISSIONING PHASE

The decommissioning phase will include activities similar to that of the construction phase as indicated in **Table 3-3**.

3.4 NEED AND DESIRABILITY OF THE PROJECT

The South Durban Pipeline is due for its first in line inspection in order to determine the overall integrity of the pipeline and to ensure that the pipeline is maintained in a state that will allow for optimal functioning. In order to fulfil the mandatory code requirement (ASME B31.8S), the SDP must undergo an integrity inspection. This is the first inspection that the SDP will be subjected to. The proposed Receiver Station and associated new pipelines will make the SDP pipeline “piggable” to allow for an integrity inspection to be conducted without imposing operational constraints such as shutting down of the pipeline or excessive cost constraints that are associated with physical



inspection of the pipeline. Usually, the physical inspection can result in an accurate detection of the location and size of a leak, but this comes with the expense of production shutdown and the high cost coupled with the extended duration to run the physical detection, which is very crucial in a long-distance gas pipeline.

Therefore, pipeline pigging is more favourable in comparison to physical inspection. Pigging contributes to the cost-efficiency and overall effectiveness of pipeline maintenance. By removing sediment, debris and other contaminants from the interior of the pipeline, the pigging process improves the flow of material and reduces the risk of costly blockages. Pigging also helps extend pipeline life by preventing corrosion and other damage.

Damaged pipelines can also cause leaks or spills leading to environmental contamination. Pigging reduces these hazards by aiding in maintaining the cleanliness of the pipelines and ensuring that these are in good working order.

By using pigs to clean and inspect pipelines, operators can reduce the risk of downtime, extend the life of the pipelines and prevent environmental damage.

The most significant positive impact identified, is the improved efficiency and functioning of the SDP following the inspection and cleaning activities associated with the Receiver Station.

4

PROJECT ALTERNATIVES



4 PROJECT ALTERNATIVES

The EIA Regulations require that the BA process must identify and describe alternatives to the proposed activity that were considered, or motivation for not considering alternatives. Different types or categories of alternatives could be considered including different locations, site locations, technology types, and project layouts. It is not always possible to provide alternatives to various categories as project designs and locations may already be located strategically or may be too costly for the Project to proceed.

4.1 SITE ALTERNATIVES

Sasol's existing SDP is scheduled for its first in line inspection via pipeline pigging. The proposed location for the pigging Receiver Station at the existing PRS is the only suitable site and therefore no site alternatives were considered as part of this assessment. Pigging can only occur along a pipeline route where a Receiver Station can be located.

The existing PRS is the only point along the SDP that can be expanded to accommodate for the Receiver Station and therefore is the only site alternative.

4.2 TECHNOLOGY ALTERNATIVES

Traditionally, gas pipelines were physically inspected to identify the location and size of the leak. Physical inspection consists of gas sampling; soil monitoring; flow-rate monitoring; and acoustic-, optical-, and satellite-based hyperspectral imaging. Further to this, physical inspection also included the following:

- Caliper and Geometric which use a series of sensors along the pipe to measure its geometry, detecting any structural abnormalities such as buckling or bulging.
- Magnetic Flux Leakage (MFL) which use magnetic fields to detect any changes in the pipe wall thickness or defects that have occurred since it was last inspected.
- Ultrasonic (UT) which use high-frequency sound waves that travel through the pipe wall to detect any anomalies within it.

Usually, the physical inspection can result in an accurate detection of the location and size of a leak, but this comes with the expense of production shutdown and the high cost/long time to run the physical detection, which is very crucial in a long-distance gas pipeline.

The alternative to physical inspection is pipeline pigging. Pipeline pigging is a concept in pipeline maintenance that involves the use of devices known as pigs, which clean pipelines and are capable of checking pipeline conditions.

Pigging will maintain and ensure the optimal efficiency of the pipeline, it is a cost-effective alternative to traditional maintenance and cleaning methods and offers benefits such as improved pipeline efficiency, reduced maintenance costs, and increased productivity.

Sasol finds pigging favourable in comparison to other maintenance alternatives as a shutdown of the pipeline is not required as well as the reduced cost associated with

pigging in relation to physical inspection methods. The pigging process is done without interfering with the flow of product in the pipe or a shut down.

Therefore, the only technology option suitable to Sasol's SDP, is pigging and traditional methods of physical inspection were eliminated as a result of the high costs and increased time required for these inspections to be undertaken.

4.3 LAYOUT ALTERNATIVES

The proposed layout for the Receiver Station was determined by the footprint of the existing PRS and defined by the surrounding forest and wetland areas which are to be considered as 'no-go' areas due to its High sensitivity. As such, the layout for the Receiver Station is confined to the disturbed PRS footprint, therefore no additional layout alternatives were considered.

The image below is the preferred and only layout alternative for the Receiver Station.



Figure 4-1 – Sasol Receiver Station Project Layout at the existing PRS Site (Sasol to provide date of image)

4.4 NO-GO ALTERNATIVE

The no-go alternative is essentially the option of not expanding existing PRS to include the Receiver Station for pigging operations to be undertaken. As a result, the pipeline integrity cannot be confirmed by pigging and the traditional methods of inspection may be required which is costly, time consuming and will require shut down of the SDP. Damages to the pipeline will take a longer time to detect which could result in environmental damage and additional expenses to the Proponent. Further to this, the SDP will not meet the mandatory requirement for inspection and maintenance if the PSR is not expanded to include the Receiver Station.

5

GOVERNANCE FRAMEWORK



5 GOVERNANCE FRAMEWORK

5.1 NATIONAL LEGAL AND REGULATORY FRAMEWORK

The South African regulatory framework establishes well-defined requirements and standards for environmental and social management of industrial and civil infrastructure developments. Different authorities at both national and regional levels carry out environmental protection functions. The applicable legislation and policies are shown in **Table 5-1**.

Table 5-1 – Applicable National Legislation

Legislation	Description of Legislation and Applicability
The Constitution of South Africa (No. 108 of 1996)	The Constitution cannot manage environmental resources as a stand-alone piece of legislation hence additional legislation has been promulgated to manage the various spheres of both the social and natural environment. Each promulgated Act and associated Regulations are designed to focus on various industries or components of the environment to ensure that the objectives of the Constitution are effectively implemented and upheld in an on-going basis throughout the country. In terms of Section 7, a positive obligation is placed on the State to give effect to the environmental rights.
National Environmental Management Act (No. 107 of 1998)	<p>In terms of Section 24(2) of the NEMA, the Minister may identify activities, which may not commence without prior authorisation. The Minister thus published GNR 983 (as amended) (Listing Notice 1), GNR 984 (as amended) (Listing Notice 2) and GNR 985 (as amended) (Listing Notice 3) listing activities that may not commence prior to obtaining an EA.</p> <p>The regulations outlining the procedures required for authorisation are published in the EIA Regulations (GNR 982). Listing Notice 1 identifies activities that require a BA process to be undertaken, in terms of the EIA Regulations, prior to commencement of that activity. Listing Notice 2 identifies activities that require a Scoping and Environmental Impact Assessment (S&EIA) process to be undertaken, in terms of the EIA Regulations, prior to commencement of that activity. Listing Notice 3 identifies activities within specific areas that require a BA process to be undertaken, in terms of the EIA Regulations, prior to commencement of that activity.</p> <p>WSP undertook a legal review of the listed activities according to the proposed Project description to conclude that the activities listed in in this section are considered applicable to the development: A BA process must be followed.</p> <p>An EA is required and will be applied for with the EDTEA.</p>
Listing Notice 3: GNR 985	<p>Activity 12</p> <p><i>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan in (d) KZN:</i></p> <p>iv. <i>Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such</i></p>

Legislation	Description of Legislation and Applicability
	<p><i>a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</i></p> <p><i>v. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i></p> <p>Description:</p> <p>It is likely that more than 300 m³ will be cleared during the expansion of the existing PRS to include the Receiver Station. The site, although disturbed, is located in a CBA: Irreplaceable as defined by the KZN Biodiversity Sector Plan (2016) and situated within the KZN Coastal Belt Grassland which is considered Endangered (EN) as per the NBA, 2018.</p> <p>This activity will be triggered by the expansion of the PRS to include the Receiver Station.</p>
<p>Listing Notice 3: GNR 985</p>	<p>Activity 23</p> <p><i>The expansion of-</i></p> <p><i>(ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more;</i></p> <p><i>Where such expansion occurs</i></p> <p><i>a) Within a watercourse;</i></p> <p><i>b) In front of a development setback adopted in the prescribed manner; or</i></p> <p><i>c) If no development setback has been adopted within 32 metres of a watercourse measured from the edge of a watercourse</i></p> <p><i>d. in KZN</i></p> <p><i>vii. Critical biodiversity areas or ecological support areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i></p> <p>Upon completion of the wetland study and aquatic compliance statement, it is confirmed that the proposed Receiver Station and associated laydown area is approximately 68 m away from the nearest watercourse and therefore this activity is not applicable.</p>
<p>National Environmental Management: Waste Act (59 of 2008) (NEM: WA)</p>	<p>This Act provides for regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation. The Act also provides for the licensing and control of waste management activities through GNR. 921 (2013): List of Waste Management Activities that Have, or are Likely to Have, a Detrimental Effect on the Environment.</p> <p>The proposed Project does not constitute a Listed Activity requiring a Waste Management Licence as defined in GNR 921.</p> <p>However, the contents of this BAR will include reasonable measures for the prevention of pollution and Good International Industry Practice (GIIP).</p>
<p>National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)</p>	<p>The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) was promulgated in June 2004, within the framework of NEMA, to provide for the management and conservation of national biodiversity. NEMBA's primary aims are for the protection of species and</p>

Legislation	Description of Legislation and Applicability
	<p>ecosystems that warrant national protection, the sustainable use of indigenous biological resources, and the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources. In addition, NEMBA provides for the establishment and functions of the South African National Biodiversity Institute (SANBI). SANBI was established primarily to report on the status of the country's biodiversity and conservation status of all listed threatened or protected species and ecosystems.</p> <p>The Conservation of Agricultural Resources Act (No. 43 of 1993) (CARA) Regulations with regards to alien and invasive species have been superseded by the NEMBA- Alien and Invasive Species (AIS) Regulations which became law on 1 October 2014.</p> <p>The proposed Project, including the associated infrastructure may negatively impact on the biodiversity of the area, as the project site is located within a CBA and the Critically Endangered KZN Coastal Belt Grassland as mapped by the KZN Biodiversity Sector Plan (2016) and the NBA (2018).</p>
National Environmental Management Protected Areas Act (No. 57 of 2003)	<p>The purpose of the National Environmental Management Protected Areas Act (No. 57 of 2003) (NEMPAA) is to, <i>inter alia</i>, provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. To this end, it provides for the declaration and management of various types of protected areas.</p> <p>Section 50(5) of NEMPAA states that "no development, construction or farming may be permitted in a nature reserve or world heritage site without the prior written approval of the management authority."</p> <p>According to the National Protected Area Expansion Strategy (NPAES), the site overlaps with priority focus areas for expansion.</p>
The National Water Act (No. 36 of 1998)	<p>The purpose of the National Water Act (No. 36 of 1998) (NWA) is to provide a framework for the equitable allocation and sustainable management of water resources. Both surface and groundwater sources are national resources, which cannot be owned by any individual, and rights to which are not automatically coupled to land rights, but for which prospective users must apply for authorisation and register as users. The NWA also provides for measures to prevent, control and remedy the pollution of surface and groundwater sources.</p> <p>The Act aims to regulate the use of water and activities (as defined in Part 4, Section 21), which may impact on water resources through the categorisation of 'listed water uses.' Defined water-use activities require the approval of DWS in the form of a General Authorisation (GA) or Water Use Licence (WUL) authorisation.</p> <p>Registration of the Section 21c and i water uses via a GA is required for the Receiver Station in Umbongintwini due to the proposed expansion which is being undertaken within the DWS Regulated Zone.</p>
The National Heritage Resources Act (No. 25 Of 1999)	<p>The National Heritage Resource Act (Act No. 25 of 1999) (NHRA) serves to protect national and provincial heritage resources across South Africa. The NHRA provides for the protection of all archaeological and palaeontological sites, the conservation and care of cemeteries and graves by the South</p>

Legislation	Description of Legislation and Applicability
	<p>African Heritage Resource Agency (SAHRA) and lists activities which require any person who intends to undertake to notify the responsible heritage resources agency and furnish details regarding the location, nature, and extent of the proposed development.</p> <p>Construction activities should be conducted carefully, and all activities ceased if any archaeological, cultural and heritage resources are discovered. SAHRA should be notified, and investigation conducted in accordance with the Chance Find Procedure to be established for the Project before any activities can commence.</p> <p>A Heritage Assessment has been conducted for the proposed Project.</p>
<p>Noise Control Regulations in terms of the Environmental Conservation, 1989 (Act 73 of 1989)</p>	<p>In South Africa, environmental noise control has been in place for three decades, beginning in the 1980s with codes of practice issued by the South African National Standards (formerly the South African Bureau of Standards, SABS) to address noise pollution in various sectors of the country. Under the previous generation of environmental legislation, specifically the Environmental Conservation Act 73 of 1989 (ECA), provisions were made to control noise from a National level in the form of the Noise Control Regulations (GNR 154 of January 1992). In later years, the ECA was replaced by the NEMA as amended. The National Environmental Management: Air Quality Act 39 of 2004 (NEM:AQA) was published in line with NEMA and contains noise control provisions under Section 34:</p> <p>(1) The minister may prescribe essential national standards –</p> <p>(a) for the control of noise, either in general or by specific machinery or activities or in specified places or areas; or</p> <p>(b) for determining –</p> <p>(i) a definition of noise; and</p> <p>(ii) the maximum levels of noise.</p> <p>(2) When controlling noise, the provincial and local spheres of government are bound by any prescribed national standards.</p> <p>Under NEMAQA, the Noise Control Regulations were updated and are to be applied to all provinces in South Africa. The Noise Control Regulations give all the responsibilities of enforcement to the Local Provincial Authority, where location specific by-laws can be created and applied to the locations with approval of Provincial Government. Where province-specific regulations have not been promulgated, acoustic impact assessments must follow the Noise Control Regulations.</p> <p>Furthermore, NEM:AQA prescribes that the Minister must publish maximum allowable noise levels for different districts and national noise standards. These have not yet been accomplished and as a result all monitoring and assessments are done in accordance with the South African National Standards (SANS) 10103:2008 and 10328:2008.</p>
<p>National Environment Management Air Quality Act (No. 39 of 2004)</p>	<p>The National Environment Management: Air Quality Act (No. 39 of 2004) (NEM:AQA) came into effect on 11 September 2005. Persons undertaking such activities listed under GNR 893, as amended, are required to possess an Atmospheric Emissions License (AEL). The NEM:AQA aims to protect the environment by providing reasonable measures for the protection and</p>

Legislation	Description of Legislation and Applicability
	<p>enhancement of the quality of air in South Africa, to prevent air pollution and ecological degradation and to secure ecological sustainable development while promoting justifiable economic and social development.</p> <p>In line with Section 21 of NEM:AQA, GNR 893 of 2013 provides the listed activities for which an AEL is required and the associated minimum emission standards (MES) by emission category. In terms of Section 32 of the NEM:AQA The National Dust Control Regulations (GNR 827) were promulgated, which aim at prescribing general measures for the control of dust in both residential and non-residential areas.</p> <p>No AEL will be required for the construction and operation of the proposed project.</p>
<p>Civil Aviation Act (No. 13 of 2009)</p>	<p>Civil aviation in South Africa is governed by the Civil Aviation Act (Act 13 of 2009). This Act provides for the establishment of a stand-alone authority mandated with controlling, promoting, regulating, supporting, developing, enforcing and continuously improving levels of safety and security throughout the civil aviation industry. This mandate is fulfilled by the South African Civil Aviation Authority (SACAA) as an agency of the Department of Transport (DoT). SACAA achieves the objectives set out in the Act by complying with the Standards and Recommended Practices (SARPs) of the International Civil Aviation Organisation (ICAO), while considering the local context when issuing the South African Civil Aviation Regulations. All proposed developments or activities in South Africa that potentially could affect civil aviation must thus be assessed by SACAA in terms of the Civil Aviation Regulations and South African Civil Aviation Technical Standards (SA CATS) to ensure aviation safety. Potential impacts from the pigging station must be reviewed by these authorities.</p> <p>The Obstacle Evaluation Committee (OEC) which consists of members from both the SACAA and South African Air Force (SAAF) fulfils the role of streamlining and coordinating the assessment and approvals of proposed developments or activities that have the potential to affect civil aviation, military aviation, or military areas of interest. With both being national and international priorities, the OEC is responsible for facilitating the coexistence of aviation and renewable energy development, without compromising aviation safety.</p> <p>The details of the proposed Project will be provided to the SACAA who will be registered on the list of IAPs.</p>
<p>Occupational Health and Safety Act (No. 85 of 1993)</p>	<p>The National Occupational Health and Safety Act (No. 85 of 1993) (OHSA) and the relevant regulations under the Act are applicable to the proposed project. This includes the Construction Regulations promulgated in 2014 under Section 43 of the Act. Adherence to South Africa's OHSA and its relevant Regulations is essential.</p>

5.2 PROVINCIAL AND MUNICIPAL LEGAL AND REGULATORY FRAMEWORK

Table 5-2 – Provincial Plans

Applicable Plan	Description of Plan
KZN Biodiversity Sector Plan 2016	<p>Critical Biodiversity Areas (CBAs) are areas required to meet biodiversity targets for ecosystems, species and ecological processes, as identified in a systematic biodiversity plan – and may be terrestrial or aquatic. The primary purpose of a map of CBAs is to guide decision-making about where best to locate development. It should inform land-use planning, environmental assessment and authorisations, and natural resource management, by a range of sectors whose policies and decisions impact on biodiversity. It is the biodiversity sector’s input into multi-sectoral planning and decision-making processes.</p> <p>The site, although disturbed, is located in a CBA: Irreplaceable as defined by the KZN Biodiversity Sector Plan (2016), consisting of Southern Coastal Grasslands.</p>
eThekweni Municipality Spatial Planning	<p>The Durban Metropolitan Open Space System (D'MOSS) has been added into the eThekweni Municipality planning schemes throughout the city as a “control area” or “overlay”. It is a controlled area wherein, despite the underlying zoning, development may not occur without having first obtained the necessary EA or support from the Environmental Planning and Climate Protection Department of the eThekweni Municipality. Where EA is granted, it is likely to be subject to significant controls to ensure that the biodiversity and / or ecosystem goods and services of the designated land is not negatively affected. The following conditions can be stipulated within DMOSS:</p> <ul style="list-style-type: none"> ■ Restrict form and nature of building or structure ■ Limit the size and / or shape of the building or structure ■ Prescribe or restrict the materials of which the building or structure is to be constructed ■ Determine the siting of any building or structure and of any soak pits or other drainage works ■ Prohibit and control any excavation on the site, the construction of any roadways, paths and other garden features ■ Prohibit or control the removal of any natural vegetation <p>The Receiver Station site is located adjacent to D'MOSS, and the larger Project Area of Interest (PAOI) as delineated within the Terrestrial Ecology Compliance Statement (Appendix F) intersects with the D'MOSS.</p>
KwaZulu-Natal Amafa and Research Institute Act, 2018	<p>The KwaZulu-Natal Amafa and Research Institute Act, 2018 (Act No. 05 of 2018) was established to recognise the KwaZulu-Natal Amafa and Research Institute as the provincial heritage resources authority for the KwaZulu-Natal in terms of Section 23 of the National Heritage Resources Act, 1999, and to amalgamate <i>Amafa aKwzaZulu-Natali</i> in terms of the KwaZulu-Natal Heritage Act, 2008. The aim of the of the Institute and Act is to identify, conserve, protect, manage and administer heritage resources, whilst researching and generating relevant knowledge to provide solutions within the field of heritage in the province.</p>

5.3 ADDITIONAL PERMITS AND AUTHORISATIONS

Table 5-3 outlines the additional permits and authorisations required for the proposed development, as well as the relevant Competent Authorities responsible.

Table 5-3 – Additional Permits and Authorisations required for the proposed development

Permits / Authorisation	Legislation	Relevant Authority	Status
General Authorisation (GA) required as the proposed Project is situated within the DWS Regulated Zone i.e. within 500 m from the edge of a wetland	Section 21c and i of the National Water Act, 36 of 1998	DWS	Pending submission

6

BASELINE ENVIRONMENT AND SITE VERIFICATION



6 BASELINE ENVIRONMENT AND SITE VERIFICATION

The following chapter presents an overview of the biophysical and socio-economic environment in which the proposed Project is located. It is important to gain an understanding of the Project area and its surroundings, as it will provide for a better understanding of the receiving environment in which the Project is being considered.

The description of the baseline environment is essential in that it represents the conditions of the environment before the construction of the proposed Project (i.e., the current, or status quo, environment) against which environmental impacts of the proposed Project can be assessed and future changes monitored.

The area has previously been studied to some extent and is recorded in various sources. Consequently, some components of the baseline have been generated based on literature review. However, where appropriate, baseline information has been supplemented or generated by the specialist appointed to undertake baseline and impact assessments for the proposed Project.

6.1 PHYSICAL ENVIRONMENT

6.1.1 CLIMATE

Durban climate is warm and temperate, characterised by hot and humid summers and warm winters. Average rainfall is approximately 893 mm per year, with most rainfall occurring in March (134 mm) and the lowest average rainfall in June (30 mm) (**Figure 6-1**).

The temperature in Durban averages 20.9 °C per annum, with February being the warmest month with an average of 24.3 °C. The lowest average temperature is in July at around 17.3 °C. The highest average temperatures occur in the summer months, between December and March, and the coldest months are between June and August (**Figure 6-2**).

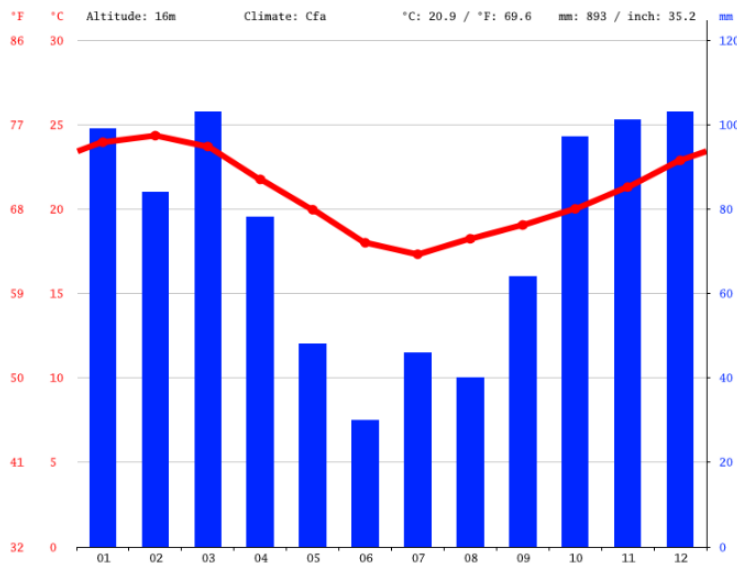


Figure 6-1 – Average rainfall in Durban (Source: <https://en.climate-data.org/>)

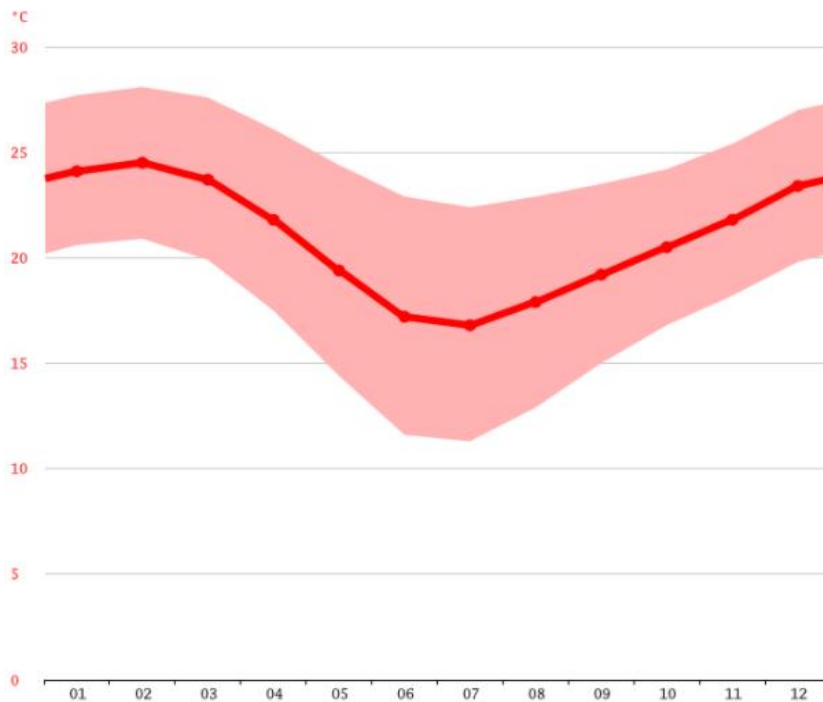


Figure 6-2 – Average temperature in Durban (Source: <https://en.climate-data.org/>)

6.2 TERRESTRIAL ENVIRONMENT

6.2.1 AGRICULTURE

The purpose of including an agricultural component in the environmental assessment process is to ensure that South Africa balances the need for development against the need to ensure the conservation of the natural agricultural resources, including land, required for agricultural production and national food security. The different categories of agricultural sensitivity, used in the national web-based environmental screening tool, indicate the priority by which land should be conserved as agricultural production land.

Agricultural sensitivity is a direct function of the capability of the land for agricultural production. All arable land that can support viable crop production, is classified as high (or very high) sensitivity. This is because there is a scarcity of arable production land in South Africa and its conservation for agricultural use is therefore a priority. Land which cannot support viable crop production is much less of a priority to conserve for agricultural use and is rated as medium or low agricultural sensitivity.

The DFFE Screening Tool classifies agricultural sensitivity according to only two independent criteria – the land capability rating and whether the land is used for cropland or not. All cropland is classified as at least high sensitivity, based on the logic that if it is under crop production, it is indeed suitable for it, irrespective of its land capability rating.

The screening tool sensitivity categories in terms of land capability are based upon the Department of Agriculture's updated and refined, country-wide land capability mapping, released in 2016. The

data is generated by GIS modelling. Land capability is defined as the combination of soil, climate, and terrain suitability factors for supporting rain fed agricultural production. It is an indication of what level and type of agricultural production can sustainably be achieved on any land, based on its soil, climate, and terrain. The higher land capability values (≥ 8 to 15) are likely to be suitable as arable land for crop production, while lower values are only likely to be suitable as non-arable grazing land.

A map of the proposed Project area overlaid on the Screening Tool sensitivity is given in the figure below. The land was historically classified as cropland and therefore rated Very High by the DFFE Screening Tool. The land is no longer used as cropland and has been historically transformed into the PRS site for Sasol's SDP.



Figure 6-3 - Map of Agriculture Sensitivity

Source: DFFE Screening Report

The DFFE screening tool identifies the agricultural sensitivity as High, however, a site visit was conducted on 31 January 2023 by the EAP, confirming the Project footprint and surrounding areas to be completely transformed due to the existing PRS.

6.2.2 ANIMAL SPECIES

6.2.2.1 DFFE Screening Tool

The DFFE Screening Tool has rated the site to be of High sensitivity in relation to the animal species theme due to the potential occurrence of SCC including *Aves-Stephanoaetus coronatus*, *Amphibia-Hyperolius pickersgilli* and *Mammalia-Dendrohyrax arboreus* amongst others (**Figure 6-4**)

Following the field survey findings, both the animal species themes should retain its rating for the PAOI. This is due to the fact that the occurrence of sensitive SCC is considered likely within the coastal forest habitat as it may be classified as a functional ecosystem.



Figure 6-4 - Map of Animal Species Sensitivity

Source: DFFE Screening Report

6.2.2.2 Site Sensitivity Verification

The presence of dense and functional forest areas, and the close proximity of wetland features, means that numerous fauna species are highly likely to forage and possibly nest within or nearby to the PAOI, including several SCC known to frequent the region. During the survey numerous indigenous avifauna species were observed such as *Gallirex porphyreolophus* (Purple-crested Turaco), *Andropadus importunus* (Sombre Greenbul) and *Cossypha natalensis* (Red-capped Robin-Chat).

Habitat Survey and Site Ecological Importance

The main habitat types identified across the project area were initially identified largely based on aerial satellite imagery. These habitat types were then refined based on the field coverage and data collected during the survey. Three habitat units are delineated for the project area: coastal forest, wetland, and transformed (**Figure 6-5**). Coastal forest is the most widespread habitat of the PAOI and is characterised by a dense cover of indigenous vegetation which is considered to be highly functional and likely supportive of numerous fauna species, including SCC. The wetland portion is also classified as a uniquely sensitive feature due to the provision of uniquely valuable ecosystem services and the support that this habitat provides to amphibians, mammals and waterfowl in particular. It is characterised by streams of slow flowing water and *Cyperus spp.*

The transformed habitat unit where the Receiver Station will be located, is made up of the areas of existing infrastructure as well as those portions of the PAOI that no longer support functional indigenous vegetation, such as the short lawn and cleared servitude areas.

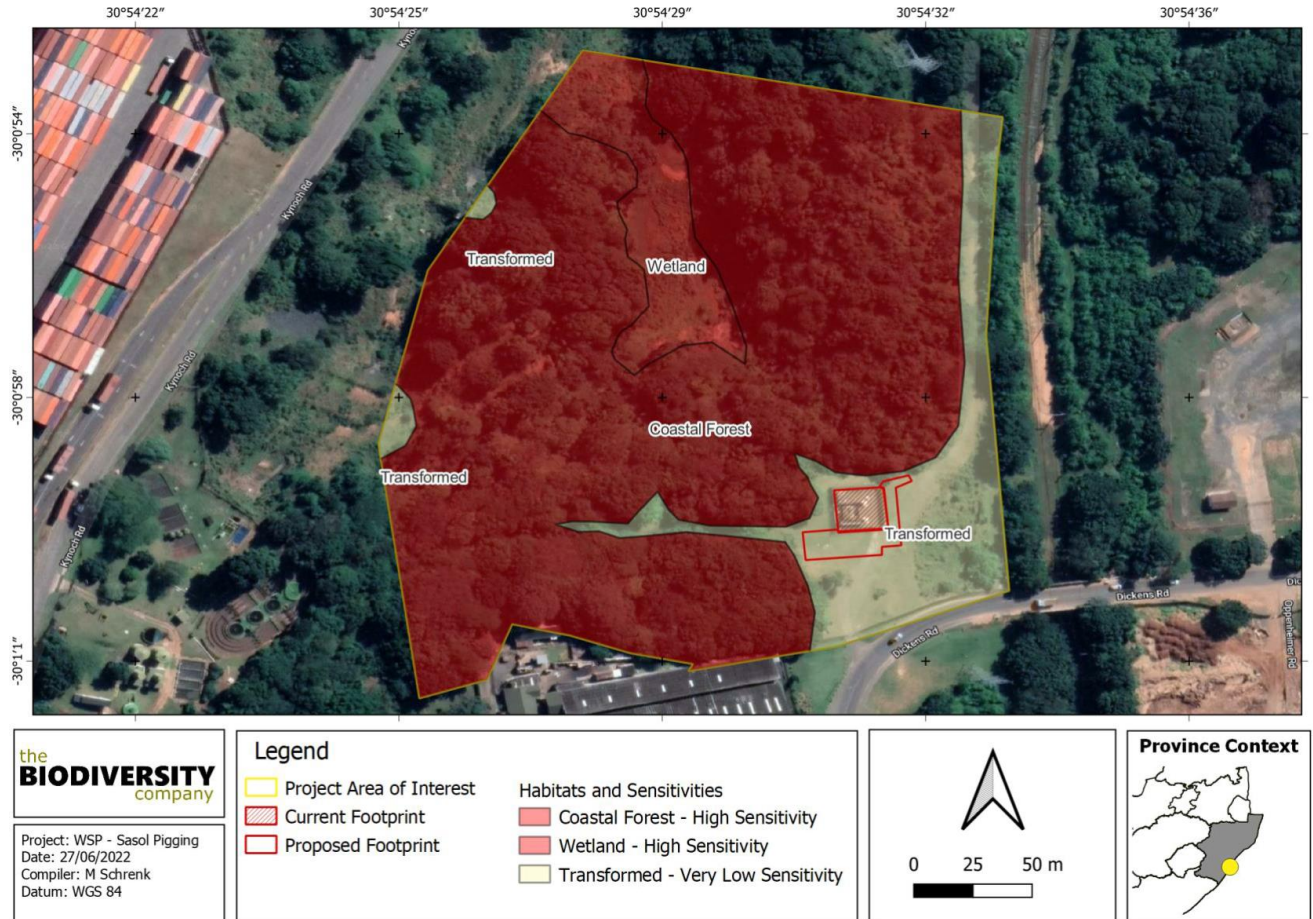


Figure 6-5 - Map of the Site Ecological Importance Associated with the Project Area

6.2.3 AQUATIC SPECIES THEME

6.2.3.1 Hydrological Baseline

*This section is supplemented with information from the Freshwater Compliance Statement (The Biodiversity Company, 2022) and included in **Appendix G.1** of this BAR.*

The project area is located within the U60E quaternary catchment in the Pongola to Mtamvuna Water Management Area (WMA) (NWA, 2016), and the North-eastern Coastal Belt Ecoregion. The Project footprint is located 40 m south of a small drainage line that flows north into the Mbokodweni River and the freshwater features associated with the Project area are presented in the figure overleaf (**Figure 6-6**).

Based on the topography of the local area, this drainage line drains the proposed working area, with activities within the active working area having the potential to negatively influence the downslope drainage lines and watercourses further downstream in the catchment. The watercourse draining the



project footprint is characterised as an ephemeral drainage line and wetland system according to National Freshwater Ecosystem Priority Areas (NFEPA) datasets.

The downstream Mbokodweni River reach (the receiving environment) is represented by the U60E-4792 Sub-quaternary Reach (SQR). The U60E-4792 SQR reach spans approximately 10 km of the Mbokodweni River. The ecological status and composition of the classified (SQR) is ranked as moderately modified (Class C) whilst the ecological status of the unclassified drainage line is unknown. Desktop information of the catchment and watercourse condition was obtained from DWS (2014).

The catchment surrounding the Project area falls under the Mbokodweni SQR and therefore the ecological status of the Mbokodweni SQR was substituted for the unclassified drainage. The Present Ecological Status (PES) category of the reach is classed as moderately modified (class C). The Ecological Importance (EI) of the reach is classified as high. The Ecological Sensitivity (ES) is categorised as very high due to the presence of macroinvertebrate taxa that are sensitive to flow and physico-chemical water modifications. Anthropogenic impacts identified within the sub quaternary catchment included rural communities, cultivated lands, alien invasive plants, roads, and instream dams within the reach.

Furthermore, the Mbokodweni reach associated with the Project falls within the ecologically important and sensitive Estuarine Functional Zone (EFZ) however the Project itself is situated outside of the EFZ (**Figure 6-7**).

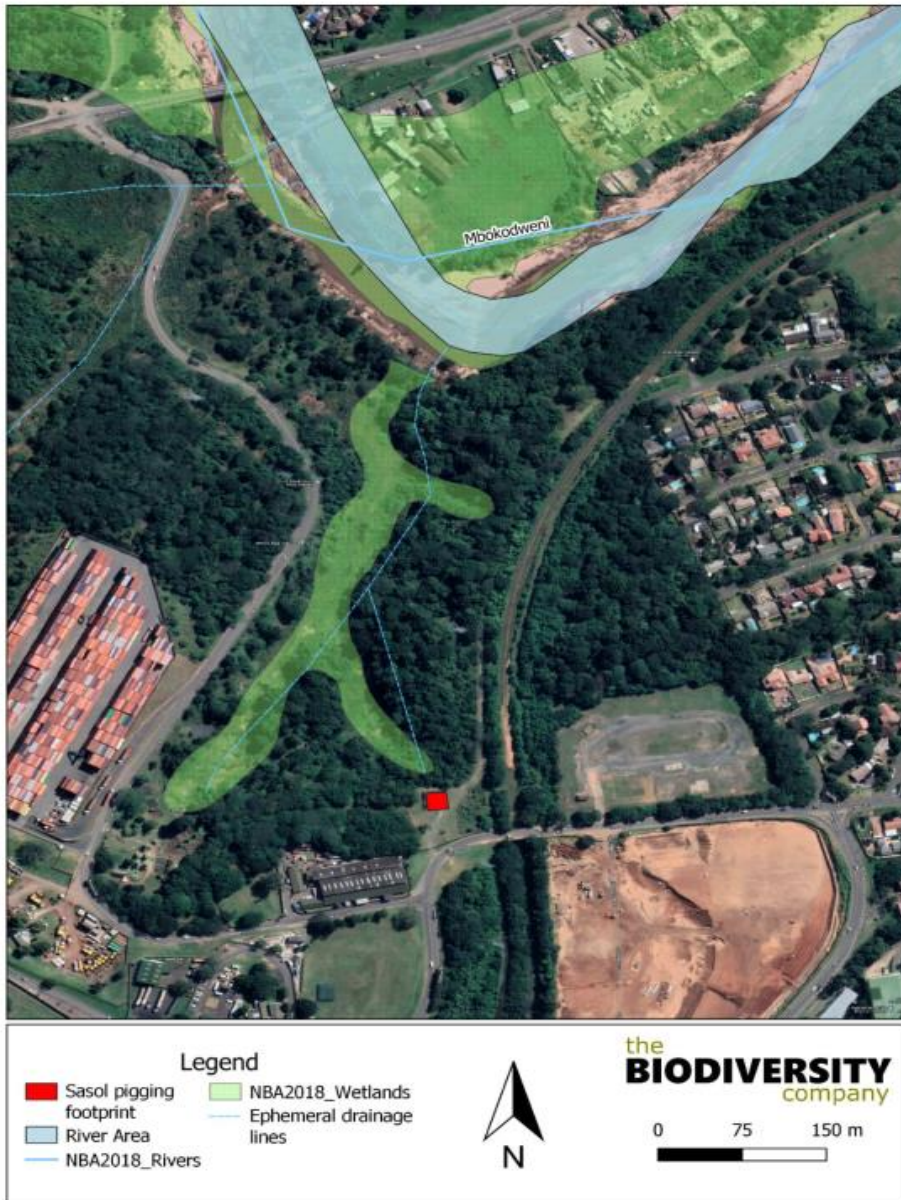


Figure 6-6 – Freshwater features associated with the proposed Project area



Figure 6-7 – Map illustrating an overview of the land-use within the local catchment of the Mbokodweni Estuary

6.2.3.2 DFFE Screening Tool

The Screening Tool has characterised the Aquatic Biodiversity Theme within the project footprint as Low as illustrated in **Figure 6-8**.



Figure 6-8 - Map of Aquatic Biodiversity Sensitivity

Source: DFFE Screening Report

6.2.3.3 Ecosystem Protection Level and Threat Status

The Project area was superimposed on the ecosystem protection level map and threat level map to assess the protection and threat status of the associated and potentially influenced aquatic ecosystems. The Project area does not directly intersect with an NFEPA River, however, the downstream Mbokodweni River would potentially be a receiving environment from the nearby drainage line associated with the Project footprint.

The aquatic ecosystems associated with the Project are rated as Poorly Protected. The Threat status of the rivers associated with the proposed Project is rated as Endangered (EN). It must be noted that the proposed Project is unlikely to impact on the downstream aquatic environment if all activities are restricted to the proposed Project footprint and the 'no-go' areas are adhered to.

6.2.3.4 Site Sensitivity Verification

A single dry season survey was conducted on the 15 June 2022. This survey was completed to support the Compliance Statement which was deemed necessary by the DFFE Screening Tool. As the site presented limited surface water and was characteristic of wetland features, a focus on habitat of the site and reached based assessments were conducted.

Figure 6-9 illustrate the freshwater features within the downstream reaches of the proposed Project site.



Figure 6-9 – Freshwater features downstream of the Project area

The results of the instream and riparian habitat assessment in the Mbokodweni River indicates a moderately modified state (class C). The modified state of the watercourse and associated catchment can be attributed to the modification of riparian habitat due to exotic vegetation encroachment, and indigenous vegetation clearing. Impacts to instream habitat included extensive solid waste, flow and channel modifications through instream impoundments and extensive instream sedimentation. Impacts to the riverbanks are evident from aerial imagery and comprise the habitat integrity of the reach. The aforementioned impacts together with the additional impacts such as water abstraction, flow modification, channel modification, etc. cumulatively resulted in deterioration of the riparian and instream habitat condition.

The level of impacts to the riparian and instream habitat condition determines the level of ecosystem functioning and capacity of a watercourse to provide ecosystem services. Therefore, the moderately modified status of the watercourse indicates that a loss and change of natural habitat and biota have occurred, but the basic ecosystem functions are still predominantly unchanged.

The proposed Project must prevent impacts to water quality and habitat condition in the vicinity of the Project footprint to avoid indirect impacts to the local drainage system which is ecologically interconnected with the downstream Mbokodweni River.

The DFFE Screening Tool has characterised the Aquatic Biodiversity theme within the Project footprint as Low. However, according to the Freshwater Ecology Compliance Statement, the downstream receiving environment is rated as Very High. According to the NBA (2018) dataset the Threat status of the rivers associated with the proposed project are rated as Endangered (EN).

The Ecological Sensitivity and Importance (EIS) are rated High and Very High respectively, with fish and invertebrates' sensitivity to changes in physico-chemical properties and velocity rated as "Very High". It was the specialist's opinion and supported by survey findings, which agrees with the Screening Tool to rate the aquatic sensitivity of the Project footprint as Low. Should all project

activities be restricted to the demarcated transformed area, it was the opinion of the specialist that there are no fatal flaws for the proposed activities.

There were no impacts on aquatic resources identified in the Freshwater Compliance Statement therefore will not be further assessed as part of the impact assessment.

6.2.4 HERITAGE AND PALEAONTOLOGY THEME

6.2.4.1 DFFE Screening Tool

The DFFE Screening Tool considers the proposed site for the Receiver Station to be of Low sensitivity in relation to the Archaeological and Cultural Heritage Theme and High sensitivity in relation to the Palaeontology Theme as illustrated in the **Figure 6-10** and **Figure 6-11**.



Figure 6-10 - Archaeological and Cultural Heritage Theme

Source: DFFE Screening Report



Figure 6-11 – Palaeontology Theme

Source: DFFE Screening Report

6.2.4.2 Site Sensitivity Verification

*This section is supplemented with information from the Heritage Assessment (Beyond Heritage, 2022) and included in **Appendix G.3** of this BAR.*

From a heritage perspective, the specialist recorded that the site is totally transformed, and no heritage resources were recorded. Regarding palaeontology, the SAHRA paleontological map of the study area is rated as High paleontological sensitivity. In addition, an independent study was conducted by Prof Marion Bamford (2022). Bamford (2022) concluded that it is unlikely that any fossils would be preserved in the disturbed areas, vegetated sands and overlying soils of the Umkwelane Formation (Maputaland Group) of the Quaternary. There is a very small chance that fossils may occur below ground so a Fossil Chance Find Protocol should be added to the Environmental Management Programme (EMPr).

The specialist concluded that the impact on heritage resources is considered to be Low and the project can be authorised provided that the recommendations in this report are adhered to and based on the South African Heritage Resource Authority (SAHRA) 's and AMAFA approval.

6.2.5 PLANT SPECIES THEME

The areas immediately adjacent to the current footprint are dominated by common lawn grasses such as *Pennisetum clandestinum* and *Sporobolus africanus*, while the more natural sections of the PAOI are denser and more supportive of numerous indigenous herb and shrub species, including *Celtis africana*, *Ficus burkei*, *Hibiscus surattensis* and *Monanthataxis caffra*. Portions of these areas are however impacted by several invasive species, including the aggressive *Lantana camara* and

Chromolaena odorata. Overall, 51 flora species were recorded which include 36 indigenous species and 15 exotics (of which 6 are listed Alien Invasive Plant (AIP) Species). Note that more flora species are likely to occur, and the list provided should only be considered representative of the most prevalent species within the PAOI.

No protected trees or SCC flora species were observed; however, it is suspected that these species may occur in certain undisturbed sections of the dense indigenous forest areas which must be considered as 'no go' areas.

6.2.6 TERRESTRIAL BIODIVERSITY THEME

6.2.6.1 DFFE Screening Tool

The DFFE Screening Tool indicates that the site falls within an area of Very High sensitivity in relation to the Terrestrial Biodiversity Theme due to the site being located entirely within a CBA: Irreplaceable, a Critically Endangered Ecosystem and overlaps with priority focus areas for expansion according to the NPAES (**Figure 6-12**).

The completion of the terrestrial biodiversity desktop and field studies disputes the Very High sensitivity presented by the screening tool report, as relevant to the proposed footprint areas. As discussed in the sections below, the proposed footprint area is transformed (and as such it is assigned a sensitivity rating of Very Low.

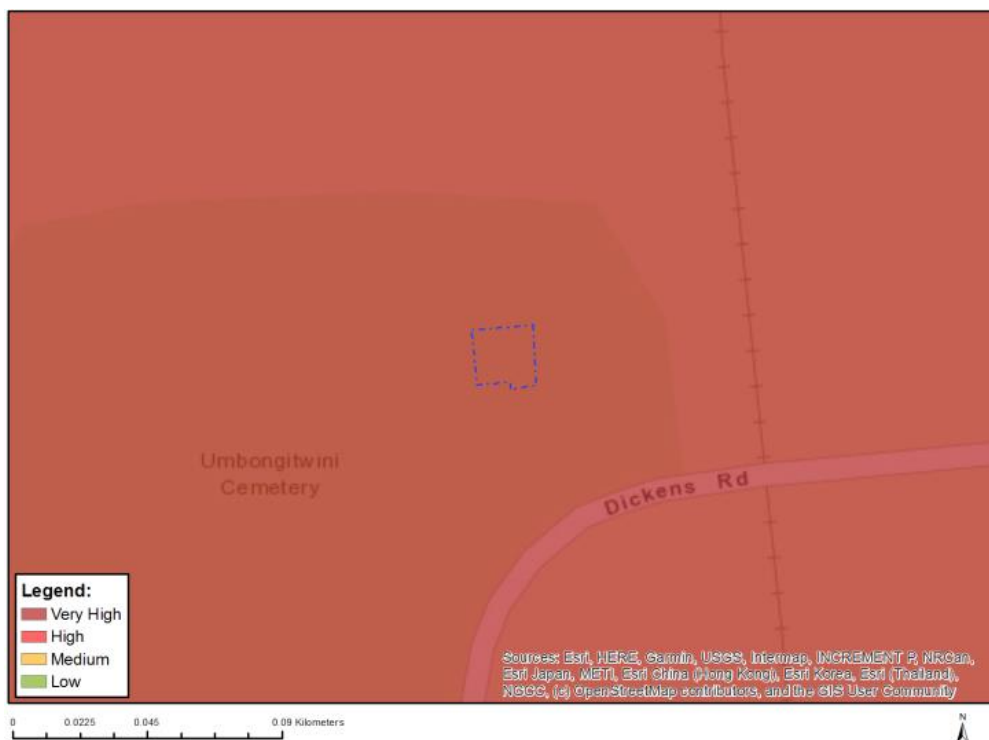


Figure 6-12 – Terrestrial Biodiveristy Theme Sensitivity

Source: DFFE Screening Report

The image below is drone footage of the greater PAOI, showing wetland features to the left, transformed areas to the right, and coastal forest in between. The Receiver Station will be located within the existing PRS footprint and will not extend into the forest and wetland areas.



Figure 6-13 – Drone footage of the PAOI, showing wetland features to the left, transformed areas to the right, and coastal forest in between

6.2.6.2 Site Sensitivity Verification

*This section is supplemented with information from the Terrestrial Ecology Compliance Statement (The Biodiversity Company, 2022) and included in **Appendix G.2** of this BAR.*

KZN Biodiversity Plan

The KwaZulu-Natal Biodiversity Plan classifies areas within the province on the basis of their contributions to reaching the conservation targets within the province. These areas are primarily classified as either CBAs or Ecological Support Areas (ESAs). CBAs are terrestrial areas of the landscape that need to be maintained in a natural or near-natural state to ensure the continued existence and healthy functioning of important species and ecosystems and the delivery of ecosystem services. Thus, if these areas are not maintained in a natural or near natural state then biodiversity targets cannot be met (SANBI, 2017).

ESAs are areas that are not essential for meeting biodiversity representation targets but play an important role in supporting the ecological functioning of ecosystems as well as adjacent CBAs, and/or in delivering ecosystem services that support socio-economic development (SANBI, 2017).

As shown in **Figure 6-14** and according to the KwaZulu-Natal Biodiversity Sector Plan, the larger Project Area of Influence (PAOI) overlaps with CBA: Irreplaceable areas. These high-level CBA sites represent areas that are irreplaceable, or near irreplaceable, for meeting biodiversity targets. There are no or very few other options for meeting biodiversity targets for the features associated with these areas (SANBI, 2017). Appropriate land-uses for these areas are generally limited to low-impact conservation and game farming activities.

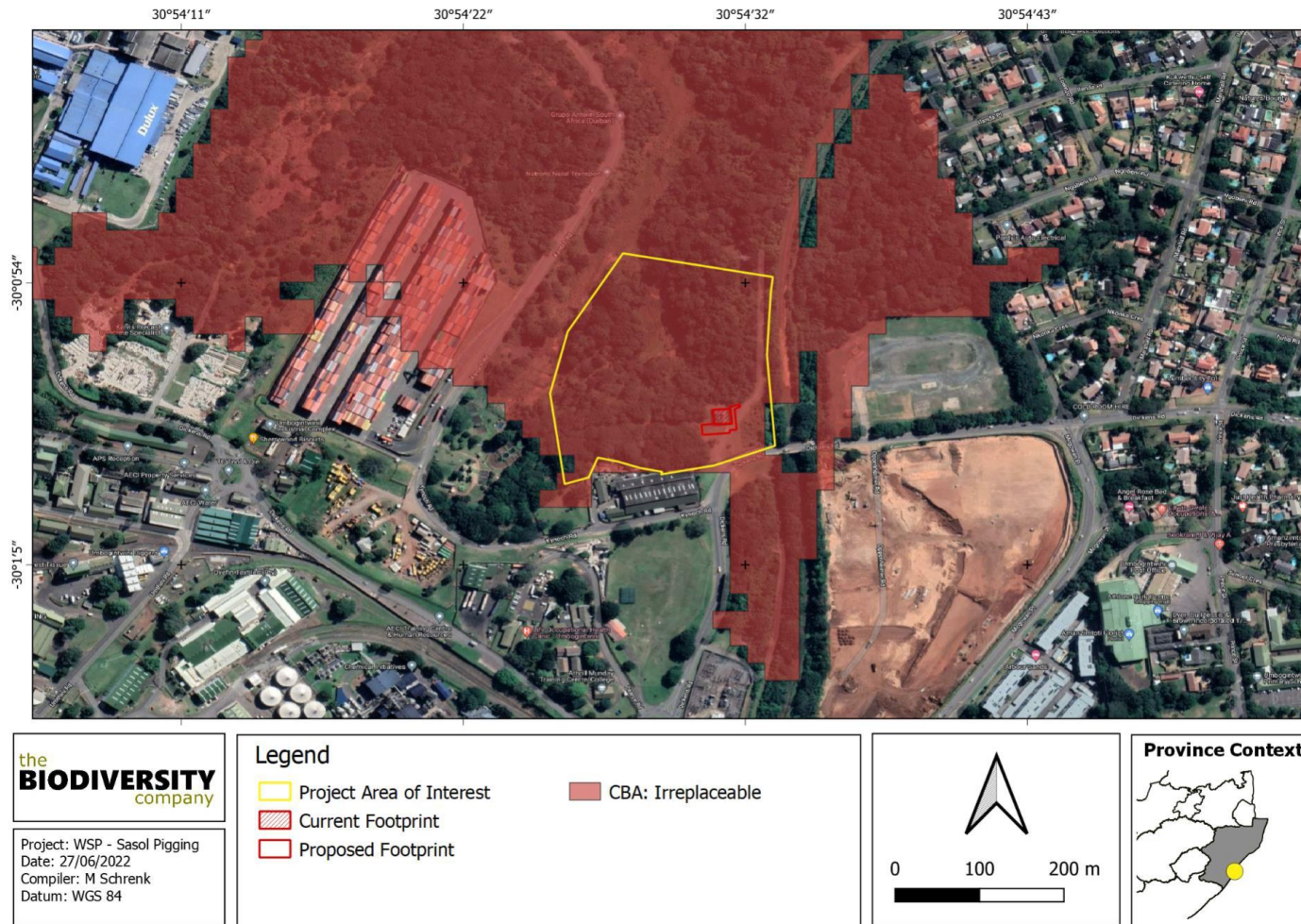


Figure 6-14 – Map presenting the Project Area of Interest superimposed on the KwaZulu-Natal Biodiversity Plan dataset

Ecosystem Threat Status

Ecosystem Threat Status (ETS) outlines the degree to which ecosystems are still intact or alternatively losing vital aspects of their structure, function, and composition, on which their ability to provide ecosystem services ultimately depends. Ecosystem types are categorised as Critically Endangered (CR), Endangered (EN), Vulnerable (VU) or Least Concern (LC), based on the proportion of each ecosystem type that remains in good or healthy ecological condition.

The PAOI was superimposed on the terrestrial ecosystem threat status database, and it falls across two ecosystem types, namely the 'EN' KwaZulu-Natal Coastal Belt Grassland and 'LC' Northern Coastal Forest.

Ecosystem Protection Level

Ecosystem Protection level (EPL) informs on whether ecosystems are adequately protected or under-protected. Ecosystem types are categorised as Not Protected (NP), Poorly Protected (PP), Moderately Protected (MP) or Well Protected (WP), based on the proportion of each ecosystem type that occurs within a protected area recognised in the Protected Areas Act. The PAOI was superimposed on the Ecosystem Protection Level map to assess the protection status of the local terrestrial ecosystem. Based on the dataset, the KwaZulu-Natal Coastal Belt Grassland ecosystem is rated as 'NP' and Northern Coastal Forest is rated as 'WP'. 'NP' systems have less than 5% of their biodiversity target included in one or more protected areas, and 'WP' systems have their full target included in one or more protected areas (SANBI, 2019).

National Protected Areas Expansion Strategy

The DFFE led the development of the National Protected Areas Expansion Strategy (NPAES) in consultation with the protected area agencies and other key private and public sector stakeholders. The need for the development of the NPAES was established in the National Biodiversity Framework in 2009. (DEA, 2016). South Africa's protected area network currently falls far short of representing all ecosystems and maintaining healthy functioning ecological processes. In this context, the goal of the NPAES is to achieve cost effective protected area expansion thus enabling better ecosystem representation, ecological sustainability, and resilience to climate change. A comprehensive set of priority areas was compiled based on the priorities identified by provincial and other agencies in their respective protected area expansion strategies. These focus areas are generally large, intact and unfragmented and are therefore of high importance for biodiversity, climate resilience and freshwater protection (DEA, 2016).

The PAOI overlaps with priority focus areas for expansion according to the 2017 NPAES dataset as illustrated in the figure below.

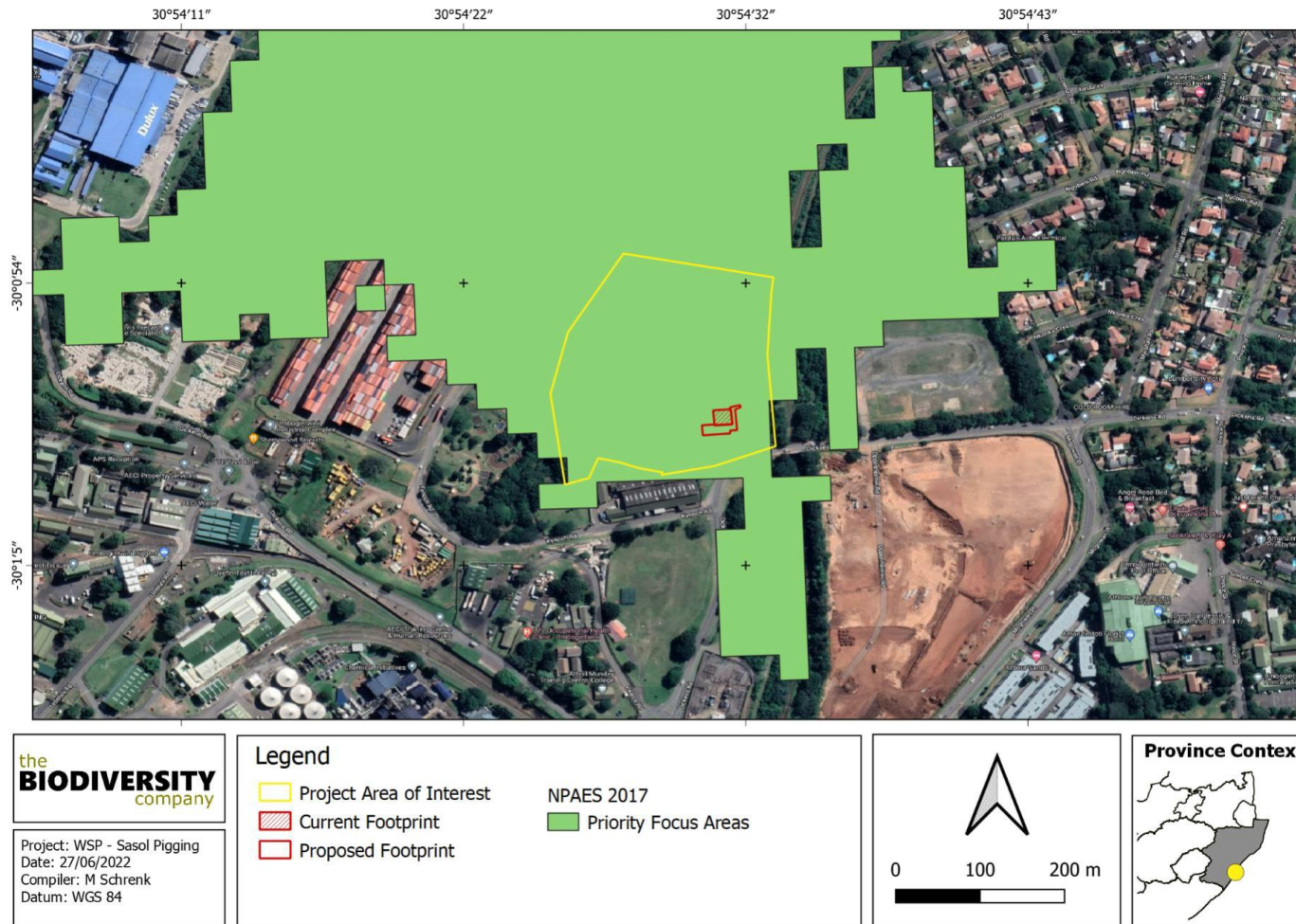


Figure 6-15 – Map presenting the PAOI superimposed on the NPAES dataset



D'MOSS

The D'MOSS is a system of open spaces of land and water that incorporates areas of high biodiversity value linked together in a viable network of open spaces. It is mapped by the Biodiversity Management Branch (BDM). Apart from contributing to the attainment of provincial and national biodiversity conservation targets, D'MOSS provides a range of ecosystem services to all residents of eThekweni, including the formation of soil, erosion control, water supply and regulation, climate regulation, cultural and recreational opportunities, raw materials for craft and building, food production, pollination, nutrient cycling and waste treatment. (Ethekewini, 2017)

The figure below shows that the PAOI intercepts with the D'MOSS dataset as the area maintains important functional ecosystems as well as physical links along the coast, connecting river catchments to marine sources of biodiversity.

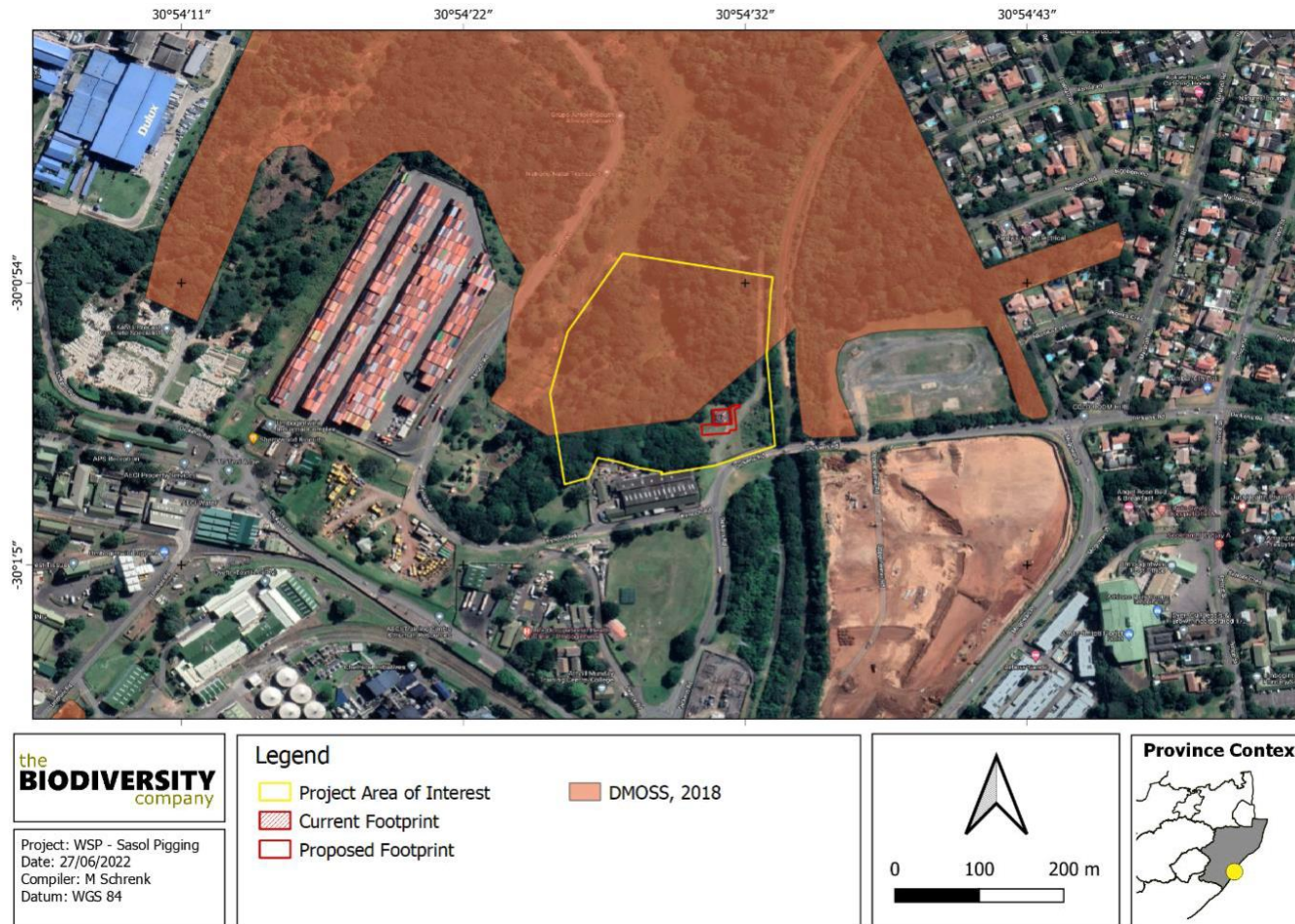


Figure 6-16 – Map presenting the Project Area of Interest superimposed on the 2018 D'MOSS dataset

6.3 SOCIO-ECONOMIC ENVIRONMENT

6.3.1 DEMOGRAPHICS

According to the eThekweni Municipality 2022/2023 Integrated Development Plan (IDP), the projected population total for 2023 is estimated at 4 095 412. This is an annual increase of 1.13%, based off the 2001 census data of 3.09 million residents of eThekweni (IDP, 2022/2023).

The IDP indicates a steady increase in population, with high birth and infant mortality rates and a low life expectancy, with the highest population of cohorts being in the 20-to-24-year age group (**Figure 6-17**). According to StatsSA Forecast for 2020, the age demographic within eThekweni comprise of Individuals aged between 0-14 at 25.28%, 15-34 years at 34.46%, 35 to 59 at 31% and those over 60 at 11%. Indicating a young population of 59.74% of the population below the age of 35. Whilst the economically active group of the population ranges between 15 to 59 years and comprise 65.37% of the population (IDP, 2022/2023).

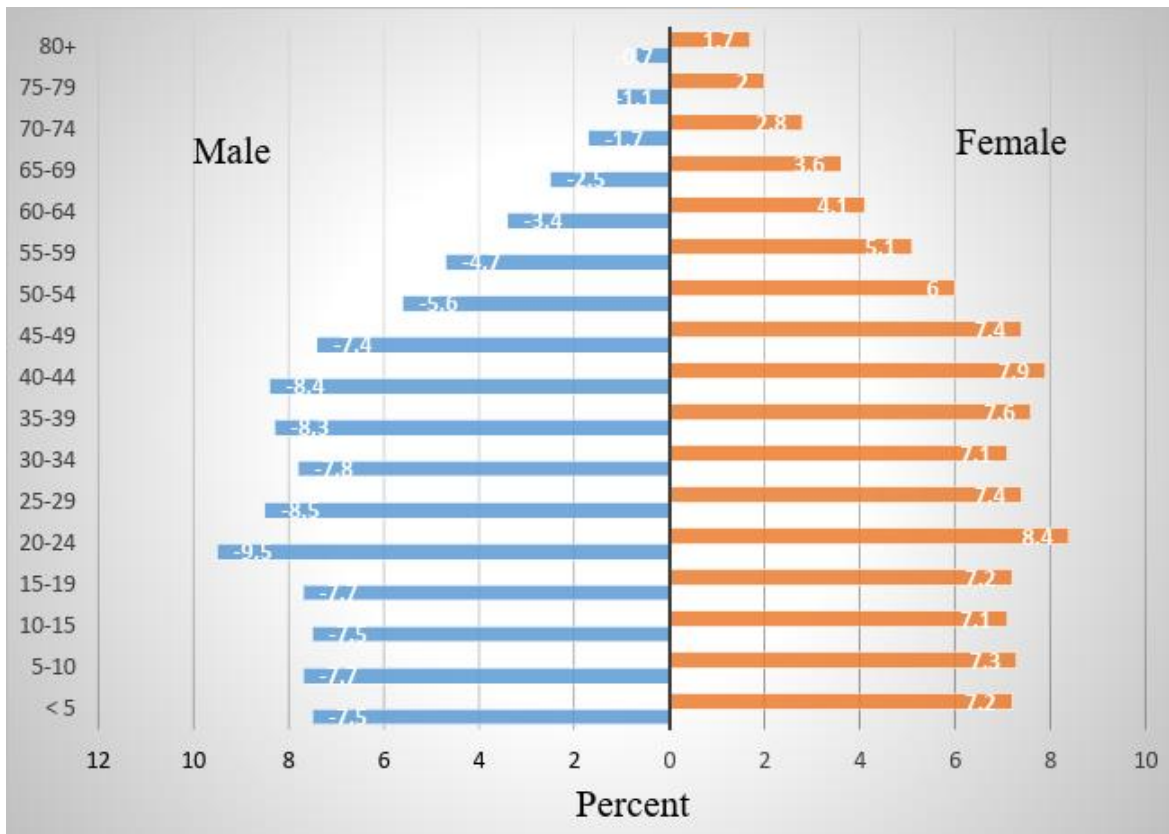


Figure 6-17 - eThekweni population pyramid (Source: Stats SA, 2021 - Population Estimates)

The municipality comprises 49.9% male and 50.1% female, with a ratio of 99 males per 100 females. The ethnic make-up of the municipality comprises of African (74%), Indian (17%), White (7%), Coloured (2%) and other (0,4%) (IDP, 2022/2023).

The education profile of the municipality indicates that 25% of the population has primary education, 26% of the population has secondary level education (matric), 7% has no schooling, whilst just 5%

of the population tertiary level education (IDP, 2022/2023). There's been a slight increase in the level of literacy between 2016 to 2020, from 88.1% to 90.7% respectively.

6.3.2 LOCAL AND REGIONAL CONTEXT

The eThekweni Municipality spans an area of 2 555 km², extending from Tongaat to the north, to Umkomaas in the South, with Cato ridge and the Indian Ocean coastline demarcating its western and eastern boundaries respectively (MSDF, 2022-2023).

The largest city in eThekweni Metropolitan Municipality is the city of Durban (eThekweni), and the third largest city in South Africa, owing to South Africa's busiest port and a high tourism income. The main economic sectors include: finance (22%); manufacturing (22%); community services (18%); trade (16%); transport (16%); construction (3%) and electricity (2%) (Local Government Handbook, 2016).

At the close of 2020, eThekweni contributed approximately 10.1% to the national Gross Domestic Product (GDP), only behind Tshwane (11% country GDP) and Johannesburg (15% of country's GDP) (IDP, 2022/2023).

The municipality is divided into four spatial regions (**Figure 6-18**); North, Central, South and Outer West, and represents 33% (1.15 million people), 34% (1.18 million people), 23% (760 000) and 11% (330 000) respectively (IDP, 2022/2023).

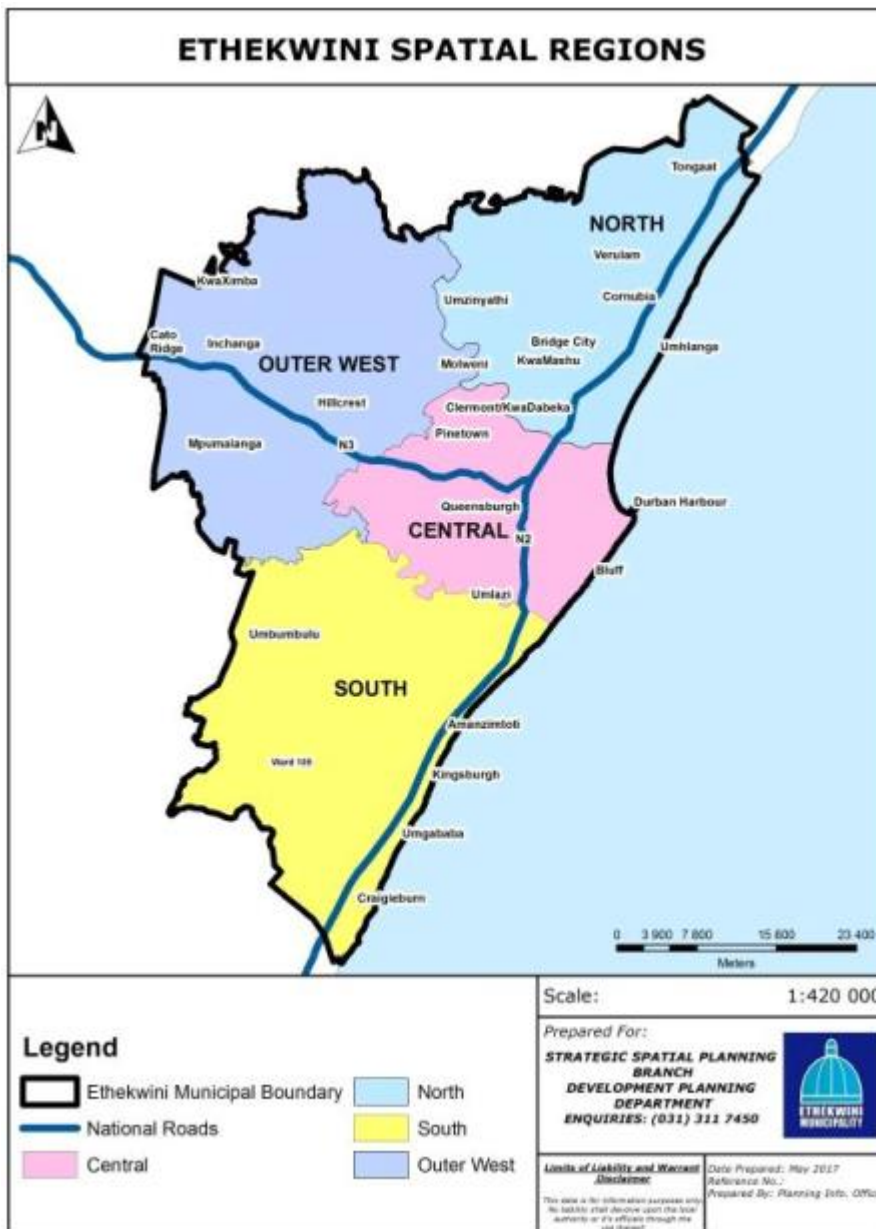


Figure 6-18 - eThekweni Spatial Regions (Source: Development, Planning, Environment & Management Unit; eThekweni Municipality)

The municipality accommodated a wide range of land uses including, formal, informal, urban and rural settlements, economic, transport, public and social infrastructure, agriculture and traditional settlement, and metropolitan open space systems (IDP, 2022/2023). About 68% of the municipality is considered rural, comprising of commercial farms and metropolitan open space (10% land extent), and geospatial features (hilly, rugged terrain, dispersed settlement, traditional dwellings and communal land under the Ingonyama Trust, encompassing 90% of rural land). The remaining 32% of land is dominated by residential, commercial and industrial land uses (MSDF, 2022/2023).

The eThekweni Municipality consists of a diverse society, which faces a variety of social, economic, environmental and governance challenges. eThekweni is characterised as having a growing economy and is the primary economic contributor (65.5%) to KZN's Gross Domestic Product (GDP). The eThekweni economy grew by 0.9% in 2016. eThekweni's economy is dominated by tertiary industries including contributions from the finance (20%), manufacturing (19%), community services (20%), trade (18%) transport (14%) and construction (5%) sectors. The production of fuel and petroleum are significant contributors to the manufacturing sector in the municipality (eThekweni, May 2012).

The eThekweni Municipality is bordered by iLembe district municipality to the north, Ugu district municipality to the south, and uMgungundlovu to the west, **Figure 6-19**.

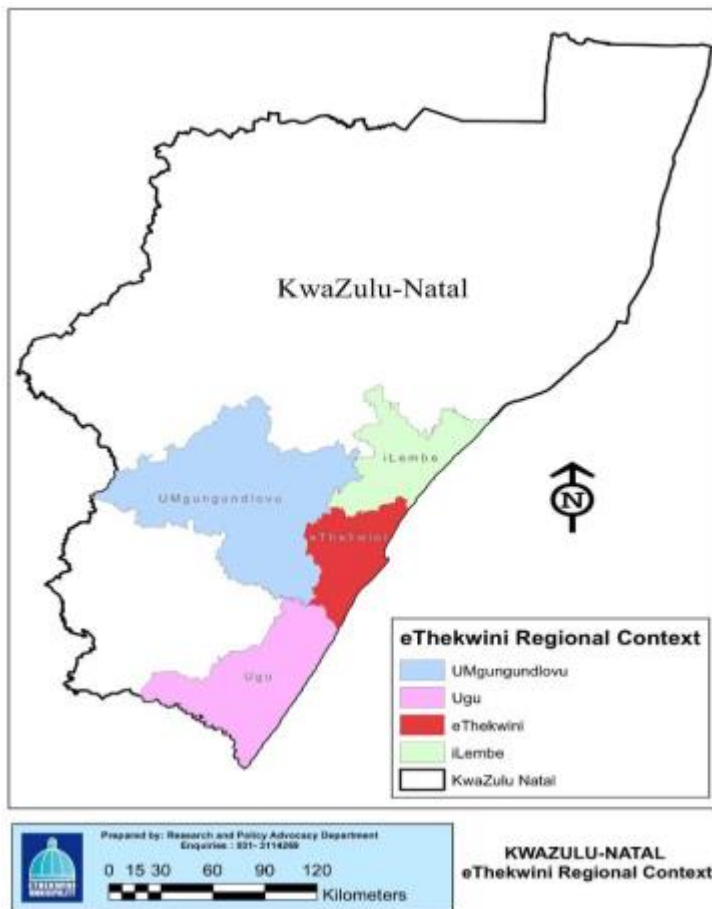


Figure 6-19 - eThekweni Municipality in regional Context (source: eThekweni MSDF 2022-2023)

6.3.3 SITE SPECIFIC CONTRIBUTION TO THE SOCIO-ECONOMICS OF THE AREA

The PRS currently employs people on a permanent basis. The number of construction staff to be employed by Sasol will be confirmed at a later stage.

7

ENVIRONMENTAL IMPACT ASSESSMENT



7 ENVIRONMENTAL IMPACT ASSESSMENT

This Chapter identifies the perceived environmental and social effects associated with the proposed Project. The assessment methodology is outlined in **Section 2.5**. The issues identified stem from those aspects presented in **Section 6** of this document as well as the Project description provided in **Section 3**.

The impact assessment in this section encompasses the geographical, physical, biological, social, economic, heritage and cultural aspects associated with the construction, operation and decommissioning phases of the proposed Project, in accordance with Appendix 1 of the EIA Regulations.

7.1 TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT

The Terrestrial Biodiversity Theme sensitivity as indicated by the DFFE Screening Tool, was derived to be Very High due to the CBA status of the area, the threatened ecosystem present, and the NPAES.

The extent of the PAOI that exists beyond the proposed footprint boundary represents functional indigenous coastal forest and wetland habitat, which is accurately listed as an Irreplaceable CBA and D'MOSS area by the KZN Conservation Plan. However, the portions of land within the proposed expansion footprint area are historically transformed and no longer be classified as functional CBA.

Since the remaining extent of the PAOI is classified as High sensitivity by the Terrestrial Biodiversity Assessment, the specialist recommended that the High Sensitivity area must be demarcated as 'no-go' areas and all activities must be confined within the transformed Low sensitivity areas.

Completion of the Terrestrial Biodiversity Assessment (**Appendix F.2**) led to a disputing of the Very High classification for the Terrestrial Biodiversity Theme sensitivity as allocated by the DFFE Screening Tool, as relevant to the proposed footprint area. This proposed footprint area has instead been assigned a Very Low sensitivity, because of the significant levels of environmental disturbance that have taken place within and immediately adjacent to the footprint area. It is noted that the remaining portions of the PAOI are assigned a High sensitivity due to the presence of functional CBA vegetation and the likely occurrence of several SCC and must therefore be demarcated as 'no-go' areas.

The focus of mitigation measures is to reduce the significance of potential impacts associated with the expansion and thereby to:

- Prevent the further loss and fragmentation of vegetation communities within the CBA areas in the vicinity of the PAOI;
- Reduce the negative fragmentation effects of the development and enable the safe movement of faunal species; and
- Prevent the direct and indirect loss and disturbance of floral and faunal species and communities (including any potential SCC that may occur within the immediate vicinity of the site).

Table 7-1 – Impact on CBA and NPAES areas outside of the expansion footprint

<p>Potential Impact: Impact on CBA and NPAES areas outside of the expansion footprint during the construction, operation and decommissioning phases.</p> <p>Construction and decommissioning activities extending outside of the disturbed Project Footprint</p>	Magnitude	Extent	Reversibility	Duration	Probability	Significance		Character
Without Mitigation	3	3	3	5	4	56	Moderate	(-)
With Mitigation	1	1	3	5	1	10	Very Low	(-)
Mitigation and Management Measures	<ul style="list-style-type: none"> ■ The High sensitivity areas delineated by the specialist (Figure 6-5) must be treated as ‘no-go’ areas for the proposed expansion i.e. the surrounding forest and wetland areas. ■ The expansion must be fully contained within the ‘Very Low’ sensitivity areas – including all associated construction phase activities such as laydown, concrete mixing, and the placement of temporary ablation facilities. Any materials may not be stored for extended periods of time and must be removed from the area once the construction phase has been concluded. ■ Areas to be developed/disturbed must be specifically demarcated so that during the construction phase, only the demarcated areas are to be impacted upon. ■ All vehicles and personnel must make use of the existing roads and walking paths, especially construction/operational vehicles. ■ Areas that are denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion during flood events and strong winds and to support the adjacent habitat. This will also reduce the likelihood of encroachment by more alien invasive plant species. ■ All disturbed areas are to be rehabilitated and appropriately landscaped. Rehabilitation of the disturbed areas existing in the PAOI must be made a priority. Topsoil must also be utilised, and any disturbed area must be re-vegetated with plant and grass species which are endemic to the project area vegetation type. ■ Progressive rehabilitation of cleared areas will enable topsoil to be returned more rapidly, thus ensuring more recruitment from the existing seedbank. ■ Leaking equipment and vehicles must be repaired immediately or be removed from project area to facilitate repair. ■ Dust-reducing mitigation measures must be put in place and be strictly adhered to, particularly for all dirt roads and any earth dumps. ■ This includes the wetting of exposed soft soil surfaces and not conducting activities on windy days which will increase the likelihood of dust being generated. Only environmentally friendly suppressants may be used to 							

	<p>avoid the pollution of water sources. Speed limits must be put in place to reduce erosion, and speed bumps should also be constructed.</p> <ul style="list-style-type: none"> ■ Contractors and employees must all undergo a strict environmental induction and be made aware of the sensitive habitats within and nearby to the project area. ■ Signs must be erected to indicate the importance and sensitivity of surrounding areas and their functions. This especially pertains to the functional coastal forest and wetland. ■ Waste management must be a priority and all waste must be collected and stored adequately. It is recommended that all waste be removed from site on a weekly basis to prevent rodents and pests entering the site. ■ Any litter, spills, fuels, chemical and human waste in and around the project area must be removed and disposed of timeously and responsibly. ■ The Contractor should supply sealable and properly marked domestic waste collection bins and all solid waste collected shall be disposed of at a licensed disposal facility. ■ Under no circumstances may domestic waste be burned on site.
--	--

Table 7-2 – Loss of indigenous flora and SCC outside the expansion footprint

Potential Impact: Loss of indigenous flora and SCC outside the expansion footprint during the construction, operation and decommissioning phases	Magnitude	Extent	Reversibility	Duration	Probability	Significance		Character
Without Mitigation	3	3	3	5	5	70	High	(-)
With Mitigation	1	2	3	5	2	22	Low	(-)
Mitigation and Management Measures	<ul style="list-style-type: none"> ■ Any individual protected plant that may be observed needs a relocation or destruction permit for any individual that may be removed or destroyed as a result of the activities. Preferably, the plants should be relocated to an area that will not be impacted on by future activities. ■ All personnel are to undergo Environmental Awareness Training. A signed register of attendance must be kept for proof. Discussions are required on all sensitive environmental receptors within the project area to inform contractors and site staff of the presence of sensitive habitat features, such as natural forest, and management requirements in line with the EA and within the EMPr. ■ A qualified environmental control officer must be on site when clearing begins. The area must be walked though prior to construction to ensure that no faunal species remain in the habitat and get killed. Should animals not 							

	move out of the area on their own, relevant specialists must be contacted to advise on how the species can be relocated.
--	--

Table 7-3 – Impacts to fauna due to construction, operation, and decommissioning activities outside the expansion footprint

Potential Impact:	Magnitude	Extent	Reversibility	Duration	Probability		Significance	Character
Hinderance to faunal movement Loss of SCC outside the expansion footprint in areas of High sensitivity Killing and/or hunting of animals by Contractor personnel								
Without Mitigation	3	3	3	5	5	70	High	(-)
With Mitigation	1	2	3	5	2	22	Low	(-)
Mitigation and Management Measures	<ul style="list-style-type: none"> ■ All personnel are to undergo Environmental Awareness Training. A signed register of attendance must be kept for proof. Discussions are required on all sensitive environmental receptors within the project area to inform contractors and site staff of the presence of sensitive habitat features, such as natural forest, and management requirements in line with the EA and within the EMPr. ■ No trapping, killing, or poisoning of any wildlife is to be allowed. Signs must be put up to enforce this. These actions are illegal in terms of provincial environmental legislation. ■ A qualified environmental control officer must be on site when clearing begins. The area must be walked though prior to construction to ensure that no faunal species remain in the habitat and get killed. Should animals not move out of the area on their own, relevant specialists must be contacted to advise on how the species can be relocated. ■ The trenches must be excavated in a progressive manner in order to allow burrowing animals time to move off and to prevent trapping. Should the holes remain open overnight they must be covered temporarily to ensure no fauna species fall in. ■ Should any SCC fauna be observed nesting within the proposed footprint area before or during construction, all activities must cease immediately. A relevant faunal specialist must be consulted in order to facilitate the capture or removal of any SCC animals. ■ The duration of the construction should be minimized to as short a term as possible, to reduce the period of disturbance on fauna. ■ Outside lighting should be designed and limited to minimize impacts on fauna. Fluorescent and mercury vapor lighting should be avoided, and sodium vapor (yellow) lights should be used wherever possible. 							

	<ul style="list-style-type: none"> ■ All construction and maintenance motor vehicle operators should undergo an environmental induction that includes instruction on the need to comply with speed limits, to respect all forms of wildlife. ■ Speed limits must be enforced to ensure that road killings and erosion is limited. Speed bumps should be built to force slow speeds. ■ Noise must be kept to a minimum during the evenings/ at night to minimize all possible disturbances to amphibian species and nocturnal mammals and birds. ■ Schedule activities and operations during the least sensitive periods, to avoid migration, nesting, and breeding seasons as far as possible. ■ Any significant heat generated from any source must be monitored to ensure that it does not negatively affect the local fauna. ■ Any indigenous woody material that is removed during construction can be shredded and used in conjunction with the topsoil to augment soil moisture and prevent erosion. Large, wooded stumps or branches may be used to enhance the local habitat features and encourage herpetofauna.
--	---

Table 7-4 – Proliferation of alien invasive species during construction, operation and decommissioning

Potential Impact: Proliferation of alien invasive species during construction and operation	Magnitude	Extent	Reversibility	Duration	Probability	Significance		Character
Without Mitigation	3	2	3	5	4	52	Moderate	(-)
With Mitigation	2	1	3	2	3	24	Low	(-)
Mitigation and Management Measures	<ul style="list-style-type: none"> ■ No plant species whether indigenous or exotic may be brought into/taken from the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants. ■ The implementation of an Alien Invasive Plant management plan is very important, especially because of the invasive species identified on site which, if left unchecked, will continue to grow and spread prolifically leading to further and more significant deterioration to the health of the natural environment within and nearby to the footprint area. The plan must especially pertain to any recently cleared and changed areas. ■ The footprint area of the construction should be kept to a minimum. The footprint area must be clearly demarcated to avoid unnecessary disturbances to adjacent areas. Road footprints must be kept to prescribed widths. 							

	<ul style="list-style-type: none"> ■ A pest control plan must be put in place and implemented; it is imperative that poisons not be used. ■ It is recommended that all waste be removed from site on a weekly basis to prevent rodents and pests from entering the site and proliferating. ■ All disturbed areas are to be rehabilitated and appropriately landscaped. Rehabilitation of the disturbed areas existing in the PAOI must be made a priority. Topsoil must also be utilised, and any disturbed area must be re-vegetated with plant and grass species which are endemic to the project area vegetation type. ■ Progressive rehabilitation of cleared areas will enable topsoil to be returned more rapidly, thus ensuring more recruitment from the existing seedbank.
--	---

7.2 ARCHAEOLOGICAL, CULTURAL HERITAGE AND PALAEOONTOLOGICAL IMPACT ASSESSMENT

Due to the lack of any significant heritage finds in the Project footprint, there will be no impact to known heritage resources. Any additional effects to subsurface heritage resources can be successfully mitigated by implementing a chance find procedure. Monitoring procedures and management guidelines outlined in the table below will ensure that no potential subsurface heritage resources will be negatively impacted on.

Table 7-5 – Potential removal and destruction of archaeological and paleontological material or objects

Potential Impact: Removal and destruction of archaeological and paleontological material or objects during construction and decommissioning	Magnitude	Extent	Reversibility	Duration	Probability	Significance	Character	
Without Mitigation	2	2	5	5	2	28	Low	(-)
With Mitigation	2	1	3	2	1	8	Very Low	(-)
Mitigation and Management Measures	<ul style="list-style-type: none"> ■ Implementation of the Chance Find Procedure for the proposed Project as below: <ul style="list-style-type: none"> • If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. • It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area. 							

	<ul style="list-style-type: none"> The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA or AMAFA.
--	---

7.3 SOCIAL IMPACT ASSESSMENT

Due to the nature and confined extent of the proposed Project, the positive impacts associated with employment opportunities and expenditure during the construction and operational phases are considered to be moderate in significance.

- Impacts from expenditure and employment during the construction, operation and decommissioning of the Project (**Table 7-6**).
- Impacts on surrounding businesses during construction (**Table 7-7**).
- Impact of noise from construction and decommissioning activities (**Table 7-8**)

Table 7-6 – Impacts of expenditure and employment during the construction, operation and decommissioning phases of the Project

Potential Impact: Impacts of expenditure and employment during the construction, operation and decommissioning phases of the Project	Magnitude	Extent	Reversibility	Duration	Probability	Significance	Character
Without Mitigation	2	2	1	4	4	36	Moderate (+)
With Mitigation	2	2	1	4	5	45	Moderate (+)
Mitigation and Management Measures	<ul style="list-style-type: none"> Using local sub-contractors where possible and requiring that contractors from outside the local area that tender also meet targets for how many locals are given employment. Exploring ways to enhance local community benefits with a focus on broad-based BEE and preferential procurement. 						

Table 7-7 – Disturbance to surrounding businesses during the construction phase

Potential Impact: Disturbance to surrounding businesses during construction	Magnitude	Extent	Reversibility	Duration	Probability	Significance	Character
Without Mitigation	2	3	3	4	5	60	Moderate (-)
With Mitigation	1	2	3	4	3	30	Low (-)

Mitigation and Management Measures	<ul style="list-style-type: none"> ■ No construction workers, except for security personnel, should be allowed to stay on the site overnight. ■ The adjacent landowners should be able to contact the site manager to report any issues which they may have. The site manager should be stationed within the area and should therefore be available on hand to deal with and address any concerns which may be raised. ■ A complaints register should be available on site to any individual who may have a particular complaint with regards to the construction or operations processes. ■ The applicant should develop a Code of Conduct for the project. The Code should identify what types of behaviour and activities by workers are not permitted in agreement with surrounding landowners and land managers. ■ The movement of workers on and off the site should be closely managed and monitored by the contractors. In this regard the contractors should be responsible for making the necessary arrangements for transporting workers to and from site on a daily basis. ■ The EMPr must outline procedures for managing and storing of waste on site.
------------------------------------	--

Noise levels during the construction phase will be absorbed by the existing noise climate, minimising the potential impact the noise could have on the surrounding environment. Owing to the transient nature of this impact, the industrial nature and existing noise levels at and surrounding the site, this impact is of low significance during construction and decommissioning phases and negligible during operation.

Table 7-8 – Impact of noise from construction and decommissioning activities

Potential Impact: Potential noise impacts (construction and decommissioning activities)	Magnitude	Extent	Reversibility	Duration	Probability	Significance		Character
Without Mitigation	2	2	3	2	4	36	Moderate	(-)
With Mitigation	1	1	3	2	4	28	Low	(-)
Mitigation and Management Measures	<ul style="list-style-type: none"> ■ Maintain vehicles and machinery in good working order as per the equipment manufacturer. ■ Equipment fitted with noise reduction components (mufflers and silencers) should be used where possible. ■ Equipment with a lower noise output should be selected where practical (e.g., electronic powered equipment typically has lower noise levels than equivalent diesel equipment). ■ Investigate all complaints or observations of excessive noise and assess possibilities for mitigation. ■ Notify neighbouring businesses on the commencement of construction activities. 							

	<ul style="list-style-type: none"> ■ Avoid noisy activities at night-time and outside of normal weekend working hours where possible. ■ Employees / contractors are to be provided with appropriate hearing protection when undertaking work in noisy environments.
--	---

7.4 CUMULATIVE IMPACTS

The only cumulative impacts identified for the proposed Project are those associated with Terrestrial Biodiversity and Palaeontology as discussed in greater detail in the sections below.

7.4.1 TERRESTRIAL BIODIVERSITY

The location of the Project area within an existing site means that several significant negative impacts have already been exerted on the receiving environment. These include:

- Historic land modification and associated transformation of CBA within the PAOI;
 - The original pipeline intersects the adjacent High sensitivity forest areas (**Figure 4-1**).
 - The PRS site is hardened and the areas adjacent to the PRS have been grassed with no evidence of indigenous plant species occurring within the site for the receiver station and the adjacent Low sensitivity areas.
- Air, water and noise pollution;
- Invasive Alien Plants and weeds; and
- Human and vehicle ingress and the associated disturbances.

The proposed Project will not exacerbate the above impacts as the Receiver Station will be located on the already disturbed footprint associated with the existing PRS therefore there will be no additional land modification, air, water and noise pollution and human and vehicle ingress as a result of the proposed Project.

The cumulative impacts identified for the proposed Project include:

- Loss of CBA and NPAES areas outside of the expansion footprint during the construction, operation and decommissioning phases.
- Loss of floral and faunal SCC outside of the expansion footprint.
- Loss of functional faunal habitats outside of the expansion footprint.

Project related activities will be confined to the existing and disturbed footprint of the PRS and therefore the cumulative impact on Terrestrial Biodiversity will be Very Low in significance.

Table 7-9 – Cumulative Impact on Terrestrial Biodiversity

Potential Impact: Loss of CBA and NPAES areas outside of the expansion footprint during the construction, operation and decommissioning phases. Loss of floral and faunal SCC Loss of functional faunal habitats	Magnitude	Extent	Reversibility	Duration	Probability		Significance	Character
Without Mitigation	3	3	3	5	4	56	Moderate	(-)
With Mitigation	1	1	3	5	1	10	Very Low	(-)
Mitigation and Management Measures	<ul style="list-style-type: none"> Mitigation as included in Section 7.1 of this Report. 							

Apart from the negative identified impacts as listed above, the Project will also contribute positively to the cumulative control of Alien Invasive Species within the larger PAOI.

Table 7-10 – Impacts of the proposed Project contributing to the Control of Alien Invasive Vegetation and Fauna within the PAOI

Potential Impact: Impacts of the proposed Project contributing to the Control of Alien Invasive Vegetation and Fauna within the PAOI	Magnitude	Extent	Reversibility	Duration	Probability		Significance	Character
Without Mitigation	2	2	1	4	4	36	Moderate	(+)
With Mitigation	2	2	1	4	5	45	Moderate	(+)
Mitigation and Management Measures	<ul style="list-style-type: none"> The implementation of an Alien Invasive Plant management plan is very important, especially because of the invasive species identified on site which, if left unchecked, will continue to grow and spread prolifically leading to further and more significant deterioration to the health of the natural environment within and nearby to the footprint area. The plan must especially pertain to the Project footprint area. The footprint area of the construction should be kept to a minimum. The footprint area must be clearly demarcated to avoid unnecessary disturbances to adjacent areas. Road footprints must be kept to prescribed widths. It is recommended that all waste be removed from site on a weekly basis to prevent rodents and pests from entering the site and proliferating. 							

7.4.2 PALAEONTOLOGY

According to the DFFE Screening Tool, the general area in which the proposed Project is situated, is considered Very High Sensitivity for the Palaeontology Theme. This aligns with the SAHRA Palaeontological Map which indicates that the general area is of High Palaeontological sensitivity.

The findings of an independent study conducted by Professor Marion Bamford in 2022 which revealed that it is unlikely that any fossils would be preserved in the disturbed areas however there is still a small chance that fossils may occur below ground.

This indicates that the proposed Project, even though it is located on a disturbed site, still has the potential to impact negatively on the Paleontological nature of the site.

Table 7-11 – Cumulative Impact on Palaeontology

Potential Impact: Cumulative Impact on Palaeontology	Magnitude	Extent	Reversibility	Duration	Probability		Significance	Character
Without Mitigation	3	3	3	5	4	56	Moderate	(-)
With Mitigation	1	1	3	5	1	10	Very Low	(-)

8

ENVIRONMENTAL IMPACT STATEMENT



8 ENVIRONMENTAL IMPACT STATEMENT

The essence of any impact assessment process is aimed at ensuring informed decision-making, environmental accountability, and to assist in achieving environmentally sound and sustainable development. In terms of NEMA, the commitment to sustainable development is evident in the provision that “*development must be socially, environmentally and economically sustainable.... and requires the consideration of all relevant factors...*”. NEMA also imposes a duty of care, which places an obligation on any person who has caused, is causing, or is likely to cause damage to the environment to take reasonable steps to prevent such damage. In terms of NEMA’s preventative principle, potentially negative impacts on the environment and on people’s environmental rights (in terms of the Constitution of the Republic of South Africa, Act No. 108 of 1996) should be anticipated and prevented, and where they cannot be prevented altogether, they must be minimised and remedied in terms of “reasonable measures”.

In assessing the environmental feasibility of the proposed construction, operation and decommissioning of the Project, the requirements of all relevant legislation have been considered. The identification and development of appropriate mitigation measures that should be implemented to minimise potentially significant impacts associated with the Project, has been informed by best practice principles, past experience, and the relevant legislation (where applicable).

Potential impacts associated with the proposed Project have been assessed and the significance of these evaluated with consideration of proposed mitigation measures. Due to the footprint and surrounding areas of the Receiver Station being greatly transformed and containing hardstanding surfaces, a lack of suitable environmental features exist within the expansion footprint, however High sensitivity features exist immediately adjacent to the Project footprint therefore these were also assessed in **Section 7**.

Potential overall negative impacts associated with the proposed Project and associated development footprint were considered to be of low significance post mitigation provided that the demarcated expansion footprint including the temporary laydown area, is adhered to. Furthermore, the High sensitivity areas i.e. the forest and wetland area must be considered as ‘no go’ areas and construction activities must not extend into these areas. The low significance of potential impacts was substantiated on the premise that EMPr measures would be implemented. Mitigation measures have been developed where applicable for the above aspects and are presented within the EMPr (**Appendix H**). It is imperative that all impact mitigation recommendations contained in the EMPr, of which the environmental impact assessment took cognisance, are legally enforced.

Positive impacts to the social-economic environment were also identified. The most significant positive impact identified, is the improved efficiency and functioning of the SDP following the inspection and cleaning activities associated with the Receiver Station.

The BAR will be subject to public review, which will be undertaken according to the requirements of NEMA with every effort made to include representatives of all stakeholders within the process. The BAR will be updated and finalised taking into consideration all comments received during the public review period before being submitted to the CA for consideration.



8.1 SPECIALIST CONCLUSIONS

8.1.1 TERRESTRIAL ECOLOGY

The completion of the terrestrial biodiversity desktop and field studies disputes the ‘Very High’ sensitivity presented by the DFFE Screening Tool, as relevant to the proposed footprint areas.

The proposed footprint area is largely degraded and as such it is assigned a sensitivity rating of ‘Very Low’. The DFFE Screening Tool classified the animal species theme sensitivity as being of a ‘High’ sensitivity, and the plant species theme as ‘Medium’. Following the field survey findings, the specialist concluded that both the animal and plant species themes should retain their respective ratings for the extended PAOI outside the expansion footprint. This is due to the fact that the occurrence of sensitive SCC is considered likely within the coastal forest habitat as it may be classified as a functional ecosystem. However, within the Project footprint area the sensitivity ratings are considered to be Very Low.

8.1.2 AQUATIC ECOLOGY

It is the specialist’s opinion and supported by survey findings as contained within the Freshwater Ecology Compliance Statement, which agrees with the DFFE Screening Tool to rate the aquatic sensitivity of the Project footprint as “Low”. The specialist concluded that if all activities remain within the demarcated expansion footprint then the Project can proceed as proposed and there would be no fatal flaws associated with the proposed activities.

8.1.3 HERITAGE AND PALAEOLOGY

The specialist found that the study area and surrounds is generally flat without any major topographical features like pans or rocky outcrops that would be focal points for heritage sites. Furthermore, the site is transformed through infrastructure development and no heritage resources were recorded. According to the SAHRA Palaeontological sensitivity map the study area is of high paleontological sensitivity and an independent assessment was conducted by Prof Marion Bamford for this aspect. Bamford (2022) concluded that there is a very small chance that fossils may occur below ground so a Fossil Chance Find Protocol should be added to the EMPr.

The impact on heritage resources is considered to be low and the project can be authorised provided that the recommendations in this report are adhered to and based on the South African Heritage Resource Authority (SAHRA) ’s and AMAFA approval.

8.2 IMPACT SUMMARY

A summary of the identified impacts and corresponding significance ratings for the proposed Facility is provided in **Table 8-1** below.

Table 8-1 – Impact Summary

Aspect	Impact Description	Phase	Without Mitigation		With Mitigation	
Terrestrial Biodiversity	Impact on CBA and NPAES areas outside of the expansion footprint	C/O/D	56	Moderate	10	Very Low

Aspect	Impact Description	Phase	Without Mitigation		With Mitigation	
	Loss of indigenous flora and SCC outside the expansion footprint	C/O/D	70	High	22	Low
	Impacts to fauna due to construction, operation, and decommissioning activities outside the expansion footprint	C/O/D	70	High	22	Low
	Proliferation of alien invasive species during construction, operation and decommissioning	C/O/D	52	Moderate	24	Low
Archaeology and Palaeontology	Potential removal and destruction of archaeological and paleontological material or objects	C/D	28	Low	8	Very Low
Social	Impacts from expenditure and employment during the construction, operation and decommissioning of the Project	C/O/D	36	Moderate	45	Moderate
	Disturbance to surrounding businesses during the construction phase	C	60	Moderate	30	Low
	Impact of noise from construction and decommissioning activities	C/D	36	Moderate	28	Low
Cumulative Impact Assessment	Terrestrial Biodiversity	C/O/D	56	Moderate	10	Very Low
Cumulative Impact Assessment	Impacts of the proposed Project contributing to the Control of Alien Invasive Vegetation and Fauna within the PAOI	C/O/D	36	Moderate	45	Moderate
Cumulative Impact Assessment	Cumulative Impact on Palaeontology	C/O/D	56	Moderate	10	Very Low

8.3 CONDITIONS AND RECOMMENDATIONS

The following key aspects are recommended to be included as conditions of authorisation:

- The layouts submitted in the Draft BAR are not finalised. The final layouts are to be submitted to the EDTEA for approval prior to construction;

- The site-specific EMPr submitted in the Draft BAR is to be approved. The EMPr is to be updated to include the final layout map once finalised and approved by EDTEA;
- The EMPr and BAR mitigation measures must be adhered to;
- The final EMPr must form part of all contractual documents with contractors during construction and operational phases of the project. Furthermore, a dedicated Environmental Control Officer (ECO) must be appointed to ensure compliance to all EA conditions and EMPr commitments throughout the construction phase, with fortnightly inspections and monthly reporting to EDTEA.

The following specialist recommendations have been made in respect of the Project:

- The adjacent forest and wetland areas must be considered as 'no go' areas and any construction related activities must not encroach into these areas (**Figure 8-1**).
- The Chance Find Protocol must be implemented in the event of the discovery of a Heritage Resource.

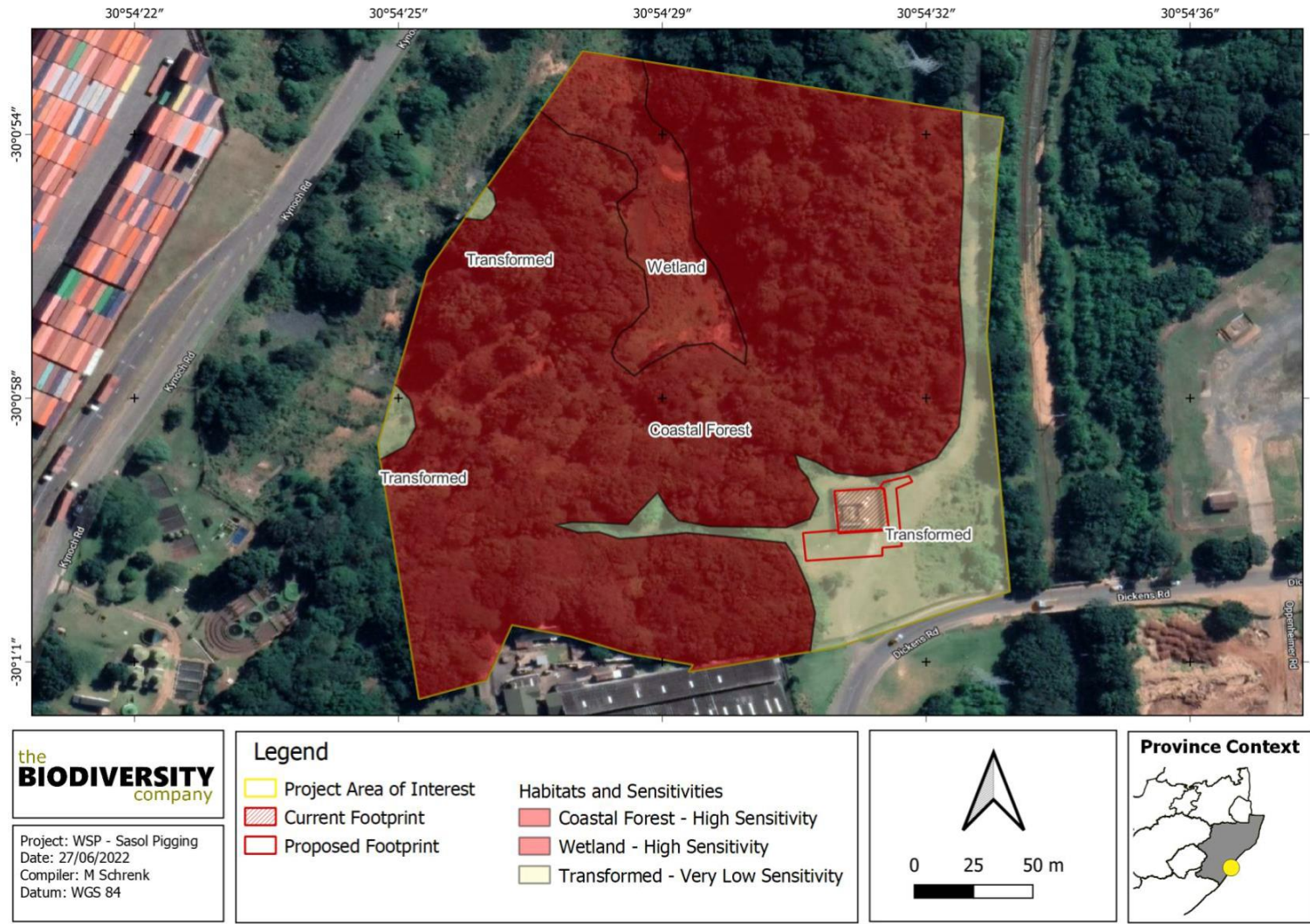


Figure 8-1 – Map indicating the Project site sensitivity and the ‘no-go’ areas

9

CONCLUSION AND WAY FORWARD



9 CONCLUSION AND WAY FORWARD

The overall objective of the BA is to provide sufficient information to enable informed decision-making by the competent authorities. This was undertaken through consideration of the proposed project components, identification of the aspects and sources of potential impacts and subsequent provision of mitigation measures.

It is the opinion of WSP that the information contained in this document (read in conjunction with the EMPr) is sufficient for EDTEA to make an informed decision for the environmental authorisation being applied for in respect of this Project.

Mitigation measures have been developed, where applicable, for the above aspects and are presented within the EMPr. It is imperative that all impact mitigation recommendations contained in the EMPr, of which the environmental impact assessment took cognisance, are legally enforced.

Considering the findings of the respective studies, no fatal flaws were identified for the proposed Project. Should the avoidance and mitigation measures prescribed be implemented, the significance of the considered impacts for all negative aspects pertaining to the environmental aspects is expected to be Low. It is thus the opinion of the EAP that the Project can proceed, and that all the prescribed mitigation measures and recommendations are considered by the issuing authority.

WAY FORWARD

Please submit all comments or queries to:

WSP Group Africa (Pty) Ltd
Attention: Patricia Nathaniel
(T) +27 11 361 1398
(E) patricia.nathaniel@wsp.com

10

REFERENCES



10 REFERENCES

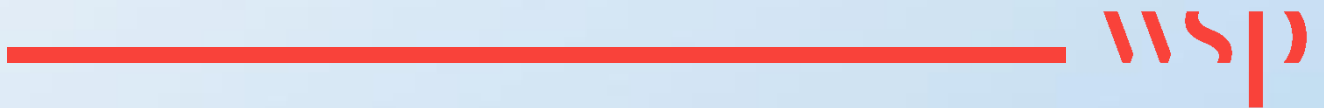
Department of Forestry, Fisheries and Environment (2023). Screening Report for an Environmental Authorization as Required by the 2014 EIA Regulations – Proposed Site Environmental Sensitivity.

eThekwini Municipality (2022/2023). Draft Integrated Development Plan: 5 Year Plan; 2022/23 to 2026/27.

eThekwini Municipality (2023). eThekwini Municipal Spatial Development Framework: 2022/23 to 2026/27.

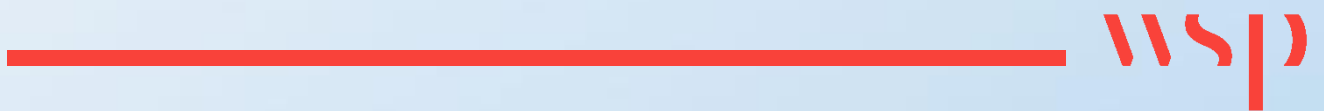
Appendix A

EAP CV



Appendix B

EAP DECLARATION



Appendix C

SPECIALIST DECLARATION



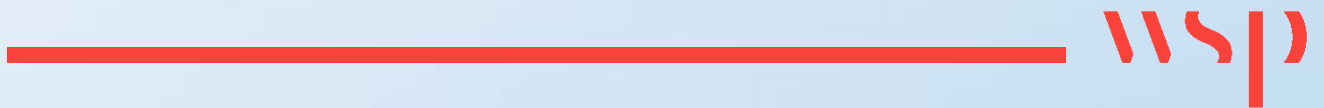
Appendix D

STAKEHOLDER ENGAGEMENT REPORT



Appendix E

DFFE SCREENING TOOL REPORT



Appendix F

SPECIALIST STUDIES



Appendix F.1

FRESHWATER ECOLOGY COMPLIANCE STATEMENT



Appendix F.2

TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT



Appendix F.3

HERITAGE ASSESSMENT







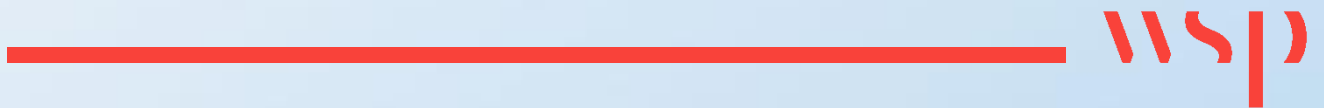
Appendix G

EMPR



Appendix H

MAPS





1st Floor, Pharos House
70 Buckingham Terrace
Westville, Durban, 3629
South Africa

wsp.com