



ARCUS

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VOLUME I

BASIC ASSESSMENT REPORT

**PROPOSED RE-ALIGNMENT OF THE MN50182 DISTRICT
ROAD**

for the

**PROPOSED BANNA BA PIFHU WIND FARM, EASTERN
CAPE PROVINCE**

On behalf of

BANNA BA PIFHU WIND FARM (RF) (PTY) LTD

October 2022

DRAFT FOR PUBLIC COMMENT



Prepared by:

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PROJECT DETAILS

DFFE Reference	To be confirmed		
Arcus Reference	3109 Banna ba Pifhu Re-alignment of the MN50182 District Road		
Title	Basic Assessment Report for the Proposed Re-Alignment of the MN50182 District Road for the Proposed Banna ba Pifhu Wind Farm, Eastern Cape Province		
Registered EAP	Ashlin Bodasing	Arcus Consultancy Services South Africa (Pty) Ltd	
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	Jamie Pote	Independent Consultant	Terrestrial Biodiversity, Plant and Animal
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	Morné de Jager	Enviro Acoustics Research cc	Noise
	Dr Jayson Orton	ASHA Consulting	Heritage, Archaeology and Palaeontology
	Quinton Lawson and Bernard Oberholzer	Qarc and BOLA	Visual and Landscape
	Dr Hugo van Zyl	Independent Economic Researchers	Socio-Economic
	Stephen Fautley	Techso (Pty) Ltd	Traffic and Transport
Project Applicant	Banna ba Pifhu Wind Farm (RF) (Pty) Ltd		
Report Status	Basic Assessment Report - DRAFT FOR PUBLIC COMMENT		

PUBLIC PARTICIPATION DETAILS

The Draft Basic Assessment Report, with the required application form, has been submitted to the Department of Forestry, Fisheries and the Environment (DFFE), acting as the Competent Authority (CA).

Members of the public, local communities, and stakeholders are invited to comment on the Draft Basic Assessment Report available for public review and comment at the following locations.

Location	Physical Address	Contact person
Hard Copy and CD Location		
Humansdorp Municipal Office	19 Main Street, Humansdorp, 6300	Gayruhnesia Coenraad
Jeffreys Bay Municipal Office	33 Da Gama Rd, Jeffreys Bay, 6330	Gayruhnesia Coenraad
Electronic Copy Locations		
Arcus Website	https://arcusconsulting.co.za/projects/	Ashlin Bodasing
Electronic Transfer	I&APs can request for copies to be shared via a One Drive folder.	
Comment Submission		
Contact Person	Ashlin Bodasing	
Company	Arcus Consultancy Services South Africa (Pty) Ltd	
Via Email	banna@arcusconsulting.co.za	
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Notification of public review and comment period will be sent to all registered interested and affected parties.

ABBREVIATIONS AND ACRONYMS

BA	Basic Assessment	PPA	Power Purchase Agreement
CARA	Conservation of Agricultural Resources, 1983 (Act No. 43 of 1983)	PPP	Public Participation Process
CBA	Critical Biodiversity Area	RE	Renewable Energy
DALRRD	Department of Agriculture, Land Reform and Rural Development	REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
dB	Decibel	SABS	South African Bureau of Standards
DFFE	Department of Forestry, Fisheries and the Environment (National)	SANBI	South African National Biodiversity Institute
DHSWS	Department of Human Settlements and Water and Sanitation	SANRAL	South African National Roads Agency Limited
EAP	Environmental Assessment Practitioner	SANS	South African National Standards
ECA	Environment Conservation Act, 1989 No. 73 of 1989)	SCC	Species of Conservation Concern
EIA	Environmental Impact Assessment	SDF	Spatial Development Framework
EMPr	Environmental Management Programme	SEA	Strategic Environmental Assessment
ESA	Ecological Support Area	SIA	Social Impact Assessment
GIS	Geographical Information Systems	SKA	Square Kilometre Array
GNR	Government Notice Regulation	WEF	Wind Energy Facility
GPS	Global Positioning System	WHO	World Health Organisation
HDI	Historically Disadvantaged Individuals	WULA	Water Use License Application
HIA	Heritage Impact Assessment		
I&AP	Interested and Affected Party		
IDP	Integrated Development Plan		
IEM	Integrated Environmental Management		
IRP	Integrated Resource Plan		
kV	Kilovolt		
kWh	Kilowatt Hours		
MWh	Megawatt Hours		
NCR	Noise Control Regulations		
NDP	National Development Plan		
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)		
NFEPA	National Freshwater Ecosystem Priority Area		
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)		
NSD	Noise-sensitive Developments		
NWA	National Water Act, 1998 (Act No. 36 of 1998)		
PES	Present Ecological State		

EXECUTIVE SUMMARY

Banna ba Pifhu Wind Farm (RF) (Pty) Ltd (the Applicant) is proposing the re-alignment of the MN50182 District Road which connects the DR1763 Oyster Bay Road to the R330 St Francis Bay Road, Eastern Cape Province. Hereafter the proposed re-alignment of the District Road will be referred to as 'the proposed development / the road'.

The same Applicant is proposing the development of the Banna ba Pifhu Wind Farm (BWF) (DFFE Reference: 12/12/20/2289/AM3 and 12/12/20/2289/1/AM3) on a site near Humansdorp in the Eastern Cape Province. The re-alignment of the MN50182 District Road is required for the development of the proposed BWF as it will provide direct access to the BWF from the south during construction and operations thereby minimising potential disturbance caused by vehicle movements to neighbouring landowners through the use of the MN50182.

The existing MN50182 District Road currently traverses neighbouring properties of the BWF and is located approximately 3 km south of the town of Humansdorp in the Kouga Local Municipality and Sarah Baartman District Municipality in the Eastern Cape Province. Two alternative road re-alignment routes were assessed during the BA process. Both routes are proposed to run along the site boundary of the BWF site and that of the neighbouring properties. Thus, the realignment of the road will only proceed should the BWF be constructed.

DFFE: Information Requirements

The Department of Forestry, Fisheries and the Environment (DFFE) information requirements for all applications is included in this section of the report. Where this information is not provided in the tables below, the information is included in the BA report and reference to the relevant section is advised below.

The proposed development will run between the BWF development site (Portion 1 of Farm 868, Portion 2 of Farm 689, and Remainder of Farm 688) and the adjacent Farms (Portion 4 of Farm 912, Portion 3 of Farm 912, Portion 2 of Farm 912, Portion 1 of Farm 912 and Portion 25 of Farm 688).

Once constructed, the road will be handed over to the Eastern Cape Department of Transport, who will then be responsible for maintenance and ownership of the road.

Details of these indirectly affected properties are presented in Table 0.1 below.

Table 0-1: Details of the Indirectly Affected Farm Properties and SG 21 Codes

Farm Name	Portion Number	Farm Number	SG 21 Code
Farm Broadlands	1	868	C0340000000086800001
Farm Diep River	RE/2	689	C0340000000068900002
Farm Geelhouteboom	RE	688	C0340000000068800000
Farm Woodlands	1	912	C0340000000091200001
Farm Woodlands	2	912	C0340000000091200002
Farm Woodlands	3	912	C0340000000091200003
Farm Woodlands	4	912	C0340000000091200004
Farm Geelhouteboom	25	688	C0340000000068800025

The proposed development is in respect of a linear activity; written consent not applicable considering Regulation 39(2)(a) of NEMA, 1998, as amended, however, these have been provided and submitted with the Application Form to the DFFE.

Technical details of the proposed road alternatives are presented in Table 0-2 below and the geographical co-ordinates are presented in Table 0-3 below.

Table 0-2: Technical Details of the Proposed Road Alternatives

Aspect	Proposed Specifications
Length of the proposed re-aligned alternatives	Preferred Alternative: Approximately 4.46 km
	Alternative 1: Approximately 4.05 km
Width of the proposed re-aligned alternatives	5.5 m wide
Development footprint	2.45 hectares
Single or dual carriageway	Single
Road call type / service level	Class 5 Provincial Gravel Road
Speed limit	60 km/h
Road reserve width	12 m
Road surface type	Gravel
Storm water drainage design	1:10 year Recurrence Interval (RI)
Laydown area	Approximately 50 x 50 m Required
Construction camp area	Approximately 50 x 50 m Required
Construction period	Approximately 3 – 6 Months
Affected land portions	Road will run parallel between the site boundary of the affected land parcels presented in Table 0.1 of this BA Report.

Table 0-3: Geographical Co-ordinates of the Proposed Road Alternatives

Aspect	Proposed Road Geographical Co-ordinates	
	Latitude	Longitude
Preferred Alternative		
Start (at DR1763 Oyster Bay Road)	34° 4'38.91"S	24°44'47.60"E
Bend Point	34° 4'38.97"S	24°44'56.07"E
Bend Point	34° 4'41.91"S	24°45'2.33"E
Bend Point	34° 4'42.42"S	24°45'12.32"E
Bend Point	34° 4'41.23"S	24°45'16.23"E
Bend Point	34° 4'38.68"S	24°45'20.16"E
Bend Point	34° 4'19.45"S	24°45'39.29"E
Bend Point	34° 4'19.49"S	24°45'51.82"E
Middle	34° 4'23.51"S	24°45'58.80"E
End (at R330 St Francis Bay Road)	34° 5'3.65"S	24° 47'9.75"E
Alternative 1		
Start (at DR1763 Oyster Bay Road)	34° 4'34.11"S	24°44'47.54"E
Middle	34° 4'27.56"S	24°46'5.08"E

Aspect	Proposed Road Geographical Co-ordinates	
	Latitude	Longitude
Bend Point	34° 4'27.50"S	24°46'6.02"E
Start (at DR1763 Oyster Bay Road)	34° 5'3.65"S	24° 47'9.75"E
Construction Camp		
Centre Point	34° 05'03.25"S	24°47'13.34"E

See Figure 1 for the proposed geographical co-ordinates of the proposed development.

Table 0-4 below provides a summary of the NEMA, 1998, as amended listed activities which are triggered by the proposed development. The description of the of project activity that triggers these listed activities are provided in Table 3.1 of this Report.

Table 0-4: NEMA Listed Activities in Relation to the Proposed Road Alternatives

2014 NEMA EIA Regulations, as amended	Activities
LN 1 GN R983	12(ii)(a)(c), 19, 48(a)(c), 56(i)(ii)
LN 3 GN R985	4(a)(i)(ee), 10 (a)(i)(ee)(ii), 12(a)(i)(ii), 14(ii)(a)(c)(a)(i)(bb)(ff), 18(a)(i)(bb)(ee)

Summary of Findings

From the results of the specialist assessments, the proposed development would have low negative impact significance ratings on the built environment, if mitigation measures are followed. The loss of agricultural land is very small in extent to the development area and the proposed land that the road will occupy is of limited land capability and would not be suitable for crop production.

The proposed road alignment would have no detrimental impact on any very high sensitive aquatic areas and has avoided the delineated wetland areas. There are only two locations where the preferred alternative crosses a watercourse, but these are within areas that already contain existing disturbance such as tracks, roads or agricultural activities. The proposed development will also predominantly be within transformed areas and with a short section (700 m) of the proposed re-aligned district road passing through indigenous vegetation. Within these proposed indigenous vegetation areas, there are potential occurrences of three species of conservation concern (SCC), namely Black Harrier *Circus ranivorus* (Locally and Globally Endangered), African Marsh Harrier *Circus ranivorus* (Locally Endangered) and Denham's Bustard *Neotis denhami* (Locally Vulnerable). The rest of the alignment runs through habitat that has been transformed through the cultivation of pastures, consisting of short, intensively managed grassland with almost no shrub element. The section where the first 700 m of the road is located has taller grass with a limited, scattered shrub component. The last-mentioned section may occasionally contain foraging Denham's Bustard. It is unlikely to be used with any regularly by Black Harrier and African Marsh Harrier as the habitat is not very suitable for both species.

The proposed re-aligned district road is bounded on the south side by transformed lands, hence it will not significantly increase habitat fragmentation and it is not anticipated that the two watercourse crossings will significantly fragment the landscape above high baseline levels of fragmentation.

There are no significant impacts expected from the proposed development to any type of heritage resources. With mitigation, the impact to palaeontological resources would be a benefit due to the potential gains that might be made by science. The chances of such a benefit occurring are still low, however, and the post-mitigation impact is thus low positive.

The project will result in a small number of short term jobs being created during the construction phase and long term benefits will be to the surrounding landowners who would experience less traffic (including during construction and operation phases of the BWF).

The proposed development will have limited negative impact on the surrounding environment. **Identified impacts can be mitigated to acceptable levels, based on specialist assessment, and are of low negative significance** (see summary tables provided below).

The majority of potential impacts identified to be associated with the construction and operation of the proposed development are anticipated to be localised and restricted to the proposed site. The potentially sensitive areas / environmental features that have been identified include:

- Wetlands and watercourses; and
- Sensitive vegetation (such as the Ecological Support Areas and Critical Biodiversity Areas);

It is the opinion of the EAP that the proposed preferred alternative for development **be approved**, subject to the implementation of the required mitigation measures and subject to conditions contained in the Environmental Management Programme (Appendix B).

Summary of Construction Phase Impacts

Construction Phase	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Geology, Soils and Agricultural Potential Impact							
Change to the future agricultural production potential of the land	L	H	L	Negative	L	L	H
<i>With Mitigation</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>
Freshwater & Wetlands (Aquatics)							
Loss of aquatic systems and disturbance of the watercourses	M	M	M	Negative	M	M	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Increase in sedimentation & erosion	M	M	M	Negative	M	M	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Localised surface water quality	M	M	M	Negative	M	L	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Terrestrial Biodiversity							
Impact on vegetation	L	L	L	Negative	M	H	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>H</i>	<i>H</i>
Impact on ecological processes	L	L	L	Negative	M	M	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>H</i>
Impact on aquatic and riparian processes	L	L	L	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>M</i>

Construction Phase	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Plant Species							
Impact on flora species	L	L	L	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>M</i>
Impact on alien invasive species	L	M	L	Negative	M	H	H
<i>With Mitigation</i>	<i>L</i>	<i>M</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>H</i>	<i>H</i>
Impact on erosion	L	M	L	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>M</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>M</i>
Animal Species							
Impact on faunal habitat	L	L	M	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>M</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>M</i>
Impact on faunal processes	L	L	L	Negative	M	M	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>H</i>
Impact on faunal species	L	L	M	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>M</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>M</i>
Avifauna							
Displacement of priority species	L	L	L	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Heritage, Archaeology & Palaeontology							
On palaeontological resources	L	H	L	Negative	L	L	H
<i>With Mitigation</i>	<i>L</i>	<i>H</i>	<i>L</i>	<i>Positive</i>	<i>L</i>	<i>L</i>	<i>H</i>

Construction Phase	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
On archaeological resources	L	H	L	Negative	L	L	H
<i>With Mitigation</i>	<i>L</i>	<i>H</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Cultural Landscape	L	L	L	Negative	M	H	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>H</i>	<i>H</i>
Visual							
Visual intrusion of the roadway and traffic on the rural landscape	L	L	L	Negative	L	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Social							
Overall socio-economic impacts	L	L	L	Negative	L	H	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>H</i>	<i>H</i>
Traffic and Transport							
Traffic Flow	M	L	H	Negative	M	M	M
<i>With Mitigation</i>	<i>M</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Minor road dust	L	L	M	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Traffic safety	L	L	H	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Intersection traffic safety	L	L	H	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>M</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Road design	L	H	H	Negative	M	M	M

Construction Phase	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
<i>With Mitigation</i>	<i>L</i>	<i>H</i>	<i>M</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Stormwater	L	L	M	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Site clearance	L	L	M	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Construction zone	L	L	M	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Construction camp	L	L	M	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Laydown area	L	L	M	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>

Summary of Operation Phase Impacts

Operational Phase	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Geology, Soils and Agricultural Potential Impact							
Change to the future agricultural production potential of the land	L	H	L	Negative	L	L	H
<i>With Mitigation</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>
Freshwater & Wetlands (Aquatics)							
Impact on aquatic systems	M	M	M	Negative	M	M	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>

Operational Phase	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Increase in sedimentation & erosion	M	M	M	Negative	M	M	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Localised surface water quality	M	M	M	Negative	M	L	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Terrestrial Biodiversity							
Impact on vegetation	L	L	L	Negative	M	H	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>H</i>	<i>H</i>
Impact on ecological processes	L	L	L	Negative	M	M	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>H</i>
Impact on aquatic and riparian processes	L	L	L	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>M</i>
Plant Species							
Impact on flora species	L	L	L	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>M</i>
Impact on alien invasive species	L	M	L	Negative	M	H	H
<i>With Mitigation</i>	<i>L</i>	<i>M</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>H</i>	<i>H</i>
Impact on erosion	L	M	L	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>M</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>M</i>
Animal Species							

Operational Phase	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Impact on faunal habitat	L	L	M	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>M</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>M</i>
Impact on faunal processes	L	L	L	Negative	M	M	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>H</i>
Impact on faunal species	L	L	M	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>M</i>	<i>Negative</i>	<i>L</i>	<i>M</i>	<i>M</i>
Visual							
Visual intrusion of the roadway and traffic on the rural landscape	L	L	L	Negative	L	M	M
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Heritage, Archaeology & Palaeontology							
Cultural Landscape	L	L	L	Negative	M	M	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Social							
Overall socio-economic impacts	L	H	L	Negative	L	H	H
<i>With Mitigation</i>	<i>L</i>	<i>H</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>H</i>	<i>H</i>
Traffic and Transport							
Minor road maintenance	L	H	M	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>H</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Traffic flow	L	H	M	Negative	M	M	M

Operational Phase	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
<i>With Mitigation</i>	<i>L</i>	<i>H</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Traffic safety	L	H	M	Negative	M	M	M
<i>With Mitigation</i>	<i>L</i>	<i>H</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>

Summary of Decommissioning Phase Impacts

Decommission Phase	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Freshwater & Wetlands (Aquatics)							
Loss of aquatic systems and disturbance of the watercourses	M	M	M	Negative	M	M	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Impact on aquatic systems	M	M	M	Negative	M	M	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Increase in sedimentation & erosion	M	M	M	Negative	M	M	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Localised surface water quality	M	M	M	Negative	M	L	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Terrestrial Biodiversity, Flora and Fauna							
Destruction of habitat	M	L	M	Negative	L	L	H
<i>With Mitigation</i>	<i>M</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Destruction of habitat – access roads	M	L	M	Negative	M	L	H
<i>With Mitigation</i>	<i>M</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>M</i>	<i>L</i>	<i>H</i>

Decommission Phase	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Disturbance / Displacement	L	L	M	Negative	M	H	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Disturbance / Displacement – access roads	L	L	M	Negative	M	H	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>H</i>
Heritage, Archaeology & Palaeontology							
On paleontological resources	L	H	L	Negative	L	L	H
<i>With Mitigation</i>	<i>L</i>	<i>H</i>	<i>L</i>	<i>Neutral / Positive</i>	<i>L</i>	<i>L</i>	<i>H</i>
On archaeological resources	L	H	L	Negative	M	H	H
<i>With Mitigation</i>	<i>L</i>	<i>H</i>	<i>L</i>	<i>Neutral / Positive</i>	<i>L</i>	<i>L</i>	<i>H</i>
Visual							
Construction of Infrastructure	M	L	M	Negative	M	M	M
<i>With Mitigation</i>	<i>M</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>
Social							
Loss of employment opportunities	M	M	M	Negative	M	M	M
<i>With Mitigation</i>	<i>M</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>M</i>	<i>M</i>	<i>M</i>
Traffic							
Road closure	L	H	M	Negative	L	M	M
<i>With Mitigation</i>	<i>L</i>	<i>H</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>M</i>

Summary of Cumulative Phase Impacts

Cumulative Phase	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Freshwater & Wetlands (Aquatics)							
Aquatic Systems	M	M	M	Negative	M	M	H
<i>With Mitigation</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Negative</i>	<i>L</i>	<i>L</i>	<i>L</i>

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1 INTRODUCTION

Banna ba Pifhu Wind Farm (RF) (Pty) Ltd (the Applicant) is proposing the re-alignment of the MN50182 District Road which connects the DR1763 Oyster Bay Road to the R330 St Francis Bay Road, Eastern Cape Province. Hereafter the proposed re-alignment of the District Road will be referred to as 'the proposed development / the road'.

The same Applicant is proposing the development of the Banna ba Pifhu Wind Farm (BWF) (DFFE Reference: 12/12/20/2289/AM3 and 12/12/20/2289/1/AM3) on a site near Humansdorp in the Eastern Cape Province. The re-alignment of the MN50182 District Road is required before the construction of the proposed BWF can commence. The re-aligned route will provide direct access to the BWF from the south during construction and operations, thereby minimising potential disturbance caused by vehicle movements to neighbouring landowners of the BWF development site through the use of the MN50182. The existing MN50182 District Road currently traverses the neighbouring properties of the BWF.

The proposed development is located approximately 3 km south of the town of Humansdorp in the Kouga Local Municipality and Sarah Baartman District Municipality in the Eastern Cape Province (Figure 1.2 – Site Locality).

In terms of Chapter 4 of the National Environmental Management Act, 1998 (Act 107 of 1998 – NEMA), Environmental Impact Assessment (EIA) Regulations, 2014 (as amended), BWF appointed Arcus Consultancy Services South Africa (Pty) Ltd (Arcus), to act as the project manager and to undertake this Basic Assessment process.

1.1 Purpose and Aim of the Report

The purpose of this report is to present an assessment of all potential impacts related to the proposed development.

This aim of this report is to provide sufficient information to potential and registered Interested and Affected Parties (I&APs), relevant stakeholders, as well the competent authority (CA) regarding the proposed development and the potential environmental impacts associated with various phases of the development.

2 TERMS OF REFERENCE

In terms of legal requirements, the NEMA EIA Regulations 2014, as amended, regulate and prescribe the content of the BA Report and specify the type of supporting information that must accompany the submission of the report to the authorities. Table 2.1 shows how and where the legal requirements are addressed in this BA Report. Section 9 of this BA report provides a summary of the Public Participation Process (PPP) and Volume III of this BA Report contains the Public Participation undertaken to date. As comments are received on the BA Report these will be collated and included in Volume III of this BA Report.

As per the EIA Regulations 2014, as amended, "*the objective of the basic assessment process is to, through a consultative process-*

- a) *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;*
- b) *identify the alternatives considered, including the activity, location and technology alternatives;*
- c) *describe the need and desirability of the proposed alternatives;*
- d) *through the undertaking of an impact and risk 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 the risk of impact of the proposed activity and technology alternatives on these aspects to determine-*
- i. the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and*
 - ii. the degree to which these impacts-*
 - (aa) can be reversed;*
 - (bb) may cause irreplaceable loss of resources; and*
 - (cc) can be avoided, managed or mitigated; and*
- e) 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-*
- i. identify and motivate a preferred site, activity and technology alternative;*
 - ii. identify suitable measures to avoid, manage or mitigate identified impacts; and*
 - iii. identify residual risk that need to be managed or monitored.*

The above activities are completed through consultation with:

- The lead authorities involved in the decision-making for the BA application (in this case, the DFFE);
- The I&APs, provincial and local governments, and other relevant organisations to ensure that local issues are well understood; and
- The specialist team to ensure that technical issues are identified.

Table 2-1: Legislative Requirements for Scope of Assessment and Content of Basic Assessment Reports

Appendix 1 Requirements NEMA, 1998 (Act No. 107 of 1998)	Location in BAR
A basic assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include-	
<i>(a) details of-</i> <i>the EAP who prepared the report; and</i> <i>the expertise of the EAP, including a curriculum vitae;</i>	Section 2.2 Appendix A
<i>(b) the location of the activity, including-</i> <i>the 21 digit Surveyor General code of each cadastral land parcel;</i> <i>where available, the physical address and farm name;</i> <i>where the required information in items (i) and (ii) is not available, the co-ordinates of the boundary of the property or properties;</i>	Executive Summary Section 7
<i>(c) a plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is-</i> <i>a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or</i> <i>on land where the property has not been defined, the coordinates within which the activity is to be undertaken;</i>	Section 7 Figure 7.1
<i>(d) a description of the scope of the proposed activity, including-</i> <i>all listed and specified activities triggered and being applied for; and</i> <i>a description of the activities to be undertaken including associated structures and infrastructure;</i>	Section 3
<i>(e) a description of the policy and legislative context within which the development is proposed including-</i> <i>an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development frameworks, and instruments that are</i>	Section 3

Appendix 1 Requirements NEMA, 1998 (Act No. 107 of 1998)	Location in BAR
<i>applicable to this activity and have been considered in the preparation of the report; and</i> <i>how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools framework, and instruments;</i>	
<i>(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;</i>	Section 8
<i>(g) a motivation for the preferred site, activity and technology alternative;</i>	Section 7
<i>(h) a full description of the process followed to reach the proposed preferred alternative within the site, including- details of the alternatives considered;</i>	Section 7
<i>details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;</i>	Section 9 Volume III
<i>a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;</i>	Section 9 Volume III
<i>the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</i>	Section 6
<i>the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts-</i> <i>(aa) can be reversed;</i> <i>(bb) may cause irreplaceable loss of resources; and</i> <i>(cc) can be avoided, managed or mitigated;</i>	Section 10 Section 11
<i>the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;</i>	Section 4
<i>positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</i>	Section 10 Section 11
<i>the possible mitigation measures that could be applied and level of residual risk;</i>	Section 10 Section 11
<i>the outcome of the site selection matrix;</i>	Section 7
<i>if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and</i>	Section 6
<i>a concluding statement indicating the preferred alternatives, including preferred location of the activity;</i>	Section 7
<i>(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including -</i> <i>a description of all environmental issues and risks that were identified during the environmental impact assessment process; and</i>	Section 4 Section 10 Section 11 Volume II

Appendix 1 Requirements NEMA, 1998 (Act No. 107 of 1998)	Location in BAR
<p><i>an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;</i></p>	
<p><i>(j) an assessment of each identified potentially significant impact and risk, including-</i> <i>cumulative impacts;</i> <i>the nature, significance and consequences of the impact and risk;</i> <i>the extent and duration of the impact and risk;</i> <i>the probability of the impact and risk occurring;</i> <i>the degree to which the impact and risk can be reversed;</i> <i>the degree to which the impact and risk may cause irreplaceable loss of resources; and</i> <i>the degree to which the impact and risk can be avoided, managed or mitigated;</i></p>	<p>Section 4 Section 10 Section 11 Volume II</p>
<p><i>(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;</i></p>	<p>Section 12 Volume II</p>
<p><i>(l) an environmental impact statement which contains-</i> <i>a summary of the key findings of the environmental impact assessment;</i> <i>a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and</i> <i>a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;</i></p>	<p>Section 13 Figure 13.1 Table 0.1 – 0.3 of the Executive Summary</p>
<p><i>(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of proposed impact management outcomes, and the impact management outcomes for the development for inclusion in the EMPr;</i></p>	<p>Appendix B Volume II</p>
<p><i>(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;</i></p>	<p>Section 13.1</p>
<p><i>(o) a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;</i></p>	<p>Section 2.3 Volume II</p>
<p><i>(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;</i></p>	<p>Section 13</p>
<p><i>(q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;</i></p>	<p>A 10-year validity, at minimum is requested. It is anticipated that construction will commence within 5-10 years of authorisation. Once constructed the proposed activity will be the responsibility of the Eastern Cape Provincial Department of Transport.</p>

Appendix 1 Requirements NEMA, 1998 (Act No. 107 of 1998)	Location in BAR
<p><i>(r) an undertaking under oath or affirmation by the EAP in relation to- the correctness of the information provided in the reports; the inclusion of comments and inputs from stakeholders and I&APs; the inclusion of inputs and recommendations from the specialist reports where relevant; and any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties; and</i></p>	Appendix A
<p><i>(s) where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;</i></p>	n/a
<p><i>(t) any specific information that may be required by the competent authority; and</i></p>	n/a
<p><i>(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.</i></p>	n/a

2.1 Overview of the BA Process

The application for environmental authorisation and assessment of impacts is ultimately a decision-making process with the specific aim of selecting an option that is technically feasible, practical, and will cause the least impact to the environment. This Basic Assessment (BA) Report presents the findings of the basic assessment process undertaken for the proposed development, and aims to provide the following information for the competent authority to make an informed decision on the application:

- Policy and legislative context of the proposed development;
- Methodology used to conduct the assessment and derive an outcome;
- The public participation process;
- The baseline environmental conditions including any specialists' studies conducted;
- The need and desirability for the proposed development;
- The assessment of alternatives;
- The results of the impact assessments; and
- The recommendations if a favourable environmental authorisation will be received.

The BA Report is set out in three volumes:

Volume I: BA Report

Volume II: Specialist Reports

Volume III: Public Participation Report

The independent environmental assessment practitioner (EAP) and specific specialists identified potential negative and positive impacts that could arise as a result of the proposed development and mitigation measures were recommended which would allow for the avoidance or reduction of negative impacts or which may enhance positive impacts. The appointment of specialists was made based on the list of specialists identified by the Screening Report (see Volume II) generated for the proposed development on the DFFE Screening Tool Portal.

The key phases of this BA process are described below:

- **Pre-Application Process:** The DFFE is consulted during a pre-application meeting to confirm the process which has been followed, including discussions based on the results of the Screening Tool, appointment of specialists, and the Public Participation Process which will be followed.

- **Initial Notification and Call to Register as I&APs through the following:** Placement of advertisements, site notices, posters and notification e-mails. The aim of this step is to inform potential interested and affected parties of the proposed activity and to encourage initial comment and feedback.
- **Basic Assessment Process: Collation of initial comments and specialist investigations into a concise report (this document) which provides feedback on the following:**
 - Nature of the activity;
 - Methodology used to conduct the assessment and derive an outcome;
 - The public participation process;
 - The baseline environmental conditions including any specialists' studies conducted;
 - The need and desirability;
 - Identification of potential feasible alternatives;
 - Identification of potential positive and negative impacts; and
 - Identification of knowledge gaps.

Any specific management and mitigation measures identified during the assessment of the proposed development has been included in the Environmental Management Programme (EMPr) (Appendix B).

- **Ongoing Public Consultation:** Interested and Affected Parties (I&APs) are consulted on an on-going basis throughout the BA Process. This involvement was initiated through the dissemination of information by means of advertisements, notification letters, posters and site notices. Opportunities will be provided for I&APs to review the Draft Basic Assessment Report.

Following the completion of the relevant processes described above and the submission of documentation to the competent authority, in this case it is the DFFE, the DFFE will review the application and issue a decision on whether to grant the applicant Environmental Authorisation or not. I&APs will be informed of the decision and their rights to appeal. The structure of the report is provided in Table 2.2 below.

Table 2-2: Structure of this BA Report

Section	Title	Containing
Volume I: Basic Assessment Report		Assessment of the Proposed Development
-	Executive Summary	Summary of the Project Specifications, Listed Activities, Summary of Findings and Summary of the Potential Impacts
1	Introduction	Project Introduction, and Purpose and Aim of the Report.
2	Terms of Reference	Overview and Structure of the BA Process, Applicant Details, EAP Details, and Assumptions and Limitations of the Study.
3	Environmental Legislative Context	National Environmental Legislation, Applicable Acts, International Conventions and Treaties, Policies and Guidelines.
4	Basic Assessment Methodology	Environmental Screening Tool Results, Specialists Studies Methodology, Assessment Techniques for the BA.
5	Description of the Baseline Environment	A Description of the Receiving Environment.
6	Assessment of Alternatives	Route, Location and Layout, and No-Go Alternatives.

Section	Title	Containing
7	The Preferred Alternative	Description of the Preferred Proposed Development, including a description of the location and technical specifications.
8	Need and Desirability	Description of the Need and Desirability of the Proposed Development.
9	Public Participation Process	Initial Notification, BA Phase Public Participation Process, Summary of Issues.
10	Assessment of Potential Impacts	A Detailed Assessment of the Potential Impacts during the Construction, Operational and Decommissioning Phases.
11	Assessment of Cumulative Impacts	A Detailed Assessment of the Potential Cumulative Impacts.
12	Summary of Findings	A Summary of the Findings.
13	Impact Statement and Conclusion	Conclusion of the assessment and Conditions to be included in the EA.
Appendix A	EAP Declaration of Independence and CV	EAP Commissioner of Oaths Declaration of Independence and CV.
Appendix B	Environmental Management Programme	EMPr for the proposed development.
Volume II: Specialist Reports		Respective Specialist Assessment Reports.
Volume III: Public Participation Report		Public Participation Processes to date.

2.2 Project Team Details

The Applicant, Banna ba Pifhu Wind Power (RF) (Pty) Ltd, appointed Arcus, with the lead EAP being Ashlin Bodasing to co-ordinate and manage the BA application process. The appointed specialist team was based on the results of the DFFE Screening Tool Report generated.

Table 2-3: Details of the Applicant

Name of the Applicant	Banna ba Pifhu Wind Farm (RF) (Pty) Ltd		
Name of contact person for applicant (if other)	Mr Mike Mangnall		
Company Registration Number	2011/009072/07		
BBBEE status	Level 4		
Physical address	301 Sunclare Building, 21 Dreyer Street, Claremont, 7708 South Africa		
Postal address	PO Box 762, Wilderness, Western Cape South Africa		
Postal code	7780	Cell:	+27 (0)83 785 1492
Telephone	-	Fax:	-
E-mail	mangnall@wkn-windcurrent.com		

Table 2-4: Details of the Environmental Assessment Practitioner

Name of the EAP organisation	Arcus Consultancy Services South Africa (Pty) Ltd
Details of the organisation	Arcus is a specialist environmental consultancy providing environmental services to the renewable energy market. Arcus

	has advised on over 250 renewable energy projects, including grid connections applications in the United Kingdom and South Africa, with environmental management and in-house specialist services.		
Environmental Assessment Practitioner	Ashlin Bodasing		
Consultant	Aneesah Alwie		
Postal address	240 Main Road, Great Westerford Building, 1 st Floor, Rondebosch, Cape Town		
Telephone	021 412 1529	Postal Code:	7700
Cellular	076 340 8914	Fax:	(-) -
E-mail	Ashlin.Bodasing@arcusconsulting.co.za / banna@arcusconsulting.co.za		
EAP Qualifications	Bachelor of Social Science: Geography and Environmental Management Registered EAP (EAPASA 2020/780)		
Details of EAP Expertise	Ashlin Bodasing is the Technical Director at Arcus, located in Cape Town. Having obtained her Bachelor of Social Science Degree from the University of Kwa-Zulu Natal; she has over 18 years' experience in the environmental consulting industry in southern Africa. She has gained extensive experience in the field of Integrated Environmental Management, environmental impact assessments and public participation. She has also been actively involved in a number of industrial and infrastructural projects, including electricity power lines and substations; road and water infrastructure upgrades and the installation of telecommunication equipment and as well green field coal mines, as well as renewable energy facilities, both wind and solar. Ashlin has major project experience in the development of Environmental Impact Assessments, Basic Assessments, Environmental Management Plans and the monitoring of construction activities. Her areas of expertise include project management, environmental scoping and impact assessments, environmental management plans, environmental compliance monitoring and environmental feasibility studies. Experience also includes International Finance Corporation Performance Standards and World Bank Environmental Guidelines environmental reviews. She has worked in Mozambique, Botswana, Lesotho and Zimbabwe.		

Refer to Appendix A for the EAP's Declaration of Interest and Curriculum Vitae

Table 2-5: BA Project Team

Name	Organisation	Role
Aneesah Alwie	Arcus	Consultant
Johann Lanz	Independent Consultant	Geology, Soils and Agriculture Impact Assessment
Dr Brian Colloty	Enviro Sci. (Pty) Ltd	Freshwater and Wetlands (Aquatics) Impact Assessment
Jamie Pote	Independent Consultant	Terrestrial Biodiversity Impact Assessment
Chris van Rooyen	Chris van Rooyen Consulting	Avifauna Statement
Morné de Jager	Enviro Acoustic Research cc	Noise Statement

Name	Organisation	Role
Quinton Lawson and Bernard Oberholzer	Qarc and BOLA	Visual and Landscape Impact Assessment
Dr Jayson Orton	ACO Associates	Cultural Heritage, Archaeology and Palaeontological Impact Assessment
Dr Hugo van Zyl	Independent Economic Researchers	Socio-Economic Impact Statement
Stephen Fautley	Techso (Pty) Ltd	Traffic and Transport Impact Assessment

2.3 Assumptions and Limitations

The following assumptions and limitations are applicable:

- The assumption is made that the information on which this report is based (baseline studies and project information, as well as existing information) is accurate and correct.
- It is assumed that the information contained in the Screening Tool Reports generated are accurate and correct and valid at the time of preparing this report.
- It should be emphasised that information, as presented in this report, only has reference to the study area as indicated on the accompanying figures. Therefore, this information cannot be applied to any other area without detailed investigation.
- The assumptions and limitations, presented in each specialist report, Volume II of this report, are noted for the BA Report.
- It is assumed that the connection of the proposed development between the DR1763 Oyster Bay Road and the R330 St Francis Bay Road is technically adequate, feasible and viable.
- It is assumed that the recommendations derived from this study would be included in all tender documentation and the EMP for implementation.

3 ENVIRONMENTAL LEGISLATIVE CONTEXT

The proposed development requires environmental authorisation prior to being constructed. This section of the report highlights the important environmental legal considerations taken while undertaking this assessment.

3.1 The National Environment Management Act, 1998 (Act 107 of 1998) as amended

Section 2 of the National Environment Management Act, 1998 (NEMA, as amended) as amended, lists environmental principles that are to be applied by all organs of state regarding proposals that may significantly affect the environment. Included amongst the key principles is the principle that all developments must be socially, economically and environmentally sustainable, environmental management must place people and their needs at the forefront of its concern, to serve their physical, psychological, developmental, cultural and social interests equitably.

NEMA, as amended, outlines the general objectives and implementation of Integrated Environmental Management (IEM), the latter providing a framework for the integration of environmental issues into the planning, design, decision-making and implementation of plans and development proposals. Section 24 provides a framework for the granting of environmental authorisations. NEMA, as amended, also provides for the participation of potential and registered I&APs and it stipulates that decisions must take the interests, needs and values of all I&APs into account.

To give effect to the general objectives of IEM, the potential impacts on the environment of listed activities must be considered, investigated, assessed and reported to the competent authority. Section 24(4) outlines the minimum requirements for procedures for the investigation, assessment and communication of the potential impact of activities.

3.2 Environmental Impact Assessment (EIA) Regulations, 2014, as amended

The EIA Regulations 2014, published under Government Notice (GN) No. 982, and as amended by GNR 326 of 2017, provide for the control of certain Listed Activities. These activities are listed in Government Notice No. R327 (Listing Notice 1 – Basic Assessment), R325 (Listing Notice 2 – Scoping & EIA Process) and R324 (Listing Notice 3 – Basic Assessment) of 7 April 2017, and are prohibited to commence until environmental authorisation has been obtained from the competent authority, in this case, the DFFE.

NEMA, as amended, states that: "24C. (2) The Minister must be identified as the competent authority in terms of subsection (1) if the activity- (a) has implications for international environmental commitments or Relations".

The DFFE is the competent authority for this application as the proposed development will be related to and have a connection with activities which have implications for international environmental commitments that South Africa has made in terms of climate change. In addition, in the Pre-Application Meeting with the department it was confirmed that they (DFFE) will be the competent authority of this application.

Environmental authorisation, which may be granted subject to conditions, will only be considered upon compliance with GN982, as amended by GNR326 of 7 April 2017.

Any Environmental Authorisation obtained from the competent authority applies only to those specific listed activities for which the application was made. To ensure that all Listed Activities that could potentially be applicable to this proposed development are covered by the Environmental Authorisation, a precautionary approach is followed when identifying listed activities, that is, if an activity could potentially be part of the proposed development, it is listed.

The Listed Activities applicable to this proposed development are presented in Table 3.1 below. All potential impacts associated with these Listed Activities have been considered and adequately assessed in this BA process.

Table 3-1: NEMA Listed Activities in Relation to the Proposed Development

Listing Notices 1, 2 and 3 07 April 2017	Listed Activity	Description of project activity that triggers listed activity
Listing Notice 1 GN R 327 Activity 12	<i>The development of- (ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs (a) within a watercourse; (c) if no development setback exists within 32 m of a watercourse, measured from the edge of a watercourse.</i>	The proposed road re-alignment is proposed to be within 32 m of a watercourse. The cumulative footprint of the proposed development within 32 m of a watercourse will exceed 100 square metres. The specific width and length can only be determined during planning and design phase of the facility.
Listing Notice 1 GN R 327 Activity 19	<i>The infilling or depositing of any material of more than 10 cubic metres into or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock</i>	The proposed road re-alignment will traverse watercourses. The construction will require the infilling or depositing of more than 10 cubic meters or the dredging, excavation,

Listing Notices 1, 2 and 3 07 April 2017	Listed Activity	Description of project activity that triggers listed activity
	<i>of more than 10 cubic meters from a watercourse.</i>	removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic meters from a watercourse.
Listing Notice 1 GN R 327 Activity 48	<i>The expansion of- Infrastructure or structures where the physical footprint is expanded by 100 square metres or more; where such expansion occurs- (a) within a watercourse; (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse.</i>	Existing roads to and from the proposed re-alignment and bridges within 32 m of a watercourse will require expansion. This can only be determined during planning and design phase of the facility and not before. The cumulative footprint of all proposed development expansion within 32 m of a watercourse will exceed 100 square metres.
Listing Notice 1 GN R 327 Activity 56	<i>The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre- (i) where the existing reserve is wider than 13.5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres; excluding where widening or lengthening occur inside urban areas.</i>	The proposed road re-alignment of the road will be more than 1 km in length and occurs outside urban areas.
Listing Notice 3 GN R 324 Activity 4	<i>The development of a road wider than 4 metres with a reserve less than 13,5 metres a. Eastern Cape (i) Areas outside urban areas; (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</i>	The proposed road re-alignment will be wider than 4 m with a reserve of up to 12 m. The site falls outside of an urban area and part of it falls within ESAs and CBA 2.
Listing Notice 3 GN R324 Activity 10	<i>The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres. a. Eastern Cape i. Outside urban areas: (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans (II) Within a watercourse</i>	The proposed road re-alignment will require the storage of dangerous goods during the construction period of a capacity which will not exceed 80 m ³ . The site falls outside of an urban area and part of it falls within ESAs and CBA 2 and crosses two watercourses.
Listing Notice 3 GN R324 Activity 12	<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</i>	The proposed road re-alignment will require the clearance of natural vegetation in excess of 300 m ² in areas of natural vegetation. Parts of the site fall within ESAs and CBA 2.

Listing Notices 1, 2 and 3 07 April 2017	Listed Activity	Description of project activity that triggers listed activity
	<p><i>undertaken in accordance with a maintenance management plan.</i></p> <p><i>a. Eastern Cape</i></p> <p><i>(i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</i></p> <p><i>(ii) Within critical biodiversity areas identified in bioregional plans;</i></p>	
<p>Listing Notice 3 GN R324 Activity 14</p>	<p><i>The development of –</i></p> <p><i>(ii) infrastructure or structures with a physical footprint of 10 square metres or more;</i></p> <p><i>where such development occurs—</i></p> <p><i>(a) within a watercourse;</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>a. Eastern Cape</i></p> <p><i>i. Outside urban areas:</i></p> <p><i>(bb) National Protected Area Expansion Strategy Focus areas;</i></p> <p><i>(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</i></p>	<p>Infrastructure associated with the transmission lines and roads will be constructed within 32 m of a watercourse. The proposed site lies outside of an urban area and the transmission lines traverses ESAs and CBAs.</p>
<p>Listing Notice 3 GN R324 Activity 18</p>	<p><i>The widening of a road by more than 4 metres or the lengthening of a road by more than 1 kilometre</i></p> <p><i>a. Eastern Cape</i></p> <p><i>i. Outside urban areas:</i></p> <p><i>(bb) National Protected Area Expansion Strategy Focus areas:</i></p> <p><i>(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</i></p>	<p>The proposed road re-alignment will be more than 1 km in length.</p> <p>The site falls outside of an urban area and part of it falls within ESAs and CBA 2.</p>

3.3 Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970)

In terms of the Subdivision of Agricultural Land Act, (SALA, 1970), any application for change of land use must be approved by the Minister of Agriculture. If there is no change to the existing rights on land, then no additional approval will be required.

The SALA, 1970, consent is separate from the application for Environmental Authorisation, and needs to be applied for and obtained separately by the Minister of Agriculture. Proof

and / or details of this application process, if required, will not be included in the public participation process of this Environmental Authorisation application.

3.4 Conservation of Agricultural Resources, 1983 (Act No. 43 of 1983 - CARA)

The Conservation of Agricultural Resources Act (CARA), 1983, states that no degradation of natural land is permitted. The Act requires the protection of land against soil erosion and the prevention of water logging and salinization of soils by means of suitable soil conservation works to be constructed and maintained. The utilization of marshes, water sponges and watercourses are also addressed.

The proposed re-alignment of the road may require consent from the Department of Agriculture, Land Reform and Rural Development (DALRRD) in terms of this provision of CARA for the removal of alien invasive species.

3.5 The National Heritage Resources Act, 1999 (Act No 25 of 1999 – NHRA)

Section 38 (1) of the National Heritage Resources Act, 1999 (NHRA) lists development activities that would require authorisation by the responsible heritage resources authority. Activities considered applicable to the proposed development include the following:

*“(a) The construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
(c) any development or other activity which will change the character of a site; and
(i) exceeding 5000 m² in extent.”*

The NHRA, 1999, requires that a person intending to undertake such an activity must notify the relevant national and provincial heritage authorities at the earliest stages of initiating such a development. The relevant heritage authority would then in turn, notify the person whether a Heritage Impact Assessment Report should be submitted. According to Section 38(8) of the NHRA, 1999, a separate report would not be necessary if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (No. 73 of 1989) (ECA) (now replaced by NEMA, Act 107 of 1998) or any other applicable legislation. The decision-making authority must ensure that the heritage evaluation fulfils the requirements of the NHRA, 1999, and take into account any comments and recommendations made by the relevant heritage resources authority.

The Heritage Impact Assessment, which forms part of this Basic Assessment process will be submitted to the Eastern Cape Provincial Heritage Resources Agency (ECPHRA) for comment.

In South Africa, the law is directed towards the protection of human-made heritage, although places and objects of scientific importance are covered. The NHRA, 1999, also protects intangible heritage such as traditional activities, oral histories and places where significant events happened. While not specifically mentioned in the NHRA, scenic routes are recognised as a category of heritage resources which requires grading as the Act protects area of aesthetic significance.

3.6 The Environment Conservation Act, 1989 (Act No.73 of 1989), the National Noise Control Regulations: GN R154 of 1992

The Environment Conservation Act, 1989 (ECA) allows the Minister of Environmental Affairs and Tourism (now the “Minister of Forestry, Fisheries and the Environment”) to make regulations regarding noise, amongst other concerns. The Minister has made noise control regulations under the ECA.

In terms of section 25 of the ECA, the national noise-control regulations (NCR) were promulgated (GN R154 in Government Gazette No. 13717 dated 10 January 1992). The

NCRs were revised under Government Notice Number R. 55 of 14 January 1994 to make it obligatory for all authorities to apply the regulations.

Subsequently, in terms of Schedule 5 of the Constitution of South Africa of 1996 legislative responsibility for administering the NCR was devolved to provincial and local authorities.

These regulations define "**disturbing noise**" as:

"Noise level which exceeds the zone sound level or, if no zone sound level has been designated, a noise level which exceeds the ambient sound level at the same measuring point by 7 dBA or more".

These Regulations prohibits anyone from causing a disturbing noise.

3.7 National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)

Section 34 of the Air Quality Act, 2004 (AQA) makes provision for:

- (1) The Minister to prescribe essential national noise standards –
 - a. For the control of noise, either in general or by specified machinery or activities or in specified places or areas; or
 - b. For determining –
 - i. a definition of noise; and
 - ii. the maximum levels of noise.
- (2) When controlling noise, the provincial and local spheres of government are bound by any prescribed national standards.

This section of the Act is in force, but no such standards have yet been promulgated.

An atmospheric emission license issued in terms of Section 22 may contain conditions in respect of noise. This however will not be relevant to this proposed development.

3.7.1 National Dust Control Regulations, 2013

The National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004), makes provision for national dust control regulations. These regulations prescribe dust fall standards for residential and non-residential areas. These Regulations also provide for dust monitoring, control and reporting.

The acceptable dust fall rates are:

Restriction Area	Dust Fall (D) (mg/m ² /day, 30 day average)	Permitted Frequency of exceedance
Residential	D<600	Two within a year, not sequential months
Non- Residential	600 <D< 1200	Two within a year, not sequential months

3.8 National Water Act, 1998 (Act No. 36 of 1998 - NWA)

The National Water Act, 1998 (NWA) provides for constitutional requirements including pollution prevention, ecological and resource conservation and sustainable utilisation. In terms of this Act, all water resources are the property of the State.

A water resource includes any watercourse, surface water, estuary or aquifer, and, where relevant, its bed and banks. A watercourse is interpreted as a river or spring; a natural channel in which water flows regularly or intermittently; a wetland lake or dam into which or from which water flows; and any collection of water that the Minister may declare to be a watercourse.

Relevant water uses, such as a borehole or extraction of water from water resources, for the proposed construction of the proposed development, which will require access roads over watercourses and drainage channels, in terms of Section 21 of the Act include, but are not limited to, the following:

*Section 21(c): Impeding or diverting the flow of water in a watercourse; and
Section 21(i): Altering the bed, banks, course or characteristics of a watercourse.*

GN 1199 of 18 December 2009 grants general authorisation (GA) for the above water uses based on certain conditions. It also stipulates that these water uses must be registered with the responsible authority.

Pollution of river water is a contravention of the NWA. Chapter 3, Part 4 of the NWA deals with pollution prevention and in particular the situation where pollution of a water resource occurs or might occur as a result of activities on land. The person who owns, controls, occupies or uses the land in question is responsible for taking measures to prevent pollution of water resources.

Chapter 3, Part 5 of the NWA deals with pollution of water resources following an emergency incident, such as an accident involving the spilling of a harmful substance that finds or may find its way into a water resource. The responsibility for remedying the situation rests with the person responsible for the incident or the substance involved.

3.8.1 Permit requirements

A Water Use License Application (WULA) or a General Application (GA) may be required. This will be determined by the Department of Human Settlement, Water and Sanitation (DHSWS) during the WULA pre-application process.

This process will run separate to this environmental authorisation application process.

3.9 National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004 - NEMBA)

3.9.1 Threatened or Protected Species List, 2015

Amendments to the Threatened or Protected Species (TOPS) list were published on 31 March 2015 in Government Gazette No. 38600 and Notice 256 of 2015. Certain species that occur on the site may be threatened or protected.

3.9.2 Alien and Invasive Species Regulations, 2016

The Act and Regulations set out various degrees of Invasive species (Plants, Insects, Birds, Animals, Fish and Water Plants) and requires that certain of those invasive species are documented and, in some cases, removed from properties in South Africa.

The Regulations list 4 categories of invasive species that must be managed, controlled or eradicated from areas where they may cause harm to the environment, or that are prohibited to be brought into South Africa.

3.10 National Forests Act, 1998 (Act No. 84 of 1998 – NFA)

This act lists protected tree species and prohibits certain activities. The prohibitions provide that *"no person may cut, damage, disturb, destroy or remove any protected tree, or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister"*.

3.11 National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998)

The purpose of the National Veld and Forest Fire Act, as amended by the National Fire Laws Amendment Act (Act 12 of 2001), is to prevent and combat veld, forest and mountain fires throughout South Africa. The Act applies to the open countryside beyond the urban limit and puts in place a range of requirements. It also specifies the responsibilities of land owners. The term 'owners' includes lessees, people in control of land, the executive body of a community, the manager of State land, and the chief executive officer of any local authority. The requirements include, but are not limited to, the maintenance of firebreaks and availability of firefighting equipment to reasonably prevent the spread of fires to affected properties.

3.12 The Eastern Cape Nature and Environmental Conservation Ordinance No. 19 of 1974

These were developed to protect both animal and plant species within the various provinces of the country which warrant protection. These may be species which are under threat or which are already considered to be endangered and species are listed in the relevant documents. The provincial environmental authorities are responsible for the issuing of permits in terms of this legislation.

3.13 Eastern Cape Provincial Development Plan 2019 – 2024

The Eastern Cape Government developed six provincial developmental goals for the 5-year strategic planning period to give effect to its strategic priority areas as aligned with the National Development Plan (2030) and the Medium Term Strategic Framework (MTSF 2019 - 2024). Together, the goals constitute the Provincial Development Plan (PDP) 2019 – 2024. The PDP Goals are depicted below:

- Provincial Goal 1 An innovative, inclusive and growing economy.
- Provincial Goal 2 An enabling infrastructure network
- Provincial Goal 3 An innovative and high-value agriculture and rural sector
- Provincial Goal 4 Human Development
- Provincial Goal 5 Environmental Sustainability
- Provincial Goal 6 Capable Democratic Institutions

This application promotes a benefit to the PDP Goals 1 -5.

3.14 Promotion of Access to Information Act, 2000 (Act No. 2 of 2002) (PAIA)

The PAIA gives effect to the constitutional right of access to any information held by the state and any information that is held by another person and that is required for the exercise or protection of any rights; and to provide for matters connected therewith.

3.15 NEMA, 1998, as amended, National Appeal Regulations, 2014

The purpose of these regulations is to regulate the procedure contemplated in section 43(4) of the NEMA relating to the submission, processing and consideration of a decision on an appeal. This Act is used to help guide and understand the appeal process and the procedures may follow.

3.16 Additional Relevant Legislation

The applicant must also comply with the provisions of other relevant national and provincial legislation. Additional relevant legislation that has informed the scope and content of this BA Report includes the following:

- *Constitution of the Republic of South Africa, 1996 (Act No. 108, 1996);*
- *National Environmental Management: Waste Act, 2008 (Act No. 59, 2008);*

- *National Environmental Management: Protected Areas Act, 2003 (Act No. 57, 2003);*
- *National Roads Act, 1998 (Act No. 7, 1998);*
- *National Land Transport Act, 2009 (Act No. 5 of 2009);*
- *National Road Traffic Act (Act 93 of 1996);*
- *Eastern Cape Roads Act (Act 3 Of 2003);*
- *National Road Traffic Regulations, 2000;*
- *Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);*
- *Fertiliser, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947);*
- *Independent Communications Authority of South Africa Act, 2000 (Act No. 13 of 2000; as amended); and*
- *Screening Report referred to in Regulation 16(1)(v) of the Environmental Impact Assessment Regulations 2014, as amended.*

3.17 Conventions and Treaties

- The Convention on Biological Diversity, 1993 (CBD)
- The Ramsar Convention, 1971
- The Convention on the Conservation of Migratory Species of Wild Animals, 1983 (CMS or Bonn Convention)
- The Agreement on the Conservation of African-Eurasian Migratory Waterbirds, 1999 (AEWA)

3.18 Policies and Guidelines

3.18.1 Environmental Impact Assessment Guidelines

Relevant guidelines and policies as applicable to the management of the BA process and to this application have also been taken into account, as indicated below:

- *IEM Guideline Series (Series 3): Stakeholder engagement (2002);*
- *IEM Guideline Series (Series 4): Specialist studies (2002);*
- *IEM Guideline Series (Series 5): Impact Significance (2002);*
- *IEM Guideline Series (Guideline 5): Companion to the EIA Regulations 2010 (October 2012);*
- *IEM Guideline Series (Series 7): Cumulative Effects Assessment (2002);*
- *IEM Guideline Series (Guideline 7): Public Participation in the EIA process (October 2012);*
- *IEM Guideline Series (Series 7): Alternatives in the EIA process (2002);*
- *IEM Guideline Series (Guideline 9): Draft guideline on need and desirability in terms of the EIA Regulations 2010 (October 2012);*
- *DFFE (2017) Guideline on Need and Desirability, Department of Forestry, Fisheries and Environment (DFFE) Pretoria, South Africa (2017);*
- *IEM Guideline Series (Series 12): Environmental Management Plans (EMP) (2002); and*
- *IEM Guideline Series (Series 15): Environmental impact reporting (2002).*

3.18.2 Noise Standards

It is of note that no specific guidance or criteria for the assessment of noise exists in South Africa. The following South African guidance documents have therefore been taken into consideration:

- The National Noise Control Regulations: GN R154 of 1992 (NCR) in Terms of Section 25 of the Environment Conservation Act, 1989 (Act No.73 of 1989) (see Section 3.6 above);

- SANS 10328: 2008. Methods for environmental noise impact assessments, Edition 3; and
- SANS 10103: 2006. The measurement and rating of environmental noise with respect to annoyance and speech communication, Edition 6.

3.18.2.1 SANS 10328

SANS 10328 defines procedures for environmental noise impact investigations and assessments at the various stages of a Basic Assessment.

This is applicable for Section 5.3 of the standard which relates to a change in land use.

3.18.2.2 SANS 10103

SANS 10103 provides guidance on assessing working and living environments with respect to acoustic comfort, excellence and possible annoyance by noise. It provides information on typical indoor and outdoor noise levels in various districts, of which the outdoor levels in rural districts are of relevance to this report. These are:

- Day/night: 45 dBA, $L_{R,dn}$
- Day: 45 dBA, $L_{Req,d}$
- Night: 35 dBA, $L_{Req,n}$

The descriptor L_{Req} denotes a rated level, i.e., that which has been adjusted to account for tonal character and impulsiveness.

3.18.3 Internal Finance Corporation (IFC) Performance Standards

The IFC's Performance Standards on Social and Environmental Sustainability (Referred to as Performance Standards hereinafter) is an environmental and social risk management tool provided by the IFC for its investment and financing clients, and is also one of the major applicable standards of the Equator Principles. As the global influence of the Equator Principles has continued to rise, more and more Equator Principles Financial Institutions (EPFI) have been applying the Performance Standards in their assessments of environmental and social impacts. Under this backdrop, the Performance Standards have become the world's leading system and tool for environmental and social risk management.

The IFC Performance Standards encompass eight topics as described in Table 3.2 below. Given that South Africa has a complex and well-balance environmental regulatory system, the IFC Performance Standards are wholly addressed in the NEMA, 1998, as amended, framework.

For reference purposes the Applicant, will be referred to as the 'Borrower' in Table 3.2.

The Project will not have adverse impacts on PS5: Land Acquisition and Involuntary Resettlement and PS7: Indigenous Peoples as there is no displacement or resettlement, and none such indigenous people are found in the proposed development area of influence.

Table 3-2: Description of the IFC Performance Standards

PS Description	Project Applicability
<p>Performance Standard 1: Assessment and Management of Environmental and Social (E&S) Risks and Impacts</p> <p>Objective: Underscores the importance of identifying E&S risks and impacts and managing E&S performance throughout the life of a project.</p>	
<p>Borrowers are required to manage the environmental and social performance of their business activity, which should also involve communication between the</p>	<p>Section 2 of Chapter 1 of the NEMA, as amended, provides details of the environmental management principles that should be adhered to during the entire project life. Chapter 6 of the NEMA EIA Regulations, 2014 (as amended) outlines the requirements for Public Participation in respect of a project.</p>

PS Description	Project Applicability
<p>Borrower/Investee, its workers and the local communities directly affected by the business activity. This requires the development of a good management system, appropriate to the size and nature of the business activity, to promote sound and sustainable environmental and social performance as well as lead to improved financial outcomes.</p>	<p>This document represents the Basic Assessment process (equitable to an ESIA) undertaken for the proposed development. Section 10 and 11 of the report comprehensively assesses the key environmental and social impacts and complies with the requirements of the NEMA EIA Regulations, 2014 (as amended). The proposed development will be managed in terms of environmental and social impacts through an approved Environmental Management Programme (EMPr) which is drafted as part of this process. The following have been included as part of this BA Assessment:</p> <ul style="list-style-type: none"> • Description of relevant Policy; • Identification of Risks and Impacts; • EMPr; • Requirements for Monitoring and Review; • Stakeholder Engagement as part of PPP; • External Communication and Grievance Mechanism; and • Recommendation for ongoing Reporting to Affected Communities.
<p>Performance Standard 2: Labour and Working Conditions Objective: Recognizes that the pursuit of economic growth through employment creation and income generation should be balanced with protection of basic rights for workers.</p>	
<p>For any business, its workforce is a valuable asset and a sound worker-management relationship is a key component of the overall success of the enterprise. By protecting the basic rights of workers, treating workers fairly and providing them with safe and healthy working conditions, Borrowers can enhance the efficiency and productivity of their operations and strengthen worker commitment and retention.</p>	<p>Whilst PS 2 is applicable to the proposed development, it will not be addressed in detail in this report as Labour and Working conditions are typically addressed prior to construction, once EA has been awarded. Recommendations are provided concerning development of a detailed Human Resources (HR) and Occupational Health and Safety (OHS) system by the Applicant.</p> <p>In terms of the proposed development, construction will require the appointment of an EPC contractor (and others) for completion.</p> <p>Appointment of contractors and employees will be 'fair and equal', and workers will be provided with a safe, healthy and inclusive work environment.</p> <p>The EMPr will incorporate the requirements for compliance with local and international Labour and Working legislation and good practice on the part of the contractors.</p>
<p>Performance Standard 3: Resource Efficiency and Pollution Prevention Objective: Recognizes that increased industrial activity and urbanization often generate higher levels of air, water and land pollution, and that there are efficiency opportunities.</p>	
<p>Increased industrial activity and urbanization often generate increased levels of pollution to air, water and land that may threaten people and the environment at the local, regional and global level. Borrowers are required to integrate pollution prevention and control technologies and practices (as technically and financially feasible as well as cost-effective) into their business activities.</p>	<p>The Project is not likely to have many large-scale and long-term impacts related to pollution.</p> <p>Measures to address air, water and land pollution are contained in the EMPr. There are no material resource efficiency issues associated with the proposed development and the EMPr will include general resource efficiency measures.</p> <p>The project is not greenhouse gas (GHG) emissions intensive and the detailed assessment and reporting of emissions is not required. This project, however, seeks to facilitate resource efficiency and pollution prevention by contributing to the South African green economy.</p> <p>The project will not release industrial effluents and waste generation will be managed according to the EMPr. Hazardous materials are not a key issue; small quantities of</p>

PS Description	Project Applicability
	<p>construction materials (oil, grease, diesel fuel etc.) are the only wastes expected to be associated with the project.</p> <p>Land contamination of the site from previous land use is not a concern as the project area is mostly an agricultural area where low intensity agriculture / grazing is practiced.</p>
<p>Performance Standard 4: Community Health, Safety, and Security Objective: Recognizes that projects can bring benefits to communities but can also increase potential exposure to risks and impacts from incidents, structural failures, and hazardous materials.</p>	
<p>Business activities can increase the potential for community exposure to risks and impacts arising from equipment accidents, structural failures and releases of hazardous materials as well as impacts on a community's natural resources, exposure to diseases and the use of security personnel. Borrowers are responsible for avoiding or minimizing the risks and impacts to community health, safety and security that may arise from their business activities.</p>	<p>The requirements for PS 4 have been addressed in Section 10 and 11 of the BAR and will be managed in accordance with the EMP.</p> <p>It is understood that the project infrastructure and equipment will be designed to good industry standards to minimise risks to communities, however a community health and safety plan should be compiled by the Applicant prior to construction to meet the requirements of IFC Performance Standard 4 (Community Health, Safety and Security).</p> <p>To ensure compliance with PS 4, Applicant will need to evaluate the risks and impacts to the health and safety of the affected community during the design, construction and operation of the proposed development and establish preventive measures to address them in a manner commensurate with the identified risks and impacts as contained in this BAR. Such measures need to adhere to the precautionary principle for the prevention or avoidance of risks and impacts over minimization and reduction.</p>
<p>Performance Standard 5: Land Acquisition and Involuntary Resettlement Objective: Applies to physical or economic displacement resulting from land transactions such as expropriation or negotiated settlements.</p>	
<p>Land acquisition due to the business activities of a Borrowers may result in the physical displacement (relocation or loss of shelter) and economic displacement (loss of access to resources necessary for income generation or as means of livelihood) of individuals or communities. Involuntary resettlement occurs when affected individuals or communities do not have the right to refuse land acquisition and are displaced, which may result in long-term hardship and impoverishment as well as environmental damage and social stress. Borrowers are required to avoid physical or economic displacement or minimize impacts on displaced individuals or communities through appropriate measures such as fair compensation and improving livelihoods and living conditions.</p>	<p>Not Applicable</p>
<p>Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources Objective: Promotes the protection of biodiversity and the sustainable management and use of natural resources.</p>	

PS Description	Project Applicability
Protecting and conserving biodiversity (including genetic, species and ecosystem diversity) and its ability to change and evolve, is fundamental to sustainable development. Borrowers are required to avoid or mitigate threats to biodiversity arising from their business activities and to promote the use of renewable natural resources in their operations.	In terms of protecting and conserving biodiversity, specialists have assessed the impacts of the proposed development within the area of influence and have recommended measures to prevent/avoid/mitigate these potential impacts. Specialist methods include a combination of literature review, stakeholder engagement and consultation, and in-field surveys. This substantively complies with the PS 6 general requirements for scoping and baseline assessment for determination of biodiversity and ecosystem services issues. The determination of habitat sensitivity was undertaken within the legal and best practice reference framework for South Africa.
<p>Performance Standard 7: Indigenous Peoples Objective: Aims to ensure that the development process fosters full respect for Indigenous Peoples.</p>	
Indigenous Peoples are recognized as social groups with identities that are distinct from other groups in national societies and are often among the marginalized and vulnerable. Their economic, social and legal status may limit their capacity to defend their interests and rights to lands and natural and cultural resources. Borrowers are required to ensure that their business activities respect the identity, culture and natural resource-based livelihoods of Indigenous Peoples and reduce exposure to impoverishment and disease.	Not Applicable. As per the international instruments under the United Nations (UN) Human Rights Conventions, no indigenous peoples are present within the study area. The Project does not involve displacement.
<p>Performance Standard 8: Cultural Heritage Objective: Aims to protect cultural heritage from adverse impacts of project activities and support its preservation.</p>	
Aims to protect cultural heritage from adverse impacts of project activities and support its preservation.	A cultural heritage impact assessment and paleontological impact assessment has been undertaken for the proposed development. Consultation will also take with ECPHRA.

3.18.4 The Equator Principles (EPs) III, 2013

The principles applicable to the project are likely to include:

- *Principle 2: Environmental and Social Assessment;*
- *Principle 3: Applicable Environmental and Social Standards;*
- *Principle 4: Environmental and Social Management System and Equator Principles Action Plan;*
- *Principle 5: Stakeholder Engagement;*
- *Principle 6: Grievance Mechanism;*
- *Principle 7: Independent Review;*
- *Principle 9: Independent Monitoring and Reporting; and*
- *Principle 10: Reporting and Transparency.*

These principles, among various requirements, include a requirement for an assessment process and an Environmental and Social Management Plan (ESMP) to be prepared by the Applicant to address issues raised in the assessment process and incorporate actions required to comply with the applicable standards, and the appointment of an independent environmental expert to verify monitoring information.

4 BASIC ASSESSMENT METHODOLOGY

The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives are described in this section.

4.1 Environmental Screening Tool

In terms of GN R960 (promulgated on 5 July 2019) and Regulation 16 (1)(b)(v) of the EIA Regulations, 2014 (as amended), the submission of a Screening Report generated from the national web based environmental screening tool is compulsory for the submission of BA and EIA applications in terms of Regulation 19 and 21 of EIA Regulations, 2014 (as amended). The Screening Report generated for the proposed development is included in Volume II of this Report.

The screening report was generated based on the selected classification, i.e., Infrastructure / Transport Services / Roads / Public. No intersections with Environmental Management Frameworks (EMF) were found. In terms of development incentives, restrictions, exclusions or prohibitions, the site falls within a South Africa Conservation Area and mitigation measures to reduce any impact against the conservation areas is recommended in this report.

Based on the selected classification to produce the screening tool report, and the environmental sensitivities of the development footprint, the screening report generates a list of specialist assessments identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study.

Table 4.1 provides a summary of the specialist assessments identified by the screening tool reports, and the response to each assessment in terms of the proposed development.

Specialist assessments undertaken (Volume II) have considered the results of the DFFE Screening Tool in their terms of reference.

Table 4-1: Specialist assessments identified in terms of the national web-based screening tool for the proposed development

Identified Specialist Assessment	Assessment Protocol	Identified Sensitivity	
		By DFFE Screening Report	By Specialist / EAP
Agricultural Impact Assessment	Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Agricultural Resources, gazetted on 20 March 2020.	High Sensitivity	Low Sensitivity
	<p>Comment: The high agricultural sensitivity attributed to the site by the screening tool is disputed because the soils are not suitable for crop production and should not be rated with a land capability value as high as 9 or classified as field crops. The soils on site are of the Estcourt, Kroonstad and Sepane soil forms and are limited by shallow effective depth and poor drainage, and are not suitable for croplands. Because of the soil limitations, the site should have a maximum land capability of 8 and should not therefore be attributed with high agricultural sensitivity because of the land capability.</p> <p>The required level of agricultural assessment is therefore confirmed as an Agricultural Compliance Statement. Refer to Chapter 11 – 13 as well as Volume II.</p>		
Landscape / Visual Impact Assessment	Site Sensitivity Verification Requirements where a Specialist Assessment is required but no specific assessment protocol has been prescribed, gazetted on 20 March 2020.	Not Determined	Low Sensitivity
	<p>Comment: Landscape / Visual Theme had no environmental sensitivity in the screening report to base the required level of assessment on. Given the small scale of the proposed road and relatively flat nature of the landscape, the project would have a limited zone of visual influence, or viewshed. The specialist provided a Visual Compliance Statement. Refer to Chapter 11 – 13 as well as Volume II.</p>		
Archaeological and Cultural Heritage Impact Assessment	Site Sensitivity Verification Requirements where a Specialist Assessment is required but no specific assessment protocol has been prescribed, gazetted on 20 March 2020.	Low Sensitivity	Low Sensitivity
	<p>Comment: The site visit confirmed the DFFE screening tool results and the heritage specialist thus confirms the low sensitivity. A photographic record and description of the single heritage resource found in close proximity to the alignment (refer to Plate 6.6 of this Report). The required level of assessment produced by the specialist was a Heritage Impact Assessment Report which also considers the archaeology and palaeontological impacts of the proposed development. Refer to Chapter 11 – 13 as well as Volume II.</p>		

Identified Specialist Assessment	Assessment Protocol	Identified Sensitivity	
		By DFFE Screening Report	By Specialist / EAP
Palaeontology Impact Assessment	Site Sensitivity Verification Requirements where a Specialist Assessment is required but no specific assessment protocol has been prescribed, gazetted on 20 March 2020.	Very High Sensitivity	Low Sensitivity
	<p>Comment: While the sensitivity is true in theory, local conditions determine that in practice the sensitivity is low. The heritage specialist thus disputes the very high sensitivity. If any fossils are found during excavation into fresh bedrock, mitigations have been recommended to maintain the low impact. The required level of assessment produced by the specialist was a Heritage Impact Assessment Report which also considers the archaeology and palaeontological impacts of the proposed development. Refer to Chapter 11 – 13 as well as Volume II.</p>		
Terrestrial Biodiversity Impact Assessment	Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Terrestrial Biodiversity, gazetted on 20 March 2020 and new regulations (October 2020).	Very High Sensitivity	Low Sensitivity
	<p>Comment: The Screening Tool identified one sensitivity rating within the development footprint, namely, very high. Specialist assessment disputes the outcome of the screening report. Ecological sensitivity indicates that the project assessed is mostly of low ecological sensitivity, with a few areas of medium sensitivity and scattered areas of high sensitivity. The required level of assessment produced by the specialist was a Terrestrial Biodiversity Assessment Report which also considers fauna and flora impacts of the proposed development. Refer to Chapter 11 – 13 as well as Volume II.</p>		
Aquatic Biodiversity Impact Assessment	Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Aquatic Biodiversity, gazetted on 20 March 2020.	Very High Sensitivity	Low Sensitivity
	<p>Comment: The screening tool identified one sensitivity rating within the development footprint, namely, very high. Based on the results, the specialist confirms the outcomes identified, however the layout avoids these sensitivities. The required level of assessment produced by the specialist was an Aquatic Impact Assessment Report. Refer to Chapter 11 – 13 as well as Volume II.</p>		
Noise Impact Assessment	Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Noise Impacts, gazetted on 20 March 2020.	Not Determined	Low Sensitivity

Identified Specialist Assessment	Assessment Protocol	Identified Sensitivity	
		By DFFE Screening Report	By Specialist / EAP
	<p>Comment: Traffic theme had no environmental sensitivity in the screening report to base the required level of assessment on. The specialist identified a low risk impact for the proposed development. A noise compliant statement was produced and the potential noise impact was screened using the guideline distances as proposed by section 6.3.3 of SANS 10328:2008. Refer to Chapter 11 – 13 as well as Volume II.</p>		
Traffic Impact Assessment	Site Sensitivity Verification Requirements where a Specialist Assessment is required but no specific assessment protocol has been prescribed, gazetted on 20 March 2020.	Not Determined	Low Sensitivity
	<p>Comment: Traffic theme had no environmental sensitivity in the screening report to base the required level of assessment on. The required level of assessment was thus based on the findings of the site sensitivity verification of low impact and is compliant with Regulation GNR 326 of 4 December, as amended 1 April 2017, Appendix 6. A site visit was conducted on 31 November 2021 and on 1 December 2021 to assess and a suitable alignment for minor road (MN50182) from a transport perspective. The required level of assessment produced by the specialist was a Traffic Impact Assessment Report. Refer to Chapter 11 – 13 as well as Volume II.</p>		
Geotechnical Assessment	Site Sensitivity Verification Requirements where a Specialist Assessment is required but no specific assessment protocol has been prescribed, gazetted on 20 March 2020.	Not Determined	Not Determined
	<p>Comment: Geotechnical assessment was identified as a required specialist assessment, but no environmental sensitivity was determined by the screening report. The EAP is of the opinion that a Geotechnical Assessment for the development can and will only be undertaken once the final development design is confirmed, prior to the commencement of the construction phase. The EAP has not included this assessment as part of the application process.</p>		
Socio-Economic Assessment	Site Sensitivity Verification Requirements where a Specialist Assessment is required but no specific assessment protocol has been prescribed, gazetted on 20 March 2020.	Not Determined	Low Sensitivity

Identified Specialist Assessment	Assessment Protocol	Identified Sensitivity	
		By DFFE Screening Report	By Specialist / EAP
	<p>Comment: No preliminary socio-economic sensitivities or sensitivity rating was identified or provided based on the DFFE Screening Tool (i.e. a preliminary sensitivity rating was not provided that could then be confirmed or altered based on further assessment). The specialist in their assessment and opinion found that the site would have a very low sensitivity rating. The required level of assessment produced by the specialist was a Socio-Economic Compliance Statement. Refer to Chapter 11 – 13 as well as Volume II.</p>		
Ambient Air Quality Impact Assessment	Site Sensitivity Verification Requirements where a Specialist Assessment is required but no specific assessment protocol has been prescribed, gazetted on 20 March 2020.	Not Determined	Low Sensitivity
	<p>Comment: The proposed construction of the road is proposed to take place between 3 - 6 months. The likelihood of impacts to the air quality of the proposed development is deemed to be acceptable and significance after mitigation would be low. The EAP has therefore not included this assessment as part of the application process but will request comment from the respective Air Quality Directorate for the Eastern Cape Province during the public consultation phase. Mitigation measures have also been included in the EMPr to limit air quality impacts (Appendix B).</p>		
Plant Species Assessment	Protocol for the specialist assessment and minimum report content requirements for Environmental Impacts on Terrestrial Plant Species, gazetted on 20 March 2020 and 30 October 2020, respectively.	Medium Sensitivity	Low Sensitivity
	<p>Comment: An identification, ranking and assessment of the present state, and impact of the proposed development, on plant species has been provided in the terrestrial biodiversity report and disputes the identified sensitivity. An ecological impact assessment (including the assessment of plant species) which assesses the biophysical environment of the proposed development has been conducted. Refer to Chapter 11 – 13 as well as Volume II.</p>		
Animal Species Assessment	Protocol for the specialist assessment and minimum report content requirements for Environmental Impacts on Terrestrial Animal Species, gazetted on 20 March 2020 and 30 October 2020, respectively.	High Sensitivity	Low Sensitivity

Identified Specialist Assessment	Assessment Protocol	Identified Sensitivity	
		By DFFE Screening Report	By Specialist / EAP
	<p>Comment: An identification, ranking and assessment of the present state, and impact of the proposed development, on animal species has been provided in the terrestrial biodiversity report and disputes the identified sensitivity. An ecological impact assessment (including the assessment of animal species) which assesses the biophysical environment of the proposed development has been conducted. Refer to Chapter 11 – 13 as well as Volume II.</p>		
Civil Aviation Assessment	Protocol for the specialist assessment and minimum report content requirements for Environmental Impacts on Civil Aviation Installations, gazetted on 20 March 2020.	Medium Sensitivity	Low Sensitivity
	<p>Comment: An environmental sensitivity was identified but <u>no requirement for assessment</u>. Site verification analysis disputes the medium sensitivity. The EAP has not included this assessment as part of the application process but will request comment from the respective Civil Aviation Authority during the public consultation phase.</p>		
Defence Assessment	Protocol for the specialist assessment and minimum report content requirements for Environmental Impacts on Defence, gazetted on 20 March 2020.	Low Sensitivity	Low Sensitivity
	<p>Comment: An environmental sensitivity was identified but <u>no requirement for assessment</u>. Site verification analysis confirms the low sensitivity. The EAP has not included this assessment as part of the application process but will request comment from the respective Defense Authority during the public consultation phase.</p>		

4.2 Specialist Study Methodology

To evaluate the potential environmental impacts and verify the sensitivity of the screening report, information relating to the existing environmental conditions was collected through field and desktop research, this is known as the baseline.

Each of the specialist assessments followed a systematic approach to the assessment of impacts, with the principal steps being:

- Description of existing environment/baseline conditions;
- Site Sensitivity Verification;
- Prediction and Assessment of likely potential impacts, including cumulative impacts (both positive and negative), where relevant;
- Identification of appropriate mitigation measures;
- Assessment of residual (potential) environmental impacts; and
- Summary of findings and recommendations.

It should be noted that all specialists have surveyed the area extensively over the last 10 years and are very familiar with the local environment. The specialists used for this application process were involved in the proposed Banna ba Pifhu Wind Farm and its associated Grid Connection application and their amendments, for the same Applicant. The methodology each specialist used to collate their report is summarised below and is available in each Specialist Report attached to this BA as Volume II.

4.2.1 Soil

The specialist undertook a desk-based assessment supplementing an on-site investigation of the soils and associated agricultural conditions conducted in 2012 as well as existing soil and agricultural data for the site. Soil data was sourced from the land type data set provided by the DAFF (Department of Agriculture, Forestry and Fisheries). Satellite imagery of the site was sourced from Google Earth. Land capability data, field crop boundaries and rainfall and evaporation data were all sourced from various data applications and data sets.

Based on the specialists' verification of the site as low sensitivity, the level of agricultural assessment followed by the specialist was an Agricultural Compliance Statement.

4.2.2 Freshwater and Wetlands (Aquatic)

The study followed the approaches of several national guidelines regarded for aquatic assessments. These were then modified by the specialist, to provide a relevant mechanism of assessing the present state of the study systems applicable to the specific environment, and in a clear and objective manner, assess the potential impacts associated with the proposed development site.

The assessment made use of the National Wetland Classification System (NWCS) approach and included delineating any natural waterbodies, and assessing the potential consequences of the proposed alignment on the surrounding watercourses. This was based on information collected during various site visits conducted within the region, and a site-specific assessment in January 2022. The methodology also included the considerations of the Macfarlane & Bredin (2017) buffer models and revisions to the SANBI National Wetland Inventory.

The aquatic report was produced to meet the criteria to fulfil a Specialist Assessment Report as portions of the proposed development area were rated as very high sensitivity as per the DFFE Screening Tool.

4.2.3 Terrestrial Biodiversity and Flora

The specialist conducted a site visit in December 2021, which was supplemented by previous site visits undertaken in January and May 2011 in the project area. The reports and data for the proposed Banna ba Pifhu Wind Farm and its associated Grid Connection were reviewed along with the updated data of the baseline and receiving environment. A site verification report was compiled with sensitivity maps. Potential impacts were then assessed for the proposed development and has been presented in an assessment report which complies with the requirements of the protocols for the Terrestrial Biodiversity, Flora and Fauna species.

4.2.4 Avifauna

The specialist provided a statement to confirm the impacts, if any, the proposed development will have on the avifauna species which were identified by the DFFE screening tool report. The assessment was undertaken at desk-top level and was based on previous assessments undertaken by the specialists in the area for the proposed Banna ba Pifhu Wind Farm and other projects the specialist is working on.

4.2.5 Noise

No environmental sensitivity was identified by the DFFE screening report. To verify the sensitivity, a noise specialist produced a Noise Compliant Statement. The potential noise impact was screened using the guideline distances as proposed by Section 6.3.3 of SANS 10328:2008.

4.2.6 Visual

The specialists made use of earlier Visual Impact Assessment information from the proposed Banna ba Pifhu Wind Farm and knowledge of the area from previous fieldwork. The specialists also supplemented information from Google Earth and Google Street View. The study undertaken was a high-level desk-based assessment presented in a visual compliance statement.

4.2.7 Heritage, Archaeology and Palaeontology

The methodology included a thorough survey of accessible literature sources to assess the general heritage context in which the development would be set, using satellite aerial photography in combination with the author's accumulated knowledge of the local landscape. The site was also subjected to a detailed foot survey carried out by an archaeologist. The dense grass hampered visibility of archaeological materials with very little substrate being visible. However, a small cutting into the substrate at the eastern end of the proposed alignment gave a window into the underlying sediments. This window is assumed to approximate the strata present elsewhere in the study area, although their depths and thicknesses may vary.

4.2.8 Socio-Economic

The specialist undertook a desk-based assessment supplementing project information and imagery of the site. According to the site sensitivity verification report attached to the survey, socio-economic sensitivities were rated very low and the specialist discusses the reasons for the low sensitivity as well as the impact on farm owners.

4.2.9 Traffic and Transport

As no specific assessment protocol has been prescribed, the required level of assessment must be based on the findings of the Initial Site Sensitivity Verification and must comply with Appendix 6 of the Environmental Impact Assessment Regulations promulgated under

sections 24(5) and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998), where a specialist assessment is required.

The following was undertaken by the specialist:

- Desktop analysis, using satellite imagery (Google Earth) and including assessment of vertical alignment of sight lines at the proposed re-aligned road access to the R330 via Google Earth; and
- A site visit was conducted from 31 November 2021 – 01 December 2021, including meetings with the two affected landowners to discuss the proposed road alignment and various possible options.

The specialist assessment was also undertaken according to the requirements in the TMH 16 Volume 1 and 2, South African Traffic Impact and Site Traffic Assessment Manual, August 2012, compiled by the Committee of Transport Officials (COTO)¹.

4.3 Identification of Potential Impacts

The identification of potential impacts covers the three phases of the proposed development: construction, operation and decommissioning. During each phase, the potential environmental impacts may be different.

The project team has experience from environmental studies for other projects in the locality of the proposed development. The team is, therefore, able to identify potential impacts addressed in the BA based on their experience and knowledge of the type of development proposed and the local area. Their inputs informed the scope for the BA.

Each specialist assessment considered:

- The extent of the impact (local, regional or (inter) national);
- The intensity of the impact (low, medium or high);
- The duration of the impact and its reversibility;
- The probability of the impact occurring (improbable, possible, probable or definite);
- The confidence in the assessment; and
- Cumulative impacts.

Following identification of potential environmental impacts, the baseline information was used to predict changes to existing conditions and undertake an assessment of the impacts associated with these changes.

4.3.1 Assessment of Potential Impacts

The potential impact that the proposed development may have on each environmental receptor could be influenced by a combination of the sensitivity and importance of the receptor and the predicted degree of alteration from the baseline state (either beneficial or adverse).

Environmental sensitivity (and importance) may be categorised by a multitude of factors, such as the rarity of the species; transformation of natural landscapes or changes to soil quality and land use.

The overall significance of a potential environmental impact is determined by the interaction of the above two factors (i.e., sensitivity/importance and predicted degree of alteration from the baseline).

Specialists, in their terms of references, were supplied with a standard method with which to determine the significance of impacts to ensure objective assessment and evaluation,

¹ <https://accessmanagement.info/wp-content/uploads/2016/09/TMH16-Traffic-Impact-Study-Manual-Vol-1.pdf> and <https://accessmanagement.info/wp-content/uploads/2016/09/TMH16-Traffic-Impact-Study-Manual-Vol-2.pdf>.

while enabling easier multidisciplinary decision-making. The methodology² as outlined below indicates the categories for the rating of impact magnitude and significance.

The assessment methodology that was used is in accordance with the EIA Regulations, 2014 (as amended). The significance of environmental impacts is a function of the environmental aspects that are present and to be impacted on, the probability of an impact occurring and the consequence of such an impact occurring before and after implementation of proposed mitigation measures.

4.3.1.1 Extent (spatial scale)

L	M	H
Impact is localised within site boundary	Widespread impact beyond site boundary; Local	Impact widespread far beyond site boundary; Regional/national

4.3.1.2 Duration

L	M	H
Quickly reversible, less than project life, short term	Reversible over time; medium-term to life of project	Long term; beyond closure; permanent; irreplaceable or irretrievable commitment of resources

4.3.1.3 Intensity (severity)

Type of Criteria	Negative			Positive		
	H-	M-	L-	L+	M+	H+
Qualitative	Substantial deterioration death, illness or injury, loss of habitat /diversity or resource, severe alteration or disturbance of important processes.	Moderate deterioration, discomfort, Partial loss of habitat /biodiversity /resource or slight or alteration	Minor deterioration, nuisance or irritation, minor change in species/habitat/diversity or resource, no or very little quality deterioration.	Minor improvement, restoration, improved management	Moderate improvement, restoration, improved management, substitution	Substantial improvement, substitution
Quantitative	Measurable deterioration Recommended level will often be violated (e.g., pollution)	Measurable deterioration Recommended level will occasionally be violated	No measurable change; Recommended level will never be violated	No measurable change; Within or better than recommended level.	Measurable improvement	Measurable improvement

4.3.1.4 Probability of Occurrence

L	M	H
Unlikely; low likelihood; Seldom No known risk or vulnerability to natural or induced hazards.	Possible, distinct possibility, frequent Low to medium risk or vulnerability to natural or induced hazards.	Definite (regardless of prevention measures), highly likely, continuous High risk or vulnerability to natural or induced hazards.

² Adapted from T Hacking, AATS – Envirolink, 1998: An innovative approach to structuring environmental impact assessment reports. In: IAIA SA 1998 Conference Papers and Notes.

4.3.1.5 Status of the Impact

The specialist should describe whether the impact is positive, negative or neutral for each parameter. The ranking criteria are described in negative terms. Where positive impacts are identified, use the opposite, positive descriptions for criteria.

4.3.1.6 Degree of Confidence in Predictions:

The degree of confidence in the predictions, based on the availability of information and specialist knowledge, is to be stated.

4.3.1.7 Consequence: (Duration x Extent x Intensity)

Having ranked the severity, duration and spatial extent, the overall consequence of impacts is determined using the following qualitative guidelines:

Intensity = L				
Duration	H			
	M			Medium
	L	Low		
Intensity = M				
Duration	H			High
	M		Medium	
	L	Low		
Intensity = H				
Duration	H			
	M			High
	L	Medium		
	L		M	H
Extent				

Positive impacts are ranked in the same way as negative impacts but result in high, medium or low positive consequence.

4.3.1.8 Overall Significance of Impacts

Combining the consequence of the impact and the probability of occurrence provides the overall significance (risk) of impacts.

PROBABILITY	Definite Continuous	H	MEDIUM		HIGH
	Possible Frequent	M		MEDIUM	
	Unlikely Seldom	L	LOW		MEDIUM
			L	M	H
CONSEQUENCE					

4.3.1.9 Mitigation Measures

Measures to avoid, reduce or remedy significant adverse impacts identified, are termed mitigation measures. Where the assessment process identifies any significant adverse impacts, mitigation measures are proposed to reduce those impacts where practicable. Such measures include the physical design and operational measures. Design alterations such as the route of the servitude to avoid certain sensitive receptors are mitigation embedded into the design of the proposed development, i.e., embedded mitigation.

This strategy of avoidance, reduction and remediation is a hierarchical one which seeks:

- First to avoid potential impacts;
- Then to reduce those which remain; and
- Lastly, where no other measures are possible, to propose compensatory measures.

Each specialist consultant identified appropriate mitigation measures (where relevant).

4.3.2 Assessment of Potential Cumulative Impacts

In accordance with the EIA Regulations, 2014 (as amended), consideration should also be given to 'cumulative impacts'.

By definition, cumulative impacts are those that result from incremental changes caused by past, present or reasonably foreseeable future actions together with the proposed development. Cumulative impacts are the combined impacts of several developments that are different to the impacts from the developments on an individual basis.

For the purpose of this assessment, cumulative impacts are defined and have been assessed in the future baseline scenario, i.e., cumulative impact of the proposed development = change caused by the proposed development when added to the cumulative baseline (which includes all other identified relevant developments). In the cumulative assessment, the effect of adding the proposed development to the cumulative baseline is assessed.

5 DESCRIPTION OF THE BASELINE ENVIRONMENT

The baseline environment can be described as the physical, biological, ecological, social, economic and cultural setting in which the proposed development will be located. This section provides a brief description of the baseline environment. The information provided is based on actual studies conducted by specialist consultants and from existing literature and sources which was available for the development area and its surrounds. This baseline will provide the context in which the proposed development will be constructed.

5.1 Regional and Local Context

The proposed development is located approximately 3 km south of the town of Humansdorp in the Kouga Local Municipality and Sarah Baartman District Municipality in the Eastern Cape Province. Demographically, there has been a relatively strong growth in population numbers since the 2011 census. The 2016 Community Survey estimated the Kouga Local Municipality (KLM) had a population of 112,941 (see Plate 5.1 below). This represents 14.6% growth from the 2011 Census population estimate of 98,558. It is substantially higher than the 6.5% growth rate the Sarah Baartman District experienced over the period.

MUNICIPALITY	CENSUS 2011 POPULATION	CENSUS 2011 % GROWTH RATE (2001 TO 2011)	COMMUNITY SURVEY 2016	COMMUNITY SURVEY % GROWTH RATE (2011 TO 2016)
Sarah Baartman	450 584	16.6%	479923	6.5%
Kouga	98 558	38%	112941	14.6%
Blue Crane Route	36 002	1.6%	36063	0.1%
Makana	80 390	6.7%	82060	2.1%
Ndlambe	61 176	11.4%	63180	3.2%
Sundays River Valley	54 504	11.8%	59793	9.7%
Beyers Naude	79291	5.1%	82197	3.6%
Kou-Kamma	40 663	18.7%	43688	7.4%

Plate 5-1: Comparative population figures and growth rates for the Sarah Baartman District and individual municipalities in the District (Source: KLM, 2-17)

Aside from relatively robust population growth, there is also some evidence that the age profile for the population has changed somewhat. Plate 5.2 below shows that between 2011 and 2016 the portion of the population in the younger 0 to 34 years and older 65+ age groups have increased while the proportion in the most economically active 35 to 64 years group have reduced.

POPULATION PER AGE GROUP

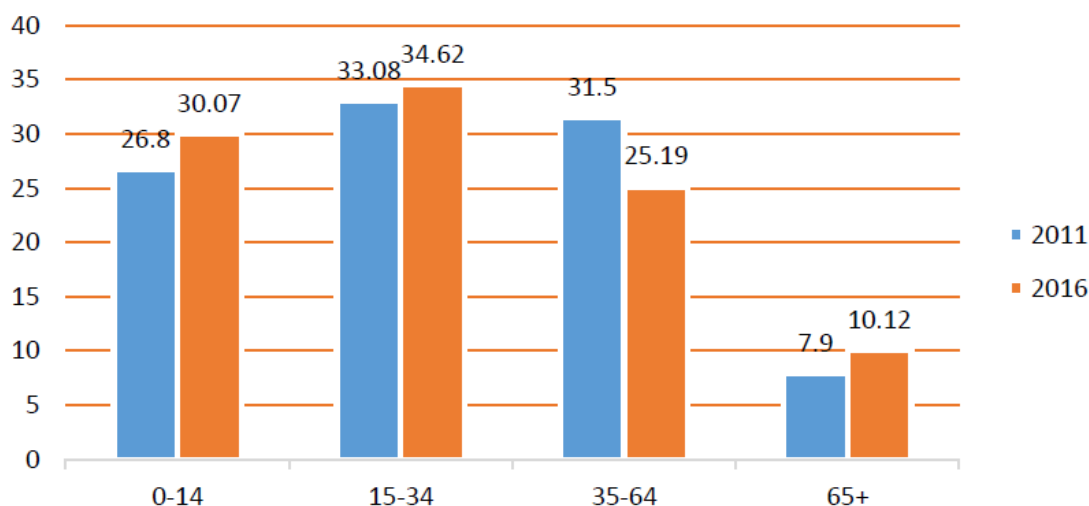


Plate 5-2: Percentage of population per age group in the Kouga Municipality (2011 compared to 2016) (Source: KLM, 2017)

The challenges of unemployment and achieving equitable economic transformation, as well as, the delivery of equitable accessible services to improve the socio-economic profile are the primary focus of the Kouga Municipality (KLM, 2017). With respect to poverty, Plate 5.3 below shows that between 2011 and 2016 there was a slight reduction in the intensity of poverty in the KLM from 43.7% to 42.3% assisted by increased grants and subsidies. The average dependency ratio has however increased from 53.1% in 2011 to 59.7% in 2016. Although figures are not available, it is highly likely that the global coronavirus pandemic and associated recession will have increased unemployment and poverty levels in the area substantially.

GRANTS AND SUBSIDIES	POVERTY			
	2011		2016	
	Poverty headcount	Intensity of poverty	Poverty headcount	Intensity of poverty
28.7%	5.9%	43.7%	5.7%	42.4%

Plate 5-3: Poverty indicators for Kouga Municipality 2011 and 2016 (Source: KLM, 2017)

Gains have been made in the education and training coverage or access. The portion of the population aged 5 to 24 years attending an educational institution increased from 63% in 2011 to 68% in 2016 (KLM, 2017). On the whole, data shows that service delivery is keeping up with population growth in the area. The KLM’s provided piped water to 98.6% of households in 2016, roughly the same as the 98.8% in 2011. Access to flush toilets has stayed roughly the same as a percentage of the population at 77% in 2011 and 2016. Roughly 82.5% of households in Kouga have access to refuse removal at least once a week which is only slightly less than the 83.5% that had access in 2011. The housing backlog remains acute. The current waiting list for accommodation is 9,524 households and there are 4,883 informal dwellings, resulting in an estimated need for 14,137 houses (KLM, 2017). The municipality recognises that bulk services need to be upgraded in almost all areas to proceed with any housing project and the availability of land is a challenge.

Kouga Municipality’s economic activities remain largely focused on the tourism and agricultural sector as the main economic drivers. While tourism remains a key sector, Plate 5.4 below shows that visitor numbers have decreased from ~130,000 between 2007 and 2011 to less than 100,000 in 2016. The Integrated Development Plan of the KLM also points out that the tourism industry has been significantly negatively affected by challenging economic condition and lack of disposable income (KLM, 2017).

	Leisure / Holiday	Business	Visits to friends and relatives	Other (Medical, Religious, etc)	Total
2006	33,600	7,140	70,300	11,100	122,000
2007	37,200	6,900	73,600	12,000	130,000
2008	38,900	6,690	73,100	13,900	133,000
2009	38,500	6,460	73,100	13,900	132,000
2010	40,100	6,770	73,000	13,700	134,000
2011	39,800	6,590	70,900	14,300	132,000
2012	38,500	6,800	68,300	13,900	127,000
2013	38,300	6,690	68,200	13,900	127,000
2014	34,500	6,160	62,200	12,500	115,000
2015	31,100	5,700	57,700	11,600	106,000
2016	29,300	5,800	51,800	10,700	97,600
Average Annual growth 2006-2016	-1.33%	-2.07%	-3.00%	-0.37%	-2.21%

Source: IHS Markit Regional eXplorer version 1156

Plate 5-4: Kouga Municipality tourist visitors per category 2006 to 2016 (Source: ECSECC, 2017)

The social context in which the development is proposed has changed in terms of population growth but this change does not affect the development. The development will however provide short to medium term relief in the unemployment of the area within which it is proposed.

5.2 Current Land Uses and Sectors

Current land uses along the existing road, the proposed realignment and on the BWF site is primarily agriculture. In terms of proximity to residential areas, the realigned road would be between 3 and 4 km south of Lower KwaNomzamo (the closest residential area of Humansdorp) and between 7 and 8 km north of St Francis Bay.

Economic activities in the wider region remain largely focussed on the agriculture and tourism sectors as the main economic drivers. Renewable energy projects are, however, gradually increasing in importance and there are currently five wind farms operating in the area, namely:

- Jeffrey's Bay Wind Farm to the north east of Humansdorp;
- Kouga Wind Farm to the north east of Oyster Bay;
- Tsitsikamma Wind Farm to the north west of Oyster Bay;
- Gibson Bay Wind Farm to the west of Oyster Bay; and
- Oyster Bay Wind Farm near Oyster Bay.

5.3 Biophysical Characteristics

The affected area can generally be described as a flat to gently undulating plain intersected by small non-perennial drainage lines.

The proposed development is in an area of shallow soils underlain by a dense clay horizon in the subsoil. These soils are of the Estcourt, Kroonstad and Sepane soil forms and are limited by shallow effective depth and by poor drainage. Because of the soil limitations, the site should have a maximum land capability of 8. Farming in the area comprises both dairy and beef cattle. Dairy cattle graze predominantly on irrigated kikuyu pastures and beef cattle on natural veld or planted perennial pastures. All the land impacted by the proposed road is used as dryland grazing for beef cattle. Long term natural grazing capacity of the site is high at 6 hectares per large stock unit.

5.3.1 Terrestrial Biodiversity

The site is located entirely within Humansdorp Shale Renosterveld (Vulnerable). The conservation target for Vulnerable Humansdorp Shale Renosterveld is 29 % and the proposed development will not have any impact of significance on the conservation target within the site or regionally, due to the minimal loss of natural or semi-natural vegetation. The Vulnerable status indicates that less than 60 % of the unit remains, but that ecosystem functioning is not currently under imminent threat by loss of natural habitat but implies that care should be taken in the future. There is a moderate level of transformation and utilization of this unit regionally and high levels of transformation locally due to the agricultural value of the area.

Surrounding vegetation units include Elands Forest Thicket, having a more developed woody (tree) element, and generally found on the slopes surrounding the Seekoeirivier to the north of the site with some elements on the watercourses along the eastern side of the site, but not affected by the proposed footprint.

Within the site, the proposed road will primarily be situated within transformed Osbosch Thicket - Renosterveld with crossing through areas having Humansdorp Perennial Stream vegetation. Osbosch Thicket - Renosterveld has a Vulnerable conservation status, with Humansdorp Perennial Stream having a Least Threatened conservation status. The areas where Humansdorp Perennial Stream is present (along watercourses) are however also designated as Ecological Support Areas. Impacts of road crossings to Ecological Support Areas will be minimal as the proposed road alignment has sought to minimise these impacts in consultation with specialists at the planning stage. A small portion of near-intact but degraded Renosterveld will be lost along the eastern-most 700 m of the route. The vegetation is intact on the north side of the fenceline but pastures on the south. Since the road centreline will be more or less along the fenceline, natural vegetation will only be impacted for half the width of the proposed road.

The site is situated outside of designated Critical Biodiversity Areas 1 (CBA 1) areas; however, CBA 2 areas are present, associated with the watercourse corridors that traverse

the site as well as a remnant pocket where the proposed road joins the MN 50182 District Road on the east side. The transformed cultivated lands are designated as Ecological Support Area 1 (ESA 2) status, with the remnant semi-intact vegetation being CBA 2. The layout is unlikely to have any significant impact on conservation targets or ecological processes associated with the vegetation units relative to existing impacts.

Table 5-1: Summary of the Biodiversity Characteristics of the Baseline Environment

Aspect	Description
Landscape and Community Description	
Aspect, Slope, Topography	Flat to gently undulating landscape
Substrate	Moderate sandy and clayey soils
Vegetation units	Renosterveld & Thicket
Total Ground Cover (%)	> 80 %
Tree Height (m) – Median (thicket)	3 - 8 m
Tree Cover (%) Aerial	< 5 %
Shrub Cover (%)	< 20 %
Herbaceous Cover (%)	
Grass Cover (%)	> 80 %
Bare soil/rock (%) and disturbed	< 5 %
Terrestrial Landscape Features	
Forest	No Forest is present, although forest thicket is present along the Seekoerivier to the north of the site.
Thicket	Thicket is present to the north and site of the site with remnant elements along drainage lines.
Grassland	Vegetation is primarily artificial grassland (pastures).
Fynbos/Grassy Fynbos	Fynbos elements are present in Renosterveld, but are not well developed within the site.
Riparian	Riparian vegetation is limited to aquatic habitat including the dams and along the watercourses. Generally, highly disturbed with pasture and other grasses dominant with occasional typical riparian species present (including sedges).
Wetland	Wetland habitat is present on site, in the form of small dams and other seep areas.
Estuaries	No estuaries are present
Dunes/Coastal	No coastal/dune habitat is present
Rocky Outcrop Habitat	No notable rocky outcrop habitat is present.
Fauna Nesting Sites	None observed, trees within the thicket pockets are likely to provide seasonal nesting sites for various small bird species.
Fauna Feeding Grounds	The pastures and renosterveld pockets are likely to provide suitable habitat for a range of faunal species.
Ecotones	Ecotones are present but limited to interface between thicket and renosterveld/pastures

Aspect	Description
Ecological Corridors	Thicket and riparian corridors along watercourses are likely important corridors.
Evolutionary Processes	None of significance within terrestrial environment
Transformed (housing)	Minimal, several dwellings are present.
Transformed (other)	Most of the site is transformed for agricultural use in the form of pastures.
Degraded (modified)	Old lands comprise a small proportion of the site, mostly in less favourable areas such as along the north facing slope near the northern boundary of the site and an area of Renosterveld in the south-eastern corner of the farm portion, where soils are shallow and poor.
Secondary vegetation	
Disturbances, Current Land Uses and Sources of Degradation	
Human disturbances	Human disturbance is high because of historical cultivation (pastures).
Habitat fragmentation	Fragmentation is high in the surrounding area comprising a mosaic of agricultural lands with remnant thicket pockets and watercourse corridors.
Invasive Alien Plants	Present in disturbed areas, primarily widespread weedy species with the occasional wattle or pine tree. Not a significant problem on the site.
Other degradation	Rubble and other rubbish are present.
Remaining intact habitat:	Intact habitat is present, although not abundant in the surrounding landscape and within the site (Thicket and Renosterveld).
Grazing (livestock)	Surrounding area and the site is extensively used for livestock grazing (cattle).
Hunting	Likely present in surrounding rural landscape
Conservation (passive)	General the area does contribute to passive conservation, having low population density and a mosaic of intact and transformed vegetation. Elevated conservation status of the vegetation units does give the area an elevated conservation importance locally and regionally.
Recreational (sport)	None
Other	None
Patterns of Biodiversity	
Flora	Flora diversity is low to moderate due to the presence of a two vegetation types, which are generally quite highly disturbed.
Fauna	Fauna diversity is low to moderate.
Species of Conservation Concern	A few species are potentially found in the region and vegetation units, none of significance were recorded within the site, other than several widespread but protected species, for which permits will be required. These are mostly limited to intact pockets of natural vegetation which are largely avoided by the amended layout.
Ecological Processes	
Gene dispersal barriers	Roads, settlements, agriculture, moderate to high fragmentation
Gene dispersal corridors	Extensive river valleys likely provide corridors for movement of a suite of fauna.
Aeolian (dune) processes	None
Climatic gradients	Climatic gradients are absent.

Aspect	Description
Rivers and Drainage Lines (Riparian Vegetation)	Vegetated drainage lines will provide ecological corridors in proximity to and within the site.
Refuges (outcrops/islands)	Rocky and other refuges are absent.
Fire	Renosterveld and Thicket are generally not prone to fire.
Ecotones/Tension zones	Ecotones are not well developed because of the limited vegetation unit, although interface between solid Thicket and Renosterveld will provide such habitat.
Erosion	Erosion is low within the site
Ecological Services	
Carbon storage	Renosterveld is considered a low carbon accumulator, Thicket a moderate to high carbon accumulator.
Provisioning Services	<p><u>Livestock grazing</u>: Grazing is prevalent in the area with moderate grazing capacity.</p> <p><u>Timber (Building materials)</u>: Extensive woodlands were likely used historically.</p> <p><u>Fuelwood</u>: Extensive woodlands likely used historically.</p> <p><u>Food</u>: None known</p> <p><u>Fibre</u>: None known</p> <p><u>Medicinal plants</u>: Various species in the surrounding area have medicinal properties and are most likely harvested informally.</p>
Other (ornamentals)	None known
Conservation Importance	
Current Distribution (extent)	Vegetation unit has a somewhat widespread regional distribution covering an extensive but localised area outside of the site footprint. More than 60 % is considered to be transformed.
Red Listed Species and other Species of Conservation Concern	A few species are potentially found in the region and vegetation units, none of significance were recorded within the site, other than several widespread but protected species. <i>Kniphofia uvaria</i> was noted within riparian vegetation along drainage lines.
Habitat for SSC	Several species of conservation concern are known from the general area, as well as the vegetation unit that is present. The site is likely to provide habitat viable potential for any of the mostly mobile faunal species as well as several flora species, although not considered to be significant.
Relative Conservation importance	The site has a moderate overall significance regionally as the vegetation has a locally widespread distribution.
Other Sensitivities	
Conservation importance	Moderate
Topography	Flat to gently undulating plains
Wetlands	Natural wetlands and seeps are present as well as several farm dams on the site or in the vicinity.
Rehabilitation potential	Rehabilitation potential is moderate for the site, as the development is largely transformed.
Community structure	Community structure is relatively simple compared to more complex units but having a range of growth forms being present. Historical disturbance has likely played a role.

5.3.2 Flora and Fauna

The proposed site consists of secondary grasslands, wetlands, and seeps with a large portion of the area consisting of agricultural land for the cultivation of crops, pastures, and livestock grazing. There are numerous wetlands through the site which are vegetated with indigenous vegetation. Rocky outcrops are mainly artificial and limited to small pockets of rocks which were removed and piled outside of cultivated lands. Several small dams and ponds are present within the site.

The faunal diversity of the central and western regions of the Eastern Cape, including Humansdorp and Jeffreys Bay, is relatively well-known. However, this diversity has been affected by the long history of human impact in the region and the currently degraded state of much of the area surrounding the study sites. The proposed development involves actions that will compound this transformation.

None of the screening tool flagged species were noted during the site visit, nor recorded in previous site visits including the assessment for the Banna ba Pifhu Wind Farm and its associated Grid Connection. Due to the transformed nature of the site and current land use (agriculture) it is not anticipated that any of the sensitive species would be present or likely to be affected. Similarly, several endemic and range restricted flora species are known from the surrounding area. None were recorded, nor likely to be present.

5.3.2.1 Avifauna Species

According to the DFFE screening tool report, and the Terrestrial Animal Species protocol, the habitat where the proposed road alignment is located is mostly medium sensitivity, which is not linked to avifauna. There is a section at the start of the road of approximately 700 m where the alignment borders on the one side on an area which is indicated as High sensitivity by the screening tool, which is linked to the potential occurrence of three species of conservation concern (SCC) Black Harrier *Circus ranivorus* (Locally and Globally Endangered), African Marsh Harrier *Circus ranivorus* (Locally Endangered) and Denham's Bustard *Neotis denhami* (Locally Vulnerable). The rest of the alignment runs through habitat that has been transformed through the cultivation of pastures, basically consisting of short, intensively managed grassland with almost no shrub element. The section where the first 700 m of the road is located has taller grass with a limited, scattered shrub component. The last-mentioned section may occasionally contain foraging Denham's Bustard. It is unlikely to be used with any regularly by Black Harrier and African Marsh Harrier as the habitat is not very suitable for both species.

5.3.3 Rivers, Watercourses and National Freshwater Ecosystems Priority Areas

The study site is located on a plateau between Seekoei and Krom / Geelhoutboom rivers, spanning the respective quaternary catchment K90E and K90F. The proposed development does not have any direct link with the estuaries associated with these systems due to the nature of the unknown tributaries within the site or fragmentation as a result of all the farm dams or road networks within the region.

The National Wetland Inventory v5.2 (2018) spatial data indicated several aquatic systems that were observed on site. During the original assessment, these were then ground-truthed and the extent of the watercourses and wetlands were delineated and used as the basis of the 2022 proposed layout.

The observed waterbodies could be divided into two broad groups, namely watercourses (drainage lines) and natural wetlands. With respect to wetlands, based on the National Wetland Classification System, level 1 to 6, the observed wetland systems are typical of Inland Systems (Level 1), with no direct connection to the sea, within the South Eastern Coastal Belt Ecoregion (Level 2). All wetland areas were found either on a plain or within

valley floor landscape units (Level 3), corresponding to the depression (pan) hydrogeomorphic unit (Level 4). None of these systems or the 500 m regulated zone will be affected by the proposed alignment.

The study area drainage lines were associated with two main watercourses, which could be classified as headwater systems, with limited channel formation. Thus, due to their position in the catchment (catchment divide plateaux), with limited surface water runoff being found within these systems, no permanent riparian (vegetation) zones were observed (Level 5). These areas seem to have been wetland areas prior to the conversion of the area to agricultural production, but are now reduced to small functional drainage lines.

The Present Ecological State (PES) of a river represents the extent to which it has changed from near pristine condition (Category A) towards a highly impacted system where there has been an extensive loss of natural habit and biota, as well as ecosystem functioning (Category E). The PES scores have been revised for the country and based on the current models, aspects of functional importance as well as direct and indirect impacts have been included (DHSWS, 2014). The current PES system also incorporates Ecological Importance (EI) and Ecological Sensitivity (ES) separately as opposed to Ecological Importance and Sensitivity (EIS) in the old model, although the new model is still heavily centered on rating rivers using broad fish, invertebrate, riparian vegetation and water quality indicators. The Recommended Ecological Category (REC) is still contained within the updated models, with the default REC being B, when little or no information is available to assess the system or when only one of the above-mentioned parameters are assessed or the overall PES is rated between a C or D.

The Present Ecological State scores for the wetlands were C, however the saline depression was rated as having a high conservation importance and sensitivity. This was based on the unique geomorphological setting and plant species assemblages of this wetland, which forms part of any great network of similar wetlands within the region. The PES of the drainage lines were considered low due to farming related impacts (PES = D) and presently contribute little in terms of wetland function or conservation importance. However, these should still be avoided by the development, so as to not further impact on the local hydrological regime, increasing the cumulative impacts of all the farm dams.

This is substantiated by the fact that the survey area falls outside of any Freshwater Ecosystem Priority Areas (FEPA) and / or Wetland Clusters, associated with the Seekoei River / Estuary, however the road will intersect Ecological Support Area identified in the Eastern Cape Biodiversity Conservation Plan (ECBCP), 2019.

5.4 Noise

The road (to be re-aligned) is located in a naturally quiet rural area, with the road carrying very low levels of traffic. The road is mainly used by the local farmers staying in the area. Existing noise levels (due to traffic) are low but will increase during the construction phase of the proposed Banna ba Pifhu Wind Farm and minimally during the operational phase of the Wind Farm.

5.5 Visual and Landscape

The proposed site is in a landscape composed of coastal resort and agricultural elements. Dairy and beef farming is the main agricultural activity. The proposed re-aligned road would traverse transformed agricultural, rural land, with the inclusion of cultivated fodder, grazing pastures and old fields. The terrain is relatively flat with gentle undulating features and there are also a number of minor drainage swales. The realignment of the road will not impact the current visuals and landscape once operational. During the construction phase, the landscape will alter slightly, only for the duration of the phase, due to increased traffic and general construction vehicles and activity.

5.6 Cultural Landscape

Historical farm structures and related features occur widely but are generally unaffected by road developments which are designed to avoid them. Although it is unaffected, historical aerial imagery was consulted to determine whether any historical features were present along the alignment. Plate 5.5 shows an aerial view of the site dating to 1961. The project layout is overlaid and it is evident that no houses or farmsteads occur close to the new alignment. The nearest is the existing farmstead to the south which lies along the southern edge of the existing public road on Portion 4 of Farm 912. It is also evident that this road, while present in 1961, was substantially smaller (perhaps being only farm tracks) and followed a different alignment in the far east. The R330 has also been realigned since 1961 in this area. Many other houses are evident in the surrounding area as well showing that structures greater than 60 years of age abound in the vicinity.



Plate 5-5: 1961 (Job 459_016_08242) aerial view of the study area showing the proposed re-alignment alternatives (purple and green lines). The location of the existing public road is shown by the black line.

It is evident from the 1961 aerial view shown in Plate 5.5 that parts of the area have been cultivated for many years with grazing lands in between (though these may also have been ploughed in the past to allow for grass growth). All fields through which the proposed road runs are ploughed today. The cultural landscape is characterised by scattered farmsteads, gravel roads, irrigation infrastructure and green fields – either irrigated or dryland crops, or grazing grass. The sandstone corner beacon presented in Plate 5.6 and Plate 5.7 below, can be seen as a component of the cultural landscape on that it marks the division of the land into farms.



Plate 5-6: Sandstone farm boundary beacon looking towards the southeast



Plate 5-7: Location of the sandstone boundary beacon

The R330, which runs past the eastern edge of the site, can be regarded as a minor scenic route in that it serves as the main access to St Francis Bay which relies on tourism for a portion of its income. However, the realigned road will not affect the R330 in any way. This road was present in 1961 but following a different alignment. Other roads in the vicinity are minor gravel roads and are not considered scenic routes.

The cultural landscape is largely a rural landscape but with significant electrical inputs in the form of adjacent wind farms and associated infrastructure. Although still having aesthetic value, this value is diminished by the presence of this infrastructure.

5.7 Heritage and Archaeology

A survey of the site showed the surroundings were mainly covered in low vegetation (largely grass) with the substrate only minimally visible. A sandstone corner beacon made from a single block of slab was found at the northernmost point of an alternative assessed which has subsequently been amended to the alternatives assessed in this BA report. The site landscape is described as rural dominated by agriculture. Agricultural land is either dryland or livestock grazing, and some centre pivots have been developed in the area. Existing public roads are found at the west and east ends of the proposed road alignment. The land is very flat, and was found to be entirely vegetated.

The archaeological resources are deemed to have low cultural significance at the local level for their scientific value (Grade GPC), but a very small chance does exist for material of higher significance – perhaps low-medium or even medium (Grade GPB or GPA) – to exist beneath the surface.

Historical graves are known to occur in the area in farm graveyards and also as single isolated graves. These are easily identified by their headstones, although one located by Nilssen (2019b) was heavily overgrown with grass and had only the top of the low headstone visible. The other concern is unmarked precolonial graves which can be found almost anywhere where the substrate can be excavated by hand. The study area with its gravel substrate is not conducive to burials, with graves most often encountered in very sandy soils. Nevertheless, the chance of graves occurring cannot be completely discounted.

Graves are deemed to have high cultural significance at the local level for their social value but are highly unlikely to occur. They would be allocated a grade of IIIA.

5.8 Palaeontology

In the assessment of the proposed Banna ba Pifhu Wind Farm, John Almond noted that the study area is entirely underlain by Devonian marine rocks of the Lower Bokkeveld Group (Ceres Subgroup). These shallow marine sediments are potentially highly fossiliferous, but in practice on the southern coastal plain their fossil content has been largely or completely obliterated by high levels of deformation (e.g. cleavage development, especially within mudrocks) and by deep chemical weathering.

5.9 Traffic and Transport

The existing District Road MN50182 is a low volume gravel road with poor geometry in sections. Aside from access by the public, this road is used by landowners to access their property. Although this road will be realigned, access by local landowners remain unaffected. Land-owners to the north of Geelhoutboom River, who access MN50182 via the orange road alignment shown in Plate 5.8 below, will continue to enjoy access to the existing MN50182 as well as to the realigned MN50182. Servitude right-of-way will be registered over the existing MN50182 to ensure legal access to the affected properties north of the Geelhoutboom River. Properties to the south of the Geelhoutboom River, who access Oyster Bay Road via the green road alignment in the Plate 5.8 below, will continue to take access via Oyster Bay Road.

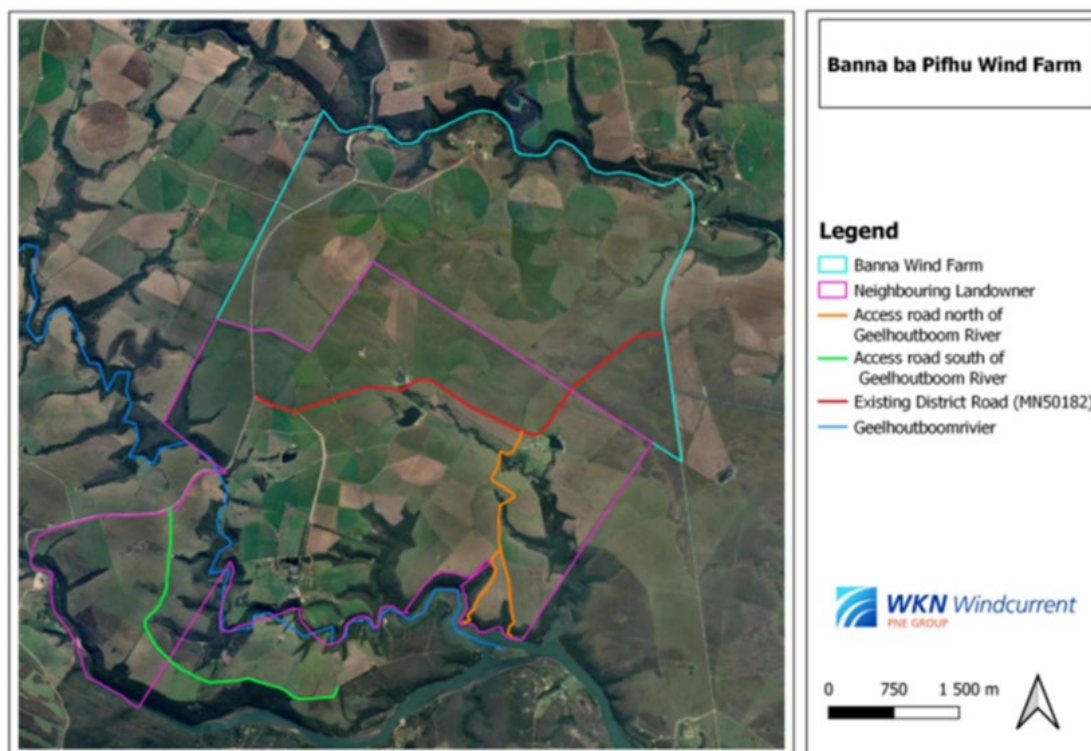


Plate 5-8: Property Access to MN50182 District Road

6 ALTERNATIVES ASSESSMENT

In accordance with the requirements of Appendix 1 of the 2014 EIA Regulations (as amended), an assessment report must contain consideration of all alternatives, which can include activity alternatives, site alternatives, location alternatives and the “No Development” alternative. At a minimum, this chapter must address:

- The consideration of the No Development alternative as a baseline scenario;
- A comparison of reasonable and feasible selected alternatives; and
- The provision of reasons for the elimination of an alternative.

Alternatives are required to be assessed in terms of social, biophysical, economic and technical factors. For applications submitted to the DFFE for environmental authorisation in terms of the NEMA, (Act 107 of 1998) and National Environmental Management: Waste Act (NEM:WA, No. 59 of 2008), in respect of listed activities that have been triggered, this project is expected to assess alternative route options, locations, and the design and layout of the development.

When assessing alternatives, they should be “practical”, “feasible”, “relevant”, “reasonable” and “viable”, and that I&APs should be provided with an opportunity to provide input into the process of formulating alternatives. In this instance, this chapter provides an overview of the alternatives that have been considered for this development.

6.1 The No-Development: No – Go Option

The re-alignment of the road along the BWF property boundary is expected to reduce the risk of potential disturbance, in particular noise and dust pollution, to neighbouring landowners caused by vehicle movements during the construction and operation phases of the BWF through the use of the MN50182. The no-go option would cause the opportunity for less direct impact on adjacent farmers to be lost. If the road realignment were not implemented, then the existing road would be used to access the wind farm site from the

south during the construction and operational phases, which is not desired from a socio-economic perspective. The use of the existing road and the realignment of the road will benefit more than if the no-go option were to be implemented. Therefore, although feasible and reasonable the no - go option is not the preferred option and is less desirable.

6.2 Route Alternatives

Two proposed route alternatives have been assessed in this report, of which only the preferred requires environmental authorisation.

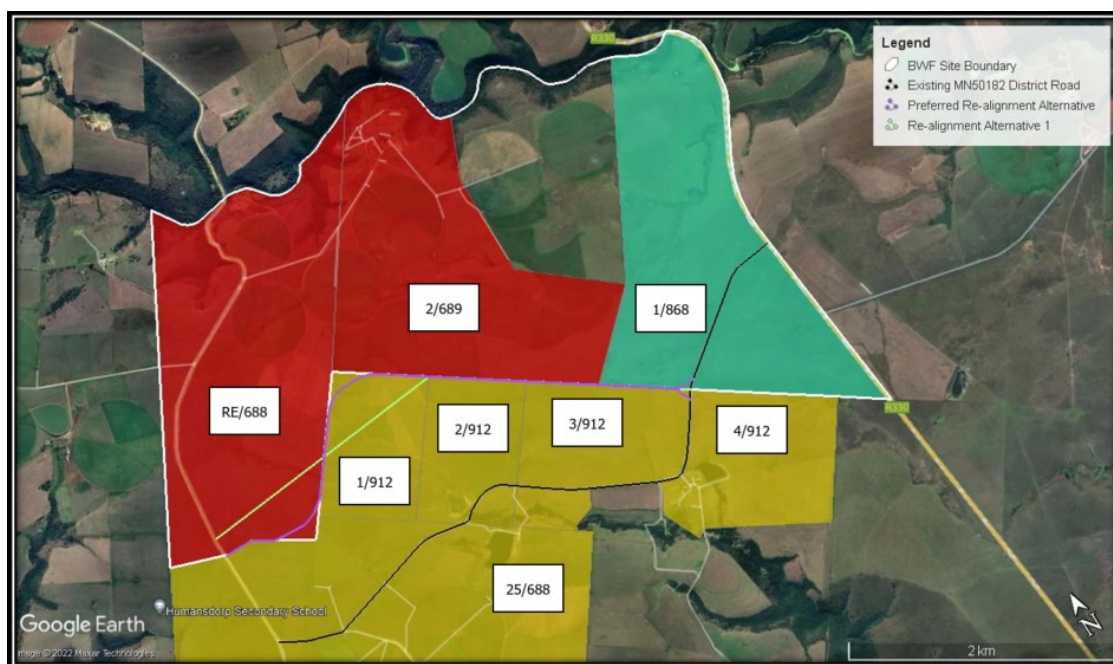


Plate 6-1: Proposed Re-alignment and surrounding landowners

Table 6-1: Comparison of the Proposed Alternatives

Alternative	Summary of Assessment
Preferred Alternative	<ul style="list-style-type: none"> • Purple line presented in Plate 6.1. • Re-aligned along existing property boundaries for majority of the route. • Only cuts through a small part of Portion 1 of Farm 912. • More curved, which would prevent sudden turns by motorists using the road at night. • Less likely to cause accidents based on design. • Preferred from a traffic and visual perspective.
Alternative 1	<ul style="list-style-type: none"> • Green line presented in Plate 6.1. • Only re-aligned along the existing property boundaries towards the eastern end of the route. • Cuts through parts of Portion 1 of Farm 912 as well as RE of Farm 688. • Includes a sharp 90-degree bend, which may be a 'surprise' to motorists using the road at night. • More likely to cause accidents based on design. • Least preferred from a traffic and visual perspective.

The specific characteristics of the study area described below, confirms feasibility and motivates that either Alternative is acceptable:

Land Availability and Land Use: In order to develop the re-aligned road, sufficient land is required. Land capability evaluation is 8 across the project area. There are no agricultural

limitations and the development will not affect potential of agriculture in the area; thus, land use is available.

Geographical considerations: The affected area can generally be described as a flat to gently undulating plain intersected by small non-perennial drainage lines. These are considered good conditions for the construction of the road.

Sensitive environmental features considerations: Specialist assessed both alternatives. The assessment of specialists and review of public data of the study area assisted in buffering and avoiding any potential sensitive areas. The EMPr includes mitigation measures, if any specific, for the development.

The following assisted in determining the Preferred Alternative:

- Design and construct a road which has good road design and strives towards a road environment that is "non-surprising" (where motorists are not faced with unexpected situations), as well as "forgiving" (where driving error is not punished but rather where it can be corrected).
- On horizontal curves of each of the alternatives. Because of the limited sight distance and the increased probability of skidding, increased accident rates are observed. The majority of accidents on horizontal curves concern single vehicle run-off accidents and head-on collisions. Horizontal curves of low radii lead to road safety problems, while the related risk rates increase significantly for smaller curve radii.
- From a visual perspective this is the preferred route as it has a more flowing alignment that would blend with the gently undulating topography.
- From a traffic perspective, the Preferred Alternative road alignment is more favourable in that it follows the cadastral boundary more closely and on the northernmost section it is on higher ground that avoids marshy ground. The curve radii should be to accommodate a 60km/h travelled speed.

7 DESCRIPTION OF THE PREFERRED ALTERNATIVE TECHNICAL SPECIFICATIONS

As described in previous sections, the Applicant requires environmental authorisation to re-align the MN50182 District Road which connects the DR1763 Oyster Bay Road to the R330 St Francis Bay Road in the Eastern Cape Province. The Applicant requires environmental authorisation of the **Preferred Alternative** to re-align the MN50182 District Road which connects the DR1763 Oyster Bay Road to the R330 St Francis Bay Road in the Eastern Cape Province.

The Preferred Alternative is approximately 4.46 km in length and will be 5.5 m wide once constructed. The road will be a single carriageway and will be constructed as a gravel road, similar to what the other district roads in the area to maintain the sense of place.

The proposed road will be re-aligned to run between the BWF development site (Portion 1 of Farm 868, Portion 2 of Farm 689, and Remainder of Farm 688) and the adjacent Farms (Portion 4 of Farm 912, Portion 3 of Farm 912, Portion 2 of Farm 912, Portion 1 of Farm 912 and Portion 25 of Farm 688). Although this road will be re-aligned, access by local landowners will remain unaffected.

MN50182 District Road is a low volume gravel road with poor geometry in sections, this was evidenced by the gravel roads serving the farms and low traffic volumes observed during the traffic specialist site visit on 31 November 2021 and 1 December 2021. At a sub-regional level, the road provides a connection between the R330 and the DR01763. It also provides an alternative (that is slightly longer but potentially in better condition) to the shortest route between Cape St Francis and St Francis Bay to Oyster Bay. The re-aligned road would maintain all of these connections thereby not impacting on access as the low traffic volumes would simply divert onto the re-aligned road.

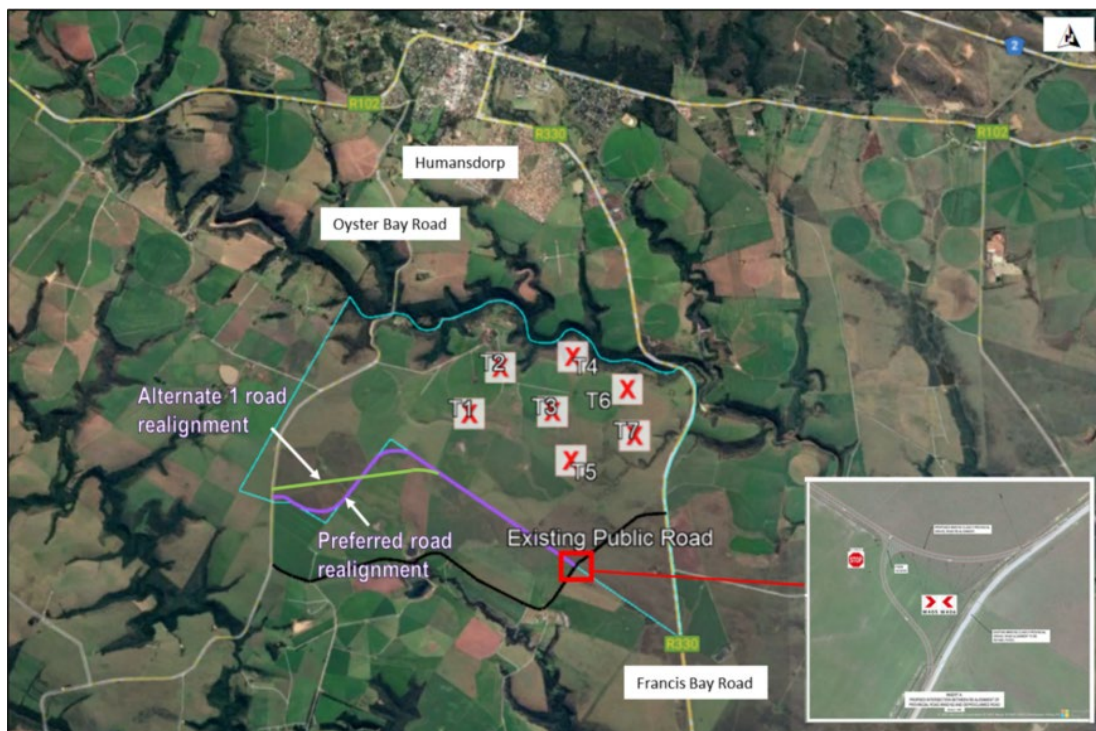


Plate 7-1: Location of the Proposed Development
(Plate 7-1 Key: Existing Road – black line; Preferred Alternative – purple line; Alternative 1 – green line; Banna ba Pifhu Site Boundary – blue line)

The technical specifications of the proposed road alternatives are presented in Table 7.1 and the Geographical Co-ordinates are presented in Table 7.2 below. Figure 7.1 presents the Site Development Plan.

Table 7-1: Technical Details of the Proposed Road Alternatives

Aspect	Proposed Specifications
Length of the proposed re-aligned alternatives	Preferred Alternative: Approximately 4.46 km
	Alternative 1: Approximately 4.05 km
Width of the proposed re-aligned alternatives	5.5 m wide
Development footprint	2.45 hectares
Single or dual carriageway	Single
Road call type / service level	Class 5 Provincial Gravel Road
Speed limit	60 km/h
Road reserve width	12 m
Road surface type	Gravel
Storm water drainage design	1:10 year Recurrence Interval (RI)
Laydown area	Approximately 50 x 50 m Required
Construction camp area	Approximately 50 x 50 m Required
Construction period	Approximately 3 – 6 Months
Affected land portions	Road will run parallel between the site boundary of two land parcels presented in Table 0.1 of this BA Report.

Table 7-2: Geographical Co-ordinates of the Proposed Road Alternatives

Aspect	Proposed Road Geographical Co-ordinates	
	Latitude	Longitude
Preferred Alternative		
Start (at DR1763 Oyster Bay Road)	34° 4'38.91"S	24°44'47.60"E
Bend Point	34° 4'38.97"S	24°44'56.07"E
Bend Point	34° 4'41.91"S	24°45'2.33"E
Bend Point	34° 4'42.42"S	24°45'12.32"E
Bend Point	34° 4'41.23"S	24°45'16.23"E
Bend Point	34° 4'38.68"S	24°45'20.16"E
Bend Point	34° 4'19.45"S	24°45'39.29"E
Bend Point	34° 4'19.49"S	24°45'51.82"E
Middle	34° 4'23.51"S	24°45'58.80"E
End (at R330 St Francis Bay Road)	34° 5'3.65"S	24° 47'9.75"E
Alternative 1		
Start (at DR1763 Oyster Bay Road)	34° 4'34.11"S	24°44'47.54"E
Middle	34° 4'27.56"S	24°46'5.08"E
Bend Point	34° 4'27.50"S	24°46'6.02"E
Start (at DR1763 Oyster Bay Road)	34° 5'3.65"S	24° 47'9.75"E
Construction Camp		
Centre Point	34° 05'03.25"S	24°47'13.34"E

7.1 Description of the Design Phase

During the design phase a contractor will be appointed by the developer to produce the final method statements and obtain necessary permits for the proposed development.

Measures as indicated in the Environmental Management Programme (Appendix B) must be implemented during this phase of the development.

7.2 Construction Period and Trip Generation

The road construction period is expected to last approximately 3 - 6 months, subject to the final design, weather and ground conditions, including time for testing and commissioning. The construction would require approximately 20 workers over a short period. A temporary construction camp would be placed in a strategic position agreed with the BWF site landowner. The camp will have a site office, ablution facility and sufficient storage space for construction plant and materials, and will be temporarily fenced. The location will be on transformed land or the same camp of the BWF will be used.

Typical vehicles to be used on the road construction and average trips to site, are shown below. These vehicles will drive to or be transported to site (i.e., grader on lowbed truck) and should remain on site for the duration of the construction.

- Bulldozer

- Excavator / Loader
- Grader
- Compactor
- Dump Truck
- Water Tanker
- Low Bed Truck

The process for the construction is described below:

- Contractor site establishment
 - Compliance to health and safety regulations
 - Compliance to EMPr
- Earthworks
 - Site Survey and Setting Out
 - Clear and grub and topsoil removal. Topsoil to be stored according to EMPr
 - Excavation – Cut to Fill and Testing of in-situ material and fill layers
- Stormwater
 - Construction of stormwater culverts and headwall
- Layerworks
 - Construction of Wearing Coarse layer and testing of layers
- Construction Side Drains
- Reinstatement of topsoil
- Construction of road signage
- Reinstatement and construction of farm fencing and gates as required

The road base will be locally sourced (balancing cut and fill materials) and the wearing course will be sourced from existing borrow pits in the area. The 200 mm thick wearing course requires approximately 5 000 m³ which equates to some 300 x 20m³ truck deliveries. The 600 trips (300 in / 300 out) over 2 months equates to an average of 14 truck trips per working day (7 in / 7 out), assuming that the wearing course is constructed in 2 months.

The trip generation for equipment, machinery and materials for the road build are negligible, with the bulk of work being carried out on-site and not on public roads.

Once constructed, the road will be transferred to the Eastern Cape Department of Transport for ownership and maintenance.

8 NEED AND DESIRABILITY

The re-alignment of MN50182 District Road is required before the construction and operation of the proposed Banna ba Pifhu Wind Farm (BWF) can be realised. The road will facilitate direct access to the BWF from the south during construction and operations. Currently, the existing road traverses the properties of neighbouring landowners. The realignment of the road along the BWF site boundary is expected to reduce the risk of potential disturbance, in particular noise and dust pollution, to these neighbouring landowners caused by vehicle movements.

Should the application not receive a favourable decision, the impact to neighbouring properties will delay the development of the BWF, which is strongly supported by both national and provincial policies as well as planning documents.

The need and desirability assessment answers the question of whether the activity or development is being proposed at the right time in the right place. The guidelines³ pose questions that should be considered in this investigation, which are addressed in Table 8.1 and Table 8.2 below.

³ [Guideline on need and desirability in terms of the environmental impact assessment \(EIA\) regulations \(www.gov.za\)](http://www.gov.za)

Table 8-1: Ecological Considerations of Need and Desirability for the Proposed Re-alignment of the District Road

"Securing ecological sustainable development and use of natural resources"⁴			
Question	Answer	Reference	
<i>How will this development (and its separate elements/aspects) impact on the ecological integrity of the area?</i>	<ul style="list-style-type: none"> The Fauna & Flora Specialist study found that the impacts associated with the development are likely to be low after mitigation and no long-term medium or high post-mitigation negative impacts are likely to occur as a result of the development. The proposed re-aligned district road will predominantly be within transformed areas and several watercourse crossings and/or seep areas with a short section (700 m) of the proposed re-aligned district road passing through indigenous vegetation. The proposed re-aligned district road is bounded on the south side by transformed lands, hence it will not significantly increase habitat fragmentation and it is not anticipated that the other crossings will significantly fragment the landscape significantly above high baseline levels of fragmentation. Furthermore, given the current level of invasion of alien plant species on the project site and the severe degradation and transformation of natural vegetation, the combined effects of alien removal and propagation of native, endemic and endangered species to rehabilitate transformed areas would offset the negative ecological impact of the proposed development and potentially improve the ecosystem functioning and connectivity on the site. 	Volume II: Fauna & Flora Specialist Study	
<i>How were the following ecological integrity considerations taken into account?</i>	<i>Threatened Ecosystems</i>	<ul style="list-style-type: none"> Freshwater and wetland information was extracted from the National Freshwater Ecosystem Priority Areas assessment⁵. Important catchments and protected expansion areas were extracted from the National Protected Areas Expansion Strategy 2008 (NPAES). Critical Biodiversity Areas were extracted from the 2017 Western Cape Biodiversity Spatial Plan (WCBSP). No threatened ecosystem falls within the development area. 	Volume II: Aquatic Specialist Study and Fauna & Flora Specialist Study
	<i>Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where</i>	<ul style="list-style-type: none"> An ecological sensitivity map of the site was produced by integrating information collected on-site with available ecological and biodiversity information. Sensitive features such as wetlands, drainage lines, water bodies, steep slopes and rocky outcrops were mapped and appropriately buffered. 	Volume II: Fauna & Flora Specialist Study

⁴Section 24 of The Constitution of South Africa refers.

⁵ Nel, J.L., Murray, K.M., Maherry, A.M., Petersen, C.P., Roux, D.J., Driver, A., Hill, L., van Deventer, H., Funke, N., Swartz, E.R., Smith-Adao, L.B., Mbona, N., Downsborough, L., Nienaber, S. (2011). Technical Report for the National Freshwater Ecosystem Priority Areas project. WRC Report No. K5/1801.

"Securing ecological sustainable development and use of natural resources"⁴		
Question	Answer	Reference
<i>they are subject to significant human resource usage and development pressure</i>		
<i>Critical Biodiversity Areas ("CBAs") and Ecological Support Areas ("ESAs")</i>	<ul style="list-style-type: none"> • Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) in the study area were obtained from the 2019 Eastern Cape Biodiversity Conservation Plan. • The site is situated outside of designated Critical Biodiversity Areas 1 (CBA 1) areas; however, CBA 2 areas are present, associated with the watercourse corridors that traverse the site as well as a remnant pocket where the proposed road joins the MN 50182 district road on the east side. The transformed cultivated lands are designated as Ecological Support Area 1 (ESA 2) status, with the remnant semi-intact vegetation being CBA 2. • The layout is unlikely to have any significant impact on conservation targets or ecological processes associated with the vegetation units relative to existing impacts. 	Volume II: Fauna & Flora Specialist Study
<i>Conservation targets</i>	<ul style="list-style-type: none"> • Conservation targets was assessed and ground-truthed by the ecological specialist. • The conservation target for Vulnerable Humansdorp Shale Renosterveld is 29 % and the proposed development will not have any impact of significance on the conservation target within the site or regionally, due to the minimal loss of natural or semi-natural vegetation. 	Volume II: Fauna & Flora Specialist Study
<i>Ecological drivers of the ecosystem</i>	<ul style="list-style-type: none"> • The key ecological drivers of ecosystems on the site and in the vicinity were assessed by the Ecological Specialist. • The specialist concludes that the potential for disruption of ecological processes and their drivers is low, particularly when compared to the major impact in the area - transformation for agriculture. 	Volume II: Fauna & Flora Specialist Study
<i>Environmental Management Framework</i>	<ul style="list-style-type: none"> • See Volume II Section 2 of the Fauna and Flora Impact Assessment Report. 	Volume II: Fauna & Flora Specialist Study
<i>Spatial Development Framework</i>	<ul style="list-style-type: none"> • See Volume II Section 2 of the Fauna and Flora Impact Assessment Report. 	Volume II: Fauna & Flora Specialist Study

"Securing ecological sustainable development and use of natural resources"⁴			
Question		Answer	Reference
<p><i>Global and international responsibilities relating to the environment (e.g. RAMSAR sites, Climate Change, etc.)</i></p>		<p>All global responsibilities to which South Africa is signatory or party to were assessed within this report. Applicable international treaties and conventions are:</p> <ul style="list-style-type: none"> • The Convention on Biological Diversity (CBD) (1993) • The Ramsar Convention, 1971 • The Convention on the Conservation of Migratory Species of Wild Animals (CMS or Bonn Convention) (1983) • The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) (1999) 	<p>Volume I: Section 3</p>
<p><i>How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?</i></p>		<ul style="list-style-type: none"> • The endemic and other protected species that are present are generally widespread distributions and the activity is unlikely to pose any significant threat to any species or population. Most of the proposed road footprint is within cultivated lands, old lands, and disturbed areas where the risk is low. • The proposed development can disturb listed plant species and vegetation from clearing of the development footprint, soil erosion and alien plant invasion. Increased levels of pollution, noise, disturbance and human presence can impact negatively on faunal communities. Biodiversity value and ecological functioning of the proposed development area are potentially affected by the development at a low scale. • Before and during the Basic Assessment process detailed specialist studies were conducted to identify areas most environmentally suitable for development within the proposed development site boundary. As a result of these studies a development layout was produced that avoids sensitive areas and identified constraints. This layout was then assessed by the specialists in their specialist reports. • The specialists proposed mitigation measures to further reduce residual risks or enhance opportunities during phases of the development. With implementation of these mitigation measures, all identified negative impacts are expected to be reduced to acceptable levels of medium or low negative significance. Positive impacts are expected to enhance the opportunities of vegetation rehabilitation and disturbance to neighbouring properties. Mitigation measures, including management plans proposed by the specialists are included in the EMPr for each phase of the project. 	<p>Volume I App B: EMPr; and Volume II Specialist Reports</p>
<p><i>How will this development pollute and/or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?</i></p>		<ul style="list-style-type: none"> • The EMPr provides measures for avoidance and minimisation, as well as enhancing any potential positive impacts. It also includes management plans to be implemented during phases of the development which will limit the degradation of the environment. • The construction of the development will be for a short period of time, approximately 3 - 6 months, and if measures and plans are followed accordingly, negative impacts will remain low significance. 	<p>Volume I App B: EMPr</p>

"Securing ecological sustainable development and use of natural resources"⁴		
Question	Answer	Reference
<i>What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise, reuse and/or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?</i>	<ul style="list-style-type: none"> • The generation of waste will largely be restricted to the construction phase of the project required to excavate the area for the development of the proposed re-aligned road. • The EMPr details specific mitigation measures that must be implemented for the appropriate management and minimisation of waste. • Registered service providers will be utilised to transport solid waste to registered landfills. 	Volume I App B: EMPr
<i>How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?</i>	<ul style="list-style-type: none"> • A Heritage Assessment Report was produced to confirm any cultural significance in the study area, although the DFFE screening tool report identified the impacts to the cultural landscape as low sensitivity. Comment will also be requested from the Eastern Cape Provincial Heritage Resources Authority. There will be no impacts to the cultural heritage. 	Volume II: Heritage Report
<i>How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?</i>	<ul style="list-style-type: none"> • The re-alignment of the road will not require the use of nor will it have an impact on non-renewable resources. • The road is proposed for up to 1.2 km and the material required is not proposed to cause detrimental loss of resources and the use of recycled material will be recommended in the EMPr. 	Volume I App B: EMPr

"Securing ecological sustainable development and use of natural resources"⁴		
Question	Answer	Reference
<p><i>How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardise the integrity of the resource and/or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts?</i></p> <p><i>Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e. de-materialised growth)? (note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life)</i></p> <p><i>Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e. what are the opportunity costs of using these resources this the proposed development alternative?)</i></p>	<ul style="list-style-type: none"> • The re-alignment of the road will not require the use of nor will it have an impact on non-renewable resources. • The road is proposed for up to 1.2 km and the material required is not proposed to cause detrimental loss of resources and the use of recycled material will be recommended in the EMPr. • Construction of the road will require use of water, a renewable natural resource. • There are no operational impacts of the development which can be controlled or managed by the developer. • There is no long-term effect on the environment and its resources. Once constructed, the road will contribute to the positive impact of providing a safer road to traverse from Oyster Bay Road to the R330 St Francis Bay Road, Eastern Cape Province. 	n/a
<p><i>Do the proposed location, type and scale of development promote a reduced dependency on resources?</i></p>	<ul style="list-style-type: none"> • The alternatives assessed and proposed are suitable at the proposed location and will not require a great demand on resources as the construction period will be short-term and no operational impacts and measures are required. 	n/a

"Securing ecological sustainable development and use of natural resources"⁴			
Question		Answer	Reference
<i>How were a risk-averse and cautious approach applied in terms of ecological impacts?</i>	<i>What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?</i>	<ul style="list-style-type: none"> In terms of best practice guidelines followed by the independent Ecological Specialist, a precautionary and risk-averse approach is adopted for projects with potential impacts on biodiversity. In order to adhere to the best-practice guidelines, the following approach forms the basis for the study approach and assessment philosophy: The study includes data searches, desktop studies, site walkovers / field survey of the property and baseline data collection, describing: Broad ecological characteristics of the site and its surrounds in terms of any mapped spatial components of ecological processes and/or patchiness, patch size, relative isolation of patches, connectivity, corridors, disturbance regimes, ecotones, buffering, viability, etc. 	Volume II: Fauna & Flora Specialist Study
	<i>What is the level of risk associated with the limits of current knowledge?</i>	<ul style="list-style-type: none"> Many fauna are difficult to observe in the field and their potential presence at the site must be evaluated based on the literature and available databases. In many cases, these databases are not intended for fine-scale use and the reliability and adequacy of these data sources relies heavily on the extent to which the area has been sampled in the past. The risk associated with assumptions and limits of current knowledge is the potential for information being assessed to be incorrect. This would translate to erroneous impact identification and mitigation measures. This risk is expected to be low for this particular BA due to extensive desktop and site based studies conducted for the development as well as the BWF. 	Volume II: Fauna & Flora Specialist Study
	<i>Based on the limits of knowledge and the level of risk, how and to what extent was a risk adverse and cautious approach applied to the development?</i>	<ul style="list-style-type: none"> Current gaps in knowledge include confirmation on the preferred route to develop. Ways in which these gaps are addressed are to consider the worst-case scenarios in terms of avoidance of watercourses and developing on cultivated land. Mitigation measures to manage these impacts have been identified. Adopting a risk-averse and cautious approach in all stages of the impact assessment allows one to minimise the chance of assessing incorrect information and identifying erroneous impacts. This precautionary approach was utilised throughout the BA process. 	Volume II: Specialist Studies
<i>How will the ecological impacts resulting from this development impact on people's environmental right in terms following:</i>	<i>Negative impacts: e.g. access to resources, opportunity costs, loss of amenity (e.g. open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts,</i>	<ul style="list-style-type: none"> Throughout the BA process any negative impacts of the proposed development are identified through specialist input. The presented development footprint seeks to avoid these negative impacts. Impacts were considered in the design of the development. Negative environmental impacts were thus minimised. Mitigation measures are identified to further minimise negative impacts. 	Volume II: Visual / Landscape Impact Assessment and

"Securing ecological sustainable development and use of natural resources"⁴		
Question	Answer	Reference
<p><i>visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?</i></p>		Social Statement
<p><i>Positive impacts: e.g. improved access to resources, improved amenity, improved air or water quality, etc. What measures were taken to enhance positive impacts?</i></p>	<ul style="list-style-type: none"> • Positive impacts are identified and assessed by specialists during the BA process. Measures to enhance these positive impacts are provided by the specialists. • Enhancement measures for positive impacts are provided in the Social Impact Assessment. 	Volume II: Social Statement
<p><i>Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g. on livelihoods, loss of heritage site, opportunity costs, etc.)?</i></p>	<ul style="list-style-type: none"> • The proposed development will host short-term employment and contribute towards socio-economic development in the area. • The current land use is low-intensity grazing and the land is not suitable for other agricultural uses. • The opportunity cost of not proceeding with the proposed development is therefore likely to be high. For the BWF to proceed, which will contribute to the country's increase in renewable energy, the re-alignment of the district road is required. • The findings of the Social Assessment indicate that the proposed development will create short-term employment and business opportunities for locals. Following development of the proposed re-aligned road, the BWF will be constructed which will represent an investment in clean, renewable energy infrastructure, which, given the negative environmental and socio-economic impacts associated with a coal based energy economy and the challenges created by climate change, represents a significant positive social benefit for society as a whole. 	Volume II: Social Statement & Fauna & Flora Specialist Study
<p><i>Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area?</i></p>	<ul style="list-style-type: none"> • The impacts associated with the development will be low after mitigation and no long-term medium or high post-mitigation impacts are likely to occur. As such the development is supported from an ecological perspective. • Far-reaching positive benefits from development of the BWF that will reduce SA's coal dependency outweigh the local negative impacts on ecological integrity. 	Volume II: Social Statement & Fauna & Flora Specialist Study

"Securing ecological sustainable development and use of natural resources"⁴		
Question	Answer	Reference
<i>Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations?</i>	<ul style="list-style-type: none"> Ecological priority areas including sensitive areas and no-go areas were identified through specialist input. The results of the specialist's studies and assessments informed the selection of the best practicable environmental option for the road re-alignment. 	Volume II: Specialist Reports
<i>Describe the positive and negative cumulative ecological/biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area?</i>	The cumulative impact of the proposed road re-alignment is negligible.	Volume II: Fauna & Flora Specialist Ecological Specialist Study

Table 8-2: Socio-economic Considerations of Need and Desirability for the Proposed Re-alignment of the District Road

"promoting justifiable economic and social development"⁶		
Question	Answer	Reference
<i>What is the socio-economic context of the area, based on, amongst other considerations, the following considerations?</i>	<i>The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks of policies applicable to the area,</i>	n/a
	<i>Spatial priorities and desired spatial patterns (e.g. need for integrated of segregated communities, need to upgrade informal settlements, need for densification, etc.),</i>	
	<i>Spatial characteristics (e.g. existing land uses, planned land uses, cultural landscapes, etc.), and</i>	
	<ul style="list-style-type: none"> The Developer has engaged with the local and provincial authorities regarding the proposed re-alignment of the district road. The road will be constructed by the Developer and maintained by the local authorities. The road is currently a low volume gravel road which will be re-aligned as a Class 5 Provincial Gravel Road. 	
	<ul style="list-style-type: none"> The proposed development will be for the re-alignment of a district road, which will run along the boundary of neighbouring properties and will not cause a significant 	Volume II: Specialist Studies

⁶Section 24 of The Constitution of South Africa refers.

"promoting justifiable economic and social development"⁶			
Question		Answer	Reference
	<i>Municipal Economic Development Strategy ("LED Strategy").</i>	change in land use, as the development site is primarily low intensity agriculture (grazing), which can still proceed once the development is constructed.	
<i>Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area?</i>		<ul style="list-style-type: none"> The proposed development will contribute positively towards the creation of employment and local economic development, in an area with high levels of unemployment and low levels of economic growth. The area is not suitable for alternative more profitable types of land use. There are no impacts to the cultural landscape and with no impacts to heritage resources, they are not significant enough to outweigh the social and economic impacts to be realised by the proposed project. 	
<i>Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?</i>		<ul style="list-style-type: none"> The development will promote short-term employment to local / low skill workers. 	Volume II: Social Statement
<i>How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?</i>		<ul style="list-style-type: none"> The strategic objective of the IDP is to promote responsible and accountable usage of the Municipality's spatial environment to sustain the natural and built assets. This includes addressing the issues associated with environmental, social, and economic challenges. The IDP also identifies potential high impact projects aimed at addressing poverty and unemployment and supporting BBBEE. Of relevance to the proposed development, will not impact on the local access and use of the existing road. 	n/a
<i>Will the development result in equitable (intra- and inter-generational) impact distribution, in the short- and long-term? Will the impact be socially and economically sustainable in the short- and long-term?</i>		<ul style="list-style-type: none"> The development of the road will only have a short-term impact. Once constructed the road will be beneficial to the community and also the development of the BWF which will benefit long-term goals of sustainable energy for the area. 	n/a
<i>In terms of location, describe how the placement of the proposed development will:</i>	<i>result in the creation of residential and employment opportunities in close proximity to or integrated with each other,</i>	<ul style="list-style-type: none"> The proposed development of the road will create local jobs and contribute towards socio-economic development in the area. The development will create skilled and unskilled jobs, particularly during the construction period. Members from the local community in the area are likely to be in a position to qualify for the majority of the low skilled and a proportion of the semi-skilled employment opportunities. The majority of these employment opportunities will accrue to Historically Disadvantaged (HD) members from the community. The towns that are likely to benefit are Humansdorp and Jeffreys Bay. This would represent a significant positive social benefit in an area with limited employment opportunities. 	Volume II: Social Impact Assessment

"promoting justifiable economic and social development"⁶		
Question	Answer	Reference
<p><i>reduce the need for transport of people and goods,</i></p> <p><i>result in access to public transport or enable non-motorised and pedestrian transport (e.g. will the development result in densification and the achievement of thresholds in terms public transport),</i></p>	<p>At a sub-regional level, the MN50182 provides a connection between the R330 and the DR01763. As such it provides a link between areas to the east of the R330 and to west of the DR01763. It also provides an alternative (that is slightly longer but potentially in better condition) to the shortest route between Cape St Francis and St Francis Bay to Oyster Bay. The realigned road would maintain all of these connections thereby not impacting on access as the low traffic volumes would simply divert onto the realigned road. Note that access to the DR01763 would remain the same for properties situated south of the Geelhoutboom River between the Geelhoutboom and Krom Rivers (e.g. properties in the Eastcot Private Nature Reserve and immediate surrounds). Accessing St Francis from these properties would thus mean joining the DR01763 as at present and either taking the realigned MN50182 or taking the route to the south. The traffic specialist found that either alternative route of the proposed realignment can be approved and would not have undue detrimental impact on traffic access and that identified impacts can be suitable mitigated (Fautley, 2022).</p>	<p>Volume II: Social Statement and Traffic Impact Assessment</p>
<p><i>compliment other uses in the area,</i></p>	<ul style="list-style-type: none"> Local communities and their service providers will benefit from the socio-economic development. 	<p>Volume II: Social Statement</p>
<p><i>be in line with the planning for the area,</i></p> <p><i>for urban related development, make use of underutilised land available with the urban edge,</i></p>	<ul style="list-style-type: none"> The proposed development is in line with applicable international, national, provincial and local planning strategies. 	<p>n/a</p>
<p><i>optimise the use of existing resources and infrastructure,</i></p>	<ul style="list-style-type: none"> It is expected that any construction water required will be delivered by tankers. A borehole may be considered as a source for construction water, in which case a WULA will be submitted to DHS&WS. Waste removal will be in accordance with best practice as per the EMPr by qualified waste removal contractors to the nearest registered landfill. Portable sanitation facilities will be utilised during construction, so that no connection to the local sewerage system will be required. Any additional infrastructure required will be constructed by the developer. 	<p>n/a</p>
<p><i>opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g. not aligned with the bulk infrastructure planning for the settlement that reflects the</i></p>	<ul style="list-style-type: none"> No opportunity costs in terms of bulk infrastructure expansions in non-priority areas are predicted due to the proposed development. The proposed development is not applicable and or within a bulk infrastructure expansion area. 	<p>n/a</p>

"promoting justifiable economic and social development"⁶		
Question	Answer	Reference
<i>spatial reconstruction priorities of the settlement),</i>		
<i>discourage "urban sprawl" and contribute to compaction/densification, contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs,</i>	<ul style="list-style-type: none"> • Not applicable as the proposed development will not change or affect the area. Access by the public will be via the re-aligned road. 	n/a
<i>encourage environmentally sustainable land development practices and processes,</i>	<ul style="list-style-type: none"> • Once the road re-alignment is complete and operational the construction of the BWF will assist South Africa in transitioning from a carbon-intensive resource use economy to a sustainable low carbon footprint economy. • Sustainable land development is an overarching aspect of the proposed project development. 	n/a
<i>take into account special locational factors that might favour the specific location (e.g. the location of a strategic mineral resource, access to the port, access to rail, etc.),</i>	<ul style="list-style-type: none"> • The proposed re-alignment route has been pre-negotiated with the neighbouring landowners. • The re-aligned route will not deviate far off from what was originally used by the public. 	n/a
<i>the investment in the settlement or area in question will generate the highest socio-economic returns (i.e. an area with high economic potential),</i>	<ul style="list-style-type: none"> • The proposed development will create jobs and contribute towards socio-economic development in an area that does not have high economic potential. 	n/a
<i>impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and</i>	<ul style="list-style-type: none"> • The sense of place of the wider region is commonly associated with natural resources and intensive and extensive agriculture uses. • No impacts to the cultural landscape are expected. 	n/a
<i>in terms of the nature, scale and location of the development promote or act as a catalyst to</i>	<ul style="list-style-type: none"> • The proposed development will create jobs and contribute towards socio-economic development in an area that does not have high economic potential. 	n/a

"promoting justifiable economic and social development"⁶			
Question		Answer	Reference
	<i>create a more integrated settlement?</i>		
<i>How were a risk-averse and cautious approach applied in terms of socio-economic impacts?</i>	<i>What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?</i>	<ul style="list-style-type: none"> All specialist studies clearly stated all assumptions and limitations in their respective specialist's reports. No unacceptable limitations were identified, see Section 1.3 of this report. 	Volume II: Specialist Studies
	<i>What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge?</i>	<ul style="list-style-type: none"> The risk due to limits of current knowledge is considered to be low. Once the construction is complete, the road will be accessible by public as the existing road is accessed. 	Volume II: Social Statement
	<i>Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?</i>	<ul style="list-style-type: none"> The risk due to limits of current knowledge is considered to be low. Once the construction is complete, the road will be accessible by public as the existing road is accessed. 	Volume II: Social Statement
<i>How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following:</i>	<i>Negative impacts: e.g. health (e.g. HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?</i>	<p>Measures to mitigate negative impacts were identified by the Social Specialist. These include:</p> <ul style="list-style-type: none"> Implement mitigation measures specified by the traffic specialist to limit pollution and nuisance for landowners and other community members. Provide clear orientation to contractors and construction workers with respect to what types of behaviour and activities by workers are not permitted in agreement with surrounding landowners and land managers. This should, for example, include clarity on allowable access to surrounding lands. 	Volume II: Social Statement & Appendix B EMPr
	<i>Positive impacts. What measures were taken to enhance positive impacts?</i>	<p>Measures to enhance positive impacts were identified by the Social Specialist. These include:</p> <ul style="list-style-type: none"> Ensure neighbouring landowners and wider community are clearly and timeously informed about project timing and both temporary and permanent access changes. To the degree possible, and without unreasonable additional cost, use local sub-contractors and labour for construction. The community should be able to contact the site manager or their representative to report and resolve any issues which they may have. 	Volume II: Social Statement & Appendix B EMPr

"promoting justifiable economic and social development"⁶		
Question	Answer	Reference
<i>Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic impacts will result in ecological impacts (e.g. over utilisation of natural resources, etc.)?</i>	<ul style="list-style-type: none"> Some impacts are expected on ecological processes, vegetation and fauna. These impacts are considered to be of low significance and manageable. 	Volume II: Fauna & Flora Specialist Study
<i>What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?</i>	<ul style="list-style-type: none"> All applicable planning policies were considered and the proposed development fits with all planning policies. Specialist input throughout the process ensures that the development is the "best practicable environmental option" in terms of socio-economic considerations. 	Volume II: Specialist Reports
<i>What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)?</i>	<p><i>Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?</i></p> <ul style="list-style-type: none"> The proposed development aligns with a variety of planning policies that consider environmental and spatial justice. 	Volume II: Specialist Reports
<i>What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?</i>	The development of the road re-alignment will not have any adverse impact on human well-being. Once constructed, the re-aligned road will be accessible by the public.	Volume II: Social Impact Assessment
<i>What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?</i>	<ul style="list-style-type: none"> Construction, operation and decommissioning of the road will be done according to environmental health and safety legislative requirements and applicable guidelines. 	Appendix B: EMPr
<p><i>What measures were taken to:</i></p> <p><i>ensure the participation of all interested and affected parties,</i></p>	<ul style="list-style-type: none"> Public participation is being undertaken according to NEMA: EIA Regulations (2014) as amended, DFFE (2017) Public Participation Guidelines and any other requirements at the time of public consultation. 	Volume III: Public Participation Report

"promoting justifiable economic and social development"⁶		
Question	Answer	Reference
<i>provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation,</i>	<ul style="list-style-type: none"> The proposed PPP is being undertaken in terms of legislative requirements and best practise guidelines. 	Volume III: Public Participation Report
<i>ensure participation by vulnerable and disadvantaged persons,</i>	<ul style="list-style-type: none"> The PPP is being undertaken according to best practise guidelines. Notification is provided in all required channels, i.e., newspaper adverts, site notices and written notifications. 	Volume III: Public Participation Report
<i>promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means,</i>	<ul style="list-style-type: none"> The proposed development fits into the various planning policies. The Developer is recommended to use local sub-contractors and labour for construction. 	Volume II: Social Statement
<i>ensure openness and transparency, and access to information in terms of the process,</i>	<ul style="list-style-type: none"> Legislative requirements and best practise guidelines is being followed throughout the process. 	Volume III: Public Participation Report
<i>ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge, and</i>	<ul style="list-style-type: none"> The PPP is being undertaken in terms of legislative requirements and best practise guidelines. 	Volume III: Public Participation Report
<i>ensure that the vital role of women and youth in environmental management and development were recognised and their full participation therein were be promoted?</i>	<ul style="list-style-type: none"> The PPP is conducted according to legislation and guidelines and will ensure that women and youth are recognised and involved in the process. 	Volume III: Public Participation Report

"promoting justifiable economic and social development"⁶			
Question	Answer	Reference	
<i>Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g. a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)?</i>	<ul style="list-style-type: none"> The proposed development have a good planning fit with all applicable policies and will result in substantial local socio-economic opportunities. 	n/a	
<i>What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?</i>	<ul style="list-style-type: none"> Future workers on the proposed development will be educated on their rights to refuse work. 	Appendix B: EMPr	
<i>Describe how the development will impact on job creation in terms of, amongst other aspects:</i>	<i>the number of temporary versus permanent jobs that will be created,</i>	<ul style="list-style-type: none"> The construction phase will extend over approximately 3 – 6 months and approximately 35% of the employment opportunities will be available to low skilled workers (construction labourers, security staff etc.), 15% to semi-skilled workers (drivers, equipment operators etc.) and 50% required for skilled personnel (engineers, land surveyors, project managers etc.). Due to the relatively small size of the proposed development the number of permanent employment opportunities will be limited to 20 workers. 	n/a
	<i>whether the labour available in the area will be able to take up the job opportunities (i.e. do the required skills match the skills available in the area),</i>	<ul style="list-style-type: none"> Some Low and Semi-Skilled employment opportunities will be available during construction of the proposed development. 	n/a
	<i>the distance from where labourers will have to travel,</i> <i>the location of jobs opportunities versus the location of impacts (i.e. equitable distribution of costs and benefits), and</i>	<ul style="list-style-type: none"> It is expected that most workers will reside in the nearby towns. 	n/a
	<i>the opportunity costs in terms of job creation (e.g. a mine might create 100 jobs, but</i>	<ul style="list-style-type: none"> Opportunity costs of the proposed development are expected to be of low significance due to the lack of alternative options at the proposed site. 	n/a

"promoting justifiable economic and social development"⁶			
Question	Answer	Reference	
<i>impact on 1000 agricultural jobs, etc.).</i>	<ul style="list-style-type: none"> Opportunity costs would not be realised if the proposed development did not occur. 		
<i>What measures were taken to ensure:</i>	<i>that there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment, and</i>	<ul style="list-style-type: none"> All applicable planning policies and legislation were considered. The proposed development fits with all planning policies. 	n/a
	<i>that actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?</i>	<ul style="list-style-type: none"> All interested and affected organs of state were pre-identified and registered on the I&AP Database and are receiving notification and are given opportunity to comment. 	Volume III: Public Participation Report
<i>What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?</i>	<ul style="list-style-type: none"> The proposed development aims to uphold the principles of sustainable development. The project team consists of suitably qualified individuals that is required to comply with all legal requirements. 	n/a	
<i>Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?</i>	<ul style="list-style-type: none"> Specialist input provides realistic mitigation measures. Rehabilitation to be undertaken after construction of the development will significantly reduce any potential legacy effects. 	Appendix B: EMPr	
<i>What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment?</i>	<ul style="list-style-type: none"> The EMPr is a legally binding document which when enforced, will hold the Applicant or their representative liable for any remedial actions as a result of negligence. 	Appendix B: EMPr	
<i>Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?</i>	<ul style="list-style-type: none"> The alternative selection process included the assessment of the No Development alternative, and route alternatives. 	Section 8	
<i>Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area?</i>	<ul style="list-style-type: none"> There are no cumulative impacts associated with the proposed re-alignment of the road which will have any negative or positive impact. Once constructed, the road will be accessible by the public and the existing road will remain for private use of 	n/a	

"promoting justifiable economic and social development"⁶		
Question	Answer	Reference
	landowners to access the DR1763 Oyster Bay and R330 St Francis Bay Road, respectively.	

8.1 Summary of the Need and Desirability

The development of the proposed re-aligned road will not cause any adverse effects to the environment or the community. The development will create short-term jobs to locals. The road will not affect how the existing road is being used by surrounding landowners, the general public and / or tourism in the region. The re-alignment of MN50182 District Road is required before the construction and operation of the proposed Banna ba Pifhu Wind Farm (BWF) can be realised. The road will facilitate direct access to the BWF from the south during construction and operations which is expected to reduce the risk of potential disturbance, in particular noise and dust pollution, to neighbouring landowners caused by vehicle movements through the use of the MN50182.

Should the application not receive a favourable decision, the impact to neighbouring properties will delay the development of the BWF, which is strongly supported by both national and provincial policies as well as planning documents.

9 PUBLIC PARTICIPATION PROCESS

The Public Participation Process follows the requirements of Section 24 (5) and Chapter 6 (41, 42, 43, and 44) of GN R. 326 of NEMA EIA Regulations, 2014 (as amended), as well as the Public Participation Guidelines in terms of NEMA, 1998 EIA Regulations, 2014.

During Alert Level 3 of the COVID-19 Pandemic, the DFFE published Government Notice 43412 on 5 June 2020⁷ (*These Regulations have since been repealed but the application will still follow the approved public participation process*). Included in this notice was the requirement to submit a Public Participation (PP) Plan to the DFFE prior to the commencement of a PP Process (PPP). The plan was designed to show how the EAP aims to provide sufficient and accessible information to all Interested and Affected Parties (I&APs) in a safe manner during COVID-19 Pandemic. The Plan was submitted and approved by the DFFE on 08 December 2021 and a copy of the approved plan is included in Volume III – Appendix 1.

The PPP is an important part of any application. The aim of PPP is:

- To inform I&APs of the proposed development;
- To identify and respond to issues, comments and concerns as raised by I&APs;
- To promote transparency of the project and its potential consequences and ensure I&APs understanding of the proposed development;
- To facilitate open dialogue and liaison with all I&APs;
- To assist in identifying potential environmental (biophysical and socio-economic) impacts associated with the proposed development; and
- To ensure that all I&AP issues and comments are accurately recorded, addressed and documented in a Comments & Response Report.

9.1 Initial Notification Phase

The initial notification phase gives opportunity to the public to register as an I&AP and receive all correspondence and notification regarding the application process. During this phase the following was conducted:

- The traffic specialist study included consultation with indirectly affected landowners;
- Site notices were erected on the site boundary in March 2022 (see Volume III);
- Poster notices were erected in the town of Humansdorp and St Francis Bay in March 2022 (see Volume III);

⁷ Directions regarding measures to address, prevent and combat the spread of Covid-19 relating to National Environmental Management Permits and Licences.

- Advertisements were placed in the *Eastern Cape Kouga Express* and *The Herald* newspapers on the 10 March 2022 (see Volume III); and
- Initial notification e-mails were distributed on to all pre-identified I&APs from the existing database⁸, including the affected landowner and occupiers of the site, municipal councillor(s), ratepayers in the area, affected district and local municipalities, and organs of state. I&APs who responded to the newspaper and notices were also sent an initial notification email (see Volume III).

9.2 Draft Assessment Phase

I&APs are able to register throughout the duration of the process and all registered I&APs are kept informed about the progress of the application.

The following tasks are undertaken during the BA process:

- Notification letters are sent to registered I&APs, key stakeholders, and organs of state to inform them of the availability of the Draft Basic Assessment Report (Draft BAR) for review and comment (30 days);
- During the availability of the Draft BAR, a public and/or focus group meeting may be held virtually, however, the need for this will only be determined if requested;
- A Comment and Responses Report, recording comments and/or queries received and the responses provided will be kept up to date throughout the application process (see Volume III);
- Notification letters will be sent to all registered I&APs, key stakeholders, and organs of state to inform them of the submission of the Final BAR to the DFFE for decision, which will include responses to comments made during the PP period; and
- Notification letters will be sent to all registered I&APs, key stakeholders, and organs of state to inform them of the decision by the DFFE and the appeal procedure.

9.3 Summary of Issues Raised

A Comments and Response Table will be included in Volume III of the BAR which will reflect all comments / queries received on the Application before submission of the final BAR for decision. The Comments and Response Table will be updated throughout the process as comments are received, and responded to and addressed by the project team, i.e., EAP, Applicant and Specialists as applicable.

No comment from I&APs were received before submission of the Draft BAR.

10 ASSESSMENT OF THE POTENTIAL IMPACTS

This section provides the impact assessment of the proposed road re-alignment alternatives. As the roads follows the same route for most part, specialists' assessments of both alternatives are identical and thus the must be considered applicable to either proposed alternative.

10.1 Soil and Agriculture

An Agricultural Compliance Statement has been produced to assess the agricultural impacts following the requirements of the NEMA Screening Tool Report.

The compliance statement thus only indicates whether or not the proposed development will have an unacceptable impact on the agricultural production capability of the site and provides a substantiated statement on the acceptability, or not, of the proposed development and a recommendation on the approval, or not of the proposed development.

⁸ The latest I&AP database of the authorised Banna Wind Farm was reviewed and updated to be used as the pre-identified I&APs list.

10.1.1 All Phases

Impact Phase: All Phases							
<p>Potential impact description: Change to the future agricultural production potential of the land</p> <p>The only agricultural impact of the proposed development will be the exclusion of agricultural production (grazing) from the 2.45-hectare development footprint of the road (4.46 km long x 5.5 m wide). Although fencing for the 12 m wide road reserve will exclude grazing from a larger area (5.35 ha), the road reserve of the existing road will offset the difference so that only 2.45 ha is actually lost.</p>							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	H	L	Negative	L	L	H
With Mitigation	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Can the impact be reversed?			n/a				
Will impact cause irreplaceable loss or resources?			No				
Can impact be avoided, managed or mitigated?			Yes.				
<p>Mitigation measures to reduce residual risk or enhance opportunities:</p> <ul style="list-style-type: none"> Follow mitigation measures as stipulated in the EMPr. Storm water management plan for road engineering must be followed. 							

This impact is considered to be of low significance because:

- The loss of agricultural land is very small in extent (2.45-hectares); and
- The proposed road will occupy land that is of limited land capability and is not suitable for crop production, but only for grazing.

Furthermore, the agricultural protocol requires confirmation that all *reasonable measures have been taken through micro-siting to minimize fragmentation and disturbance of agricultural activities*. However, for this development, the agricultural uniformity and lack of suitability for crop production mean that the exact positions of the road will not make any material difference to agricultural impacts as it is acceptable and seems more feasible to be on the farm boundaries of the respective landowners.

10.2 Freshwater and Wetlands (Aquatic)

The following direct impacts were assessed with regard to the to the watercourses that would be affected by the proposed re-aligned road:

- Impact 1: Loss of aquatic systems and disturbance of the alluvial watercourses
- Impact 2: Impact on aquatic systems through the possible increase in surface water run-off on riparian form and function
- Impact 3: Increase in sedimentation and erosion
- Impact 4: Potential impact on localised surface water quality
- Impact 5: Cumulative impacts for the overall project due to the high number of projects surrounding this application

The following impact was not assessed as it was found not applicable:

- Loss of species of special concern

The potential impact on aquatic species of special concern was not assessed, as no listed or protected aquatic species were observed during the assessment, although several terrestrial species may occur.

10.2.1 Construction and Decommissioning Phases

Impact Phase: Construction and Decommissioning Phases							
<p>Potential impact description: Loss of aquatic systems and disturbance of the watercourses.</p> <p>Should any of the proposed structures be placed within the delineated watercourse, a physical loss of associated vegetation as well as damage to the bed and banks of the observed systems could occur. Although limited aquatic obligate vegetation was seen, any disturbance of these areas could result in disturbance of the systems resulting in erosion / sedimentation, loss of habitat and corridor (Ecological Support Area) fragmentation. These disturbances will be the greatest during the construction and again in the decommissioning phases as the related disturbances could result in loss and/or damaged vegetation, while to a lesser degree in the operation phase (i.e. as and when maintenance of roads occur). The proposed layout has however avoided the delineated wetland areas, and limited the number of watercourse crossings to 2 road crossings, but within areas that already contain existing disturbance (tracks, roads or agricultural activities).</p>							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	M	M	Negative	M	M	H
With Mitigation	L	L	L	Negative	L	L	H
Can the impact be reversed?			Yes, through removal of hard surfaces and careful reinstatement of natural ground levels coupled to revegetation.				
Will impact cause irreplaceable loss or resources?			No, significant watercourses and wetland areas still remain within the greater catchment.				
Can impact be avoided, managed or mitigated?			Yes.				
<p>Mitigation measures to reduce residual risk or enhance opportunities:</p> <ul style="list-style-type: none"> Where new watercourse crossings are required, the engineering team must provide an effective means to minimise the potential upstream and downstream effects of sedimentation and erosion (erosion protection) as well minimise the loss of riparian vegetation (reduce footprint as much as possible). During the construction and operational /decommissioning phase, monitor culverts to see if erosion issues arise and if any erosion control is required. Where possible culvert bases must be placed as close as possible with natural levels in mind so that these don't from additional steps / barriers. Vegetation clearing should occur in a phased manner in accordance with the construction programme to minimise erosion and/or run-off. Large tracts of bare soil will either cause dust pollution or quickly erode and then cause sedimentation in the lower portions of the catchment. It is also advised that an Environmental Control Officer (ECO), with a good understanding of the local flora be appointed during the construction phase. The ECO should be able to make clear recommendations with regards to the re-vegetation of the newly completed / disturbed areas within aquatic environment, using selected species detailed in this report. All alien plant re-growth must be monitored, and should it occur these plants should be eradicated. The scale of the operation does however not warrant the use of a Landscape Architect and / or Landscape Contractor. 							

10.2.2 Operation and Decommissioning Phase

Impact Phase: Operation and Decommissioning Phases
<p>Potential impact description: Impact on aquatic systems through the possible increase in surface water runoff on downstream riparian and wetland form and function, due to impacts to the hydrological regime such as alteration of surface run-off patterns.</p> <p>When any of the hard or compacted surfaces (roads or hard stand areas) increase the volume and velocity of the surface runoff increases. This could impact the hydrological regime through the increase in flows that are concentrated in area, and as most plants are drought tolerant an increase in water will allow for</p>

Impact Phase: Operation and Decommissioning Phases							
other species to develop and outcompete typical plant species found within the region. This then affects the structure (i.e. larger taller grasses / shrubs / trees) and function (greater attenuation of flows, restricting any runoff from reaching downstream areas). The opposite can also happen. If flows are too concentrated with high velocities, scour and erosion results, with a complete reduction or disturbance of riparian habitat. Wetland areas would not be affected by the current layout.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	M	M	Negative	M	M	H
With Mitigation	L	L	L	Negative	L	L	H
Can the impact be reversed?	Yes, through removal of hard surfaces and careful reinstatement of natural ground levels coupled to revegetation.						
Will impact cause irreplaceable loss or resources?	No, significant watercourses remain within the greater catchment.						
Can impact be avoided, managed or mitigated?	Yes.						
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Vegetation clearing should occur in a phased manner in accordance with the construction programme to minimise erosion and/or run-off. Large tracts of bare soil will either cause dust pollution or quickly erode and then cause sedimentation in the lower portions of the catchment. A further legal requirement (National Water Act), is that no stormwater be discharged directly into natural watercourses and any stormwater run-off is captured / managed on site to reduce the downstream effect of pollutants and the potential for flooding. This is particularly important due to the site, although not directly linked, being upstream of two estuarine systems. Grass swales are ideal in this scenario, as stormwater management features and are easily created due to the nature of the surrounding soils and geology. 							

10.2.3 All Phases

Impact Phase: All Phases							
Potential impact description: Increase in sedimentation and erosion within the development footprint. Impacts include changes to the hydrological regime such as alteration of surface run-off patterns, runoff velocities and or volumes which could occur during the construction, operational and decommissioning phases.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	M	M	Negative	M	M	H
With Mitigation	L	L	L	Negative	L	L	H
Can the impact be reversed?	Yes, through removal of hard surfaces and careful reinstatement of natural ground levels coupled to revegetation.						
Will impact cause irreplaceable loss or resources?	No, significant watercourses remain within the greater catchment.						
Can impact be avoided, managed or mitigated?	Yes.						
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Any management actions must be dealt with in the Stormwater Management Plan (SWMP) typically submitted post EA, forming part of any WULA. 							

Impact Phase: All Phases
<ul style="list-style-type: none"> Further, no stormwater may be discharged directly into natural watercourses and any stormwater run-off is captured / managed on site to reduce the downstream effect of pollutants and the potential for flooding. This is particularly important due to the site, although not directly linked, being upstream of two estuarine systems. Grass swales are ideal in this scenario, as stormwater management features and are easily created due to the nature of the surrounding soils and geology.

Impact Phase: All Phases							
Potential impact description: Impact on localized surface water quality.							
During construction / decommissioning and to a limited degree the operational activities, chemical pollutants (hydrocarbons from equipment and vehicles, cleaning fluids, cement powder, wet cement, shutter-oil, etc.) associated with site-clearing machinery and construction activities could be washed downslope via the ephemeral systems.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	M	M	Negative	M	L	H
With Mitigation	L	L	L	Negative	L	L	H
Can the impact be reversed?				Yes, through typical measures associated with the cleanup of spills.			
Will impact cause irreplaceable loss or resources?				No, due to limited flows within these systems.			
Can impact be avoided, managed or mitigated?				Yes.			
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Strict use and management of all hazardous materials used on site in line with the specific material safety data sheets, e.g. fuels must be stored within a contained / bunded site with the necessary and spill kits available. Strict management of potential sources of pollution (e.g. litter, hydrocarbons from vehicles & machinery, cement during construction, etc.). Containment of all contaminated water by means of careful run-off management on the development site. Appropriate ablution facilities should be provided for construction workers during construction and on-site staff during the operation of the facility. Strict control over the behaviour of construction workers, with regard littering, use and storage of chemicals. Working protocols incorporating pollution control measures (including approved method statements by the contractor) should be clearly set out in the EMPr for the project and strictly enforced. 							

10.3 Terrestrial Biodiversity, Fauna and Flora

Construction and operations can result in a range of negative impacts on terrestrial and aquatic ecosystems if not effectively managed. All impacts are medium before mitigation and low after mitigation, which are considered to be acceptable.

10.3.1 Construction Phase

Impact Phase: Construction Phases							
Potential impact description: Impact on Vegetation							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	L	Negative	M	H	H

Impact Phase: Construction Phases							
With Mitigation	L	L	L	Negative	L	H	H
Can the impact be reversed?		Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.					
Will impact cause irreplaceable loss or resources?		No, risks to Irreplaceable Biodiversity Resources are low to moderate.					
Can impact be avoided, managed or mitigated?		Yes.					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Blanket clearing of vegetation must be limited to the site. No clearing outside of footprint to take place. Topsoil must be striped and stockpiled separately during site preparation and replaced on completion where revegetation will take place. Any site camps and laydown areas requiring clearing must be located within already disturbed areas away from watercourses. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on flora species							
There is a residual very-low possibility that these species could be present, and cannot be discounted without extensive seasonal sampling, which is generally outside the scope of such an assessment, unless a specific risk is identified. Due to the localised nature of the impact, as well as the level of degradation of the site, the risk of a species suffering any significant loss is very low.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	L	Negative	M	M	M
With Mitigation	L	L	L	Negative	L	M	M
Can the impact be reversed?		Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.					
Will impact cause irreplaceable loss or resources?		No, risks to Irreplaceable Biodiversity Resources are low to moderate.					
Can impact be avoided, managed or mitigated?		Yes.					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> A flora search and rescue is advisable before commencement for areas where natural vegetation is affected. Respective permits will be required for destruction. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on alien invasive species							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence

Impact Phase: Construction Phases							
Without Mitigation	L	M	L	Negative	M	H	H
With Mitigation	L	M	L	Negative	L	H	H
Can the impact be reversed?		Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.					
Will impact cause irreplaceable loss or resources?		No, risks to Irreplaceable Biodiversity Resources are low to moderate.					
Can impact be avoided, managed or mitigated?		Yes.					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> • Alien trees must be removed from the site as per CARA/NEMBA requirements. • A suitable weed management strategy to be implemented in construction and operation phases. • After clearing and construction is completed, an appropriate cover may be required, should natural re-establishment of grasses not take place in a timely manner along road verges. This will also minimise dust. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on erosion							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	M	L	Negative	M	M	M
With Mitigation	L	M	L	Negative	L	M	M
Can the impact be reversed?		Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.					
Will impact cause irreplaceable loss or resources?		No, risks to Irreplaceable Biodiversity Resources are low to moderate.					
Can impact be avoided, managed or mitigated?		Yes.					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> • Suitable measures must be implemented in areas that are susceptible to erosion. Areas must be rehabilitated, and a suitable cover crop planted once construction is completed. • Topsoil must be stripped and stockpiled separately and replaced on completion. • If natural vegetation re-establishment does not occur, a suitable grass must be applied. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on ecological processes							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence

Impact Phase: Construction Phases							
Without Mitigation	L	L	L	Negative	M	M	H
With Mitigation	L	L	L	Negative	L	M	H
Can the impact be reversed?		Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.					
Will impact cause irreplaceable loss or resources?		No, risks to Irreplaceable Biodiversity Resources are low to moderate.					
Can impact be avoided, managed or mitigated?		Yes.					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Blanket clearing of vegetation must be limited to the development footprint, and the area to be cleared must be demarcated before any clearing commences. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on aquatic and riparian processes							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	L	Negative	M	M	M
With Mitigation	L	L	L	Negative	L	M	M
Can the impact be reversed?		Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.					
Will impact cause irreplaceable loss or resources?		No, risks to Irreplaceable Biodiversity Resources are low to moderate.					
Can impact be avoided, managed or mitigated?		Yes.					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> None. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on faunal habitat							
The habitats and microhabitats present on the project site are not unique and are widespread in the general area, hence the local impact associated with the footprint would be of low significance if mitigation measures are adhered to. The site is unlikely to provide significant faunal habitat.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	M	Negative	M	M	M

Impact Phase: Construction Phases							
With Mitigation	L	L	M	Negative	L	M	M
Can the impact be reversed?		Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.					
Will impact cause irreplaceable loss or resources?		No, risks to Irreplaceable Biodiversity Resources are low to moderate.					
Can impact be avoided, managed or mitigated?		Yes.					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Blanket clearing of vegetation must be limited to the footprint. It is important that clearing activities are kept to the minimum and take place in a phased manner, where applicable. This allows animal species to move into safe areas and prevents wind and water erosion of the cleared areas. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on faunal processes							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	L	Negative	M	M	H
With Mitigation	L	L	L	Negative	L	M	H
Can the impact be reversed?		Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.					
Will impact cause irreplaceable loss or resources?		No, risks to Irreplaceable Biodiversity Resources are low to moderate.					
Can impact be avoided, managed or mitigated?		Yes.					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> The habitats and microhabitats present on the project site are not unique and are widespread in the general area, hence the local impact associated with the footprint would be of low significance if mitigation measures are adhered to. Small mammals within the habitat on and around the affected area are generally mobile and likely to be transient to the area. They will most likely vacate the area once construction commences. As with all construction sites there is a latent risk that there will be some accidental mortalities. Specific measures are made to reduce this risk. The risk of species of conservation concern is low, and it is unlikely that there will be any impact to populations of such species because of the activity. Reptiles such as lizards are less mobile compared to mammals, and some mortalities could arise. It is recommended that a faunal search and rescue be conducted before construction commences, although experience has shown that there could still be some mortalities as these species are mobile and may thus move onto site once construction is underway. A reptile handler should be on call for such circumstances. Should any amphibian migrations occur between wetland areas during construction, appropriate measures (including temporarily suspending works in the affected area) should be implemented. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on faunal species							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	M	Negative	M	M	M
With Mitigation	L	L	M	Negative	L	M	M
Can the impact be reversed?	Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.						
Will impact cause irreplaceable loss or resources?	No, risks to Irreplaceable Biodiversity Resources are low to moderate.						
Can impact be avoided, managed or mitigated?	Yes.						
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> A faunal search and rescue is recommended before construction for areas where natural vegetation is present. No animals are to be harmed or killed during the course of operations. Workers are NOT allowed to snare any faunal species. 							

10.3.2 Operation Phase

Impact Phase: Construction Phases							
Potential impact description: Impact on Vegetation							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	L	Negative	M	H	H
With Mitigation	L	L	L	Negative	L	H	H
Can the impact be reversed?	Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.						
Will impact cause irreplaceable loss or resources?	No, risks to Irreplaceable Biodiversity Resources are low to moderate.						
Can impact be avoided, managed or mitigated?	Yes.						
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> None. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on flora species							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence

Impact Phase: Construction Phases							
Without Mitigation	L	L	L	Negative	M	M	M
With Mitigation	L	L	L	Negative	L	M	M
Can the impact be reversed?		Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.					
Will impact cause irreplaceable loss or resources?		No, risks to Irreplaceable Biodiversity Resources are low to moderate.					
Can impact be avoided, managed or mitigated?		Yes.					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> None. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on alien invasive species							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	M	L	Negative	M	H	H
With Mitigation	L	M	L	Negative	L	H	H
Can the impact be reversed?		Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.					
Will impact cause irreplaceable loss or resources?		No, risks to Irreplaceable Biodiversity Resources are low to moderate.					
Can impact be avoided, managed or mitigated?		Yes.					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> A suitable weed management strategy to be implemented in construction and operation phases. After clearing and construction is completed, an appropriate cover may be required, should natural re-establishment of grasses not take place in a timely manner along road verges. This will also minimise dust. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on erosion							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	M	L	Negative	M	M	M
With Mitigation	L	M	L	Negative	L	M	M

Impact Phase: Construction Phases	
Can the impact be reversed?	Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.
Will impact cause irreplaceable loss or resources?	No, risks to Irreplaceable Biodiversity Resources are low to moderate.
Can impact be avoided, managed or mitigated?	Yes.
Mitigation measures to reduce residual risk or enhance opportunities: <ul style="list-style-type: none"> Suitable measures must be implemented in areas that are susceptible to erosion. Areas must be rehabilitated, and a suitable cover crop planted once construction is completed. Topsoil must be stripped and stockpiled separately and replaced on completion. If natural vegetation re-establishment does not occur, a suitable grass must be applied. 	

Impact Phase: Construction Phases							
Potential impact description: Impact on ecological processes							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	L	Negative	M	M	H
With Mitigation	L	L	L	Negative	L	M	H
Can the impact be reversed?	Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.						
Will impact cause irreplaceable loss or resources?	No, risks to Irreplaceable Biodiversity Resources are low to moderate.						
Can impact be avoided, managed or mitigated?	Yes.						
Mitigation measures to reduce residual risk or enhance opportunities: <ul style="list-style-type: none"> None. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on aquatic and riparian processes							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	L	Negative	M	M	M
With Mitigation	L	L	L	Negative	L	M	M
Can the impact be reversed?	Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.						

Impact Phase: Construction Phases	
Will impact cause irreplaceable loss or resources?	No, risks to Irreplaceable Biodiversity Resources are low to moderate.
Can impact be avoided, managed or mitigated?	Yes.
Mitigation measures to reduce residual risk or enhance opportunities:	
<ul style="list-style-type: none"> None. 	

Impact Phase: Construction Phases							
Potential impact description: Impact on faunal habitat							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	M	Negative	M	M	M
With Mitigation	L	L	M	Negative	L	M	M
Can the impact be reversed?	Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.						
Will impact cause irreplaceable loss or resources?	No, risks to Irreplaceable Biodiversity Resources are low to moderate.						
Can impact be avoided, managed or mitigated?	Yes.						
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> None. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on faunal processes							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	L	Negative	M	M	H
With Mitigation	L	L	L	Negative	L	M	H
Can the impact be reversed?	Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.						
Will impact cause irreplaceable loss or resources?	No, risks to Irreplaceable Biodiversity Resources are low to moderate.						
Can impact be avoided, managed or mitigated?	Yes.						
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> None. 							

Impact Phase: Construction Phases							
Potential impact description: Impact on faunal species							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	M	Negative	M	M	M
With Mitigation	L	L	M	Negative	L	M	M
Can the impact be reversed?			Yes, in general, most direct impacts will have a moderate to high reversibility in the Thornveld habitat, as well as transformed or degraded areas, except where hardening of surfaces or substantial removal of topsoil occurs. Reversibility will be low to moderate in intact vegetation.				
Will impact cause irreplaceable loss or resources?			No, risks to Irreplaceable Biodiversity Resources are low to moderate.				
Can impact be avoided, managed or mitigated?			Yes.				
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> None. 							

10.4 Avifauna

The only potentially significant impact that the proposed road is likely to have on the avifaunal occurring at the project site is temporary displacement due to the disturbance (noise and dust pollution) associated with the construction activities. Based on the pre-construction monitoring that had been implemented at the Banna ba Pifhu Wind Farm site, the most likely SCC that may be temporarily affected are Denham's Bustard and Blue Crane. During the operations phase of the road, the vehicle traffic is likely to be low key and comparable in intensity to the current vehicle traffic associated with the farming activities in the area.

Impact Phase: Construction Phases							
Potential impact description: Displacement of priority species due to construction activities linked to the realignment of the MN50182 road							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	L	Negative	M	M	M
With Mitigation	L	L	L	Negative	L	M	M
Can the impact be reversed?			Yes, the impacts will be temporary and restricted to the construction phase.				
Will impact cause irreplaceable loss or resources?			No, the impacts should be temporary and restricted to the construction phase.				
Can impact be avoided, managed or mitigated?			Yes, to some extent, however the impact will be negated naturally after the construction phase.				
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Restrict the construction activities to the construction footprint area. Do not allow any access to the remainder of the property during the construction period. 							

Impact Phase: Construction Phases

- Measures to control noise and dust should be applied according to current best practice in the industry.

10.5 Noise

The proposed re-alignment will result in potential noise impacts during the construction and operational phase. Construction activities relates to:

- Site survey and marking of route;
- Clearing vegetation and the removal of topsoil;
- Grading (excavation and filling) of road down to a sufficiently stable sub-base;
- Levelling and smoothing of surface area;
- Construction of stormwater culverts and headwall;
- Laying to aggregate base course – delivery, levelling, compaction of aggregate (potential maximum noise generation); and
- Increased traffic from heavy vehicles delivering aggregate and other materials.

Noise will increase over a short term during construction of the road and at a later stage during the construction of the BWF (for the duration of the construction phase of the proposed BWF) but will return to the pre-construction levels after the construction of the proposed BWF. Maintenance activities associated with the operational phase of the road and the BWF will have a minimal influence on traffic volumes and noise. These were also assessed separately for the BWF.

10.5.1 Construction and Operational Phases

As the exact noise emissions from the proposed project (construction and operational phase of the re-aligned MN50182) is unknown, the potential noise impact was screened using the guideline distances as proposed by section 6.3.3 of SANS 10328:2008 (see Table 11.1 below). This evaluation would be relevant for both the construction and operational phases.

Table 11-1: Screening of potential noise sensitivity using the guideline distances as proposed by Section 6.3.3 of SANS 10328:2008

No.	Question from SANS 10328:2008	Answer	Comment
1	Does the planned linear source (arterial road, planned arterial road reserve, or a main line railway line) at any position along the route pass within 1 000 m from an area which is developed or zoned for residential purposes?	No	Not relevant
2	Does the planned linear source (suburban road, planned suburban road reserve where only two lanes of traffic will be present at an average speed limit not exceeding 60 km/h, or a suburban electric traction railway line) at any position along the route pass within 500 m from an area which is developed or zoned for residential purposes?	No	Not relevant
3	Does the planned development of a residential area or a piece of land zoned for residential purposes fall within 1 000 m from a planned linear source (arterial road, planned arterial road reserve, or a main line railway line)?	No	Not relevant
4	Does the planned development of a residential area or a piece of land zoned for residential purposes fall within 500 m from a planned linear source (suburban road,	No	No potential noise-sensitive developments / receptors are living

No.	Question from SANS 10328:2008	Answer	Comment
	planned suburban road reserve where only two lanes of traffic will be present at an average speed limit not exceeding 60 km/h, or a suburban electric traction railway line)?		within 500 m from re-aligned road.
5	Does a planned industrial development or a building housing a plant fall within a distance of 1 000 m from an already developed residential area or land zoned for residential purposes?	No	Not relevant
6	Does a piece of land to be developed for residential purposes or land to be zoned for residential purposes fall within 1 000 m from an already developed industrial area or a building housing plant?	No	Not relevant
7	Does planned light industrial development or a building(s) housing workshops fall within a distance of 500 m from an already developed residential area or land zoned for residential purposes?	No	Not relevant
8	Does a piece of land to be developed for residential purposes or land to be zoned for residential purposes fall within 500 m from an already developed light industrial development or a building(s) housing workshops?	No	Not relevant
9	Does a piece of land to be developed for residential purposes or land to be zoned for residential purposes fall within 2 000 m from an existing wind generator farm?	No	Not relevant
10	Does a piece of land to be developed as a wind generator farm fall within 2 000 m from a piece of land to be developed for residential purposes or land to be zoned for residential purposes?	No	Not relevant
11	Does a piece of land to be developed for residential purposes or land to be zoned for residential purposes fall within 2 000 m from a low frequency source (e.g. low speed ventilation fans or low speed diesel engines)?	No	Not relevant
12	Does an activity containing a low frequency source (e.g. low speed ventilation fans or low speed diesel engines) to be developed fall within 2 000 m from a piece of land to be developed for residential purposes or land use to be zoned for residential purposes?	No	Not relevant
13	Will the planned repaving of a suburban street be provided with normal, non-sound absorptive bitumen or cement concrete paving?	No	Gravel Road – considered acoustic absorptive.
14	Where an aircraft landing strip, heliport, hoverport or airport is planned, or is to be altered, will this planned activity be such that the calculated appropriate limit noise contour for the full planned use of the activity fall inside the boundaries of any residential area or any piece of land zoned for residential purposes?	No	Not relevant

No.	Question from SANS 10328:2008	Answer	Comment
15	Where a residential area is planned or a piece of land is to be zoned for residential purposes, will the evaluated appropriate limit noise contour for the full planned use of an aircraft landing strip, heliport, hoverport or airport fall inside the boundaries of the residential area or the piece of land zoned for residential purposes?	No	Not relevant

10.6 Visual / Landscape

Given the small scale of the proposed road and relatively flat nature of the landscape, the development would have a limited zone of visual influence, or view-shed. Both the road, and heavy vehicles which will make use of the road for the development of the proposed BWF, would hardly be visible from surrounding farmsteads, the nearest being Grassmere, which is nearly a kilometre from the proposed road.

10.6.1 All Phases

Impact Phase: All Phases							
Potential impact description: Potential visual intrusion of the roadway and traffic on the rural landscape. Potential noise and dust during the construction and operational phases and positive visual effect of moving construction traffic further from sensitive receptors.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	L	Negative	L	M	M
With Mitigation	L	L	L	Negative	L	L	M
Can the impact be reversed?			Yes, the road could potentially be de-proclaimed, rehabilitated and revert to a pre-existing rural landscape.				
Will impact cause irreplaceable loss or resources?			No, there are no scenic or special landscape features on or adjacent to the proposed road.				
Can impact be avoided, managed or mitigated?			Yes, heavy vehicles and abnormal loads to be transported under permit.				
Mitigation measures to reduce residual risk or enhance opportunities: <ul style="list-style-type: none"> Rehabilitation / revegetation of road verges after construction. Concrete drainage channels to be avoided in the rural landscape, and only grass swales provided. Concrete headwalls to culverts to be avoided, and natural stone gabions used instead. Only essential traffic signs to be provided, and advertising signs are prohibited. 							

10.7 Heritage, Archaeology and Palaeontology

There is a very small chance of impacts to fossils. The main potential impact of concern is to archaeological resources. While it is technically possible that graves could occur, the chances are virtually zero and no further assessment of this aspect of heritage is provided. All these impacts would occur during construction.

The cultural landscape would be affected during both construction and operation phases. The isolated sandstone corner beacon (presented in Plate 6.6) is regarded in the assessment of impacts as part of the cultural landscape.

10.7.1 Construction Phase

Impact Phase: Construction Phase							
<p>Potential impact description: Impacts to palaeontological resources.</p> <p>Palaeontological resources below the ground (fossils) can be damaged and/or destroyed during construction activities.</p> <p>Because of the deep weathering that occurs in the surface geology, the intensity of impacts would be low. The probability of impacts occurring is similarly low with the result that the impact significance is low negative. With mitigation the impact would switch to a benefit due to the potential gains that might be made by science. The chances of such a benefit occurring are still low, however, and the post-mitigation impact is thus low positive. There are no fatal flaws in terms of impacts to fossils.</p>							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	H	L	Negative	L	L	H
With Mitigation	L	H	L	Positive	L	L	H
Can the impact be reversed?			No				
Will impact cause irreplaceable loss or resources?			Yes				
Can impact be avoided, managed or mitigated?			Yes				
<p>Mitigation measures to reduce residual risk or enhance opportunities:</p> <ul style="list-style-type: none"> Monitoring by the ECO and project staff. Protect and report any dense concentrations of fossils found during work. 							

Impact Phase: Construction Phase							
<p>Potential impact description: Impacts to archaeological resources.</p> <p>Archaeological resources on the ground (artefacts) can be damaged and/or destroyed during construction activities.</p> <p>Because so few artefacts were seen, the impact intensity is expected to be low and the probability also low. The impact significance calculates to low negative. There are no fatal flaws in terms of impacts to archaeology.</p>							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	H	L	Negative	L	L	H
With Mitigation	L	H	L	Negative	L	L	H
Can the impact be reversed?			No				
Will impact cause irreplaceable loss or resources?			Yes				
Can impact be avoided, managed or mitigated?			Yes				
<p>Mitigation measures to reduce residual risk or enhance opportunities:</p> <ul style="list-style-type: none"> Monitoring by the ECO and project staff. Protect and report any dense concentrations of fossils found during work. 							

Impact Phase: Construction Phase							
Potential impact description: Impacts to cultural landscape. The landscape and sense of place may be disrupted during construction activities. Direct impacts to the cultural landscape would occur during construction as a result of the physical changes to the landscape, movement of the boundary beacon and the intrusion from construction equipment. However, the kind of equipment used would be seen from time to time anyway when gravel roads are maintained so the intensity is rated as low. The duration is low (construction period only) but because the impact would definitely occur, the significance calculates to medium negative. With mitigation the impact remains medium negative due to the high probability that the impact would occur. There are no fatal flaws in terms of impacts to the cultural landscape.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	L	Negative	M	H	H
With Mitigation	L	L	L	Negative	L*	H	H
Can the impact be reversed?			Yes				
Will impact cause irreplaceable loss or resources?			No				
Can impact be avoided, managed or mitigated?			Yes				
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Minimise construction duration. Ensure effective rehabilitation of disturbed areas. 							

* Based on specialist opinion, this impact is better considered a low significance impact.

10.7.2 Operation Phase

Impact Phase: Operation Phase							
Potential impact description: Impacts to cultural landscape. Operational phase impacts to the landscape would effectively continue forever, but the use of the road would very quickly stop being an impact as it 'settles' into the landscape and becomes an accepted component of the landscape. For this reason, the duration has been assessed as low. With a medium probability that the new road would be seen as an impact to the landscape, the significance calculates to medium negative. The probability of the road being seen as an impact to the landscape and the resulting post-mitigation significance is low negative.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	L	Negative	M	M	H
With Mitigation	L	L	L	Negative	L	L	H
Can the impact be reversed?			Yes				
Will impact cause irreplaceable loss or resources?			No				
Can impact be avoided, managed or mitigated?			Yes				
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> No street lighting to be installed. Road to remain gravel in keeping with existing road. 							

10.8 Socio-Economic

The following impacts were identified for consideration based on the receiving environment and the nature of the proposed project:

- **Impacts on neighbouring landowners and owners of the BWF site.**

The existing road traverses the properties of neighbouring landowners to the south of the BWF site. The re-aligned road would effectively be aligned along the boundary between the neighbouring property and the BWF property thereby moving the road to the north, further from neighbouring lands and closer to the BWF site. This would be more equitable relative to the current alignment, and the key benefits of the project would be to:

- Facilitate easier direct access to the BWF from the south during construction and operations.
- Reduce the risk that would have affected neighbouring landowners. Effectively the realignment would ensure that vehicle movements, and their associated noise and dust, would move further away from neighbouring land and especially residences on neighbouring land.

- **Impacts from changes in access currently offered by the existing road.**

Alterations to roads such as the proposed re-alignment, can change access which can result in socio-economic impacts. In this case, sub-regional and local changes associated with the re-alignment were considered.

At a sub-regional level, the MN50182 provides a connection between the R330 and the DR01763. As such it provides a link between areas to the east of the R330 and to west of the DR01763. It also provides an alternative (that is slightly longer but potentially in better condition) to the shortest route between Cape St Francis and St Francis Bay to Oyster Bay. The re-aligned road would maintain all of these connections thereby not impacting on access as the low traffic volumes would simply divert onto the re-aligned road.

Access to the DR01763 would remain the same for properties situated south of the Geelhoutboom River between the Geelhoutboom and Krom Rivers (e.g. properties in the Eastcot Private Nature Reserve and immediate surrounds). Accessing St Francis from these properties would thus mean joining the DR01763 as at present and either taking the realigned MN50182 or taking the route to the south.

At a local level, the MN50182 currently provides access to properties to the south between the MN50182 and the Krom River, this access will be maintained.

- **Impacts on state road management authority costs.**

The construction cost of the realignment would be covered by the Applicant / Developer, thereby not burdening the state with additional costs. Road maintenance costs will then be covered by the state as is the case for the current alignment.

- **Impacts associated with expenditure and jobs on the project.**

The project would provide some minor temporary benefits in terms of work and business opportunities during construction. Approximately 20 workers would be employed for 3 - 6 months. The majority of these works are likely to come from the local municipal areas. None of them would be housed on site thereby further reducing social risks.

10.8.1 Construction Phase

Impact Phase: Construction Phase							
Potential impact description: Overall socio-economic impacts. Associated with impacts on neighbouring landowners and owners of the BWF site; changes in access currently offered by the existing road; state road management authority costs; and impacts associated with expenditure and jobs on the project.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	L	Negative	L	H	H
With Mitigation	L	L	L	Negative	L	H	H
Can the impact be reversed?		Yes, for impacts on neighbouring landowners and impacts on access changes. Impacts for expenditure and jobs on the project cannot be reversed.					
Will impact cause irreplaceable loss or resources?		No, irreplaceable loss of socio-economic resources especially as access would be maintained and as there would be no additional costs for the state road management authority.					
Can impact be avoided, managed or mitigated?		Yes					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> • Implement mitigation measures specified by the traffic specialist to limit pollution and nuisance for landowners and other community members. • Ensure neighbouring landowners and wider community are clearly and timeously informed about project timing and both temporary and permanent access changes. • To the degree possible, and without unreasonable additional cost, use local sub-contractors and labour for construction. • Provide clear orientation to contractors and construction workers with respect to what types of behaviour and activities by workers are not permitted in agreement with surrounding landowners and land managers. This should, for example, include clarity on allowable access to surrounding lands. • The community should be able to contact the site manager or their representative to report and resolve any issues which they may have. 							

10.8.2 Operation Phase

Impact Phase: Operation Phase							
Potential impact description: Overall socio-economic impacts. Associated with impacts on neighbouring landowners and owners of the BWF site; and changes in access currently offered by the existing road.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	H	L	Negative	L	H	H
With Mitigation	L	H	L	Negative	L	H	H
Can the impact be reversed?		Yes, for impacts on neighbouring landowners and impacts on access changes.					
Will impact cause irreplaceable loss or resources?		No, irreplaceable loss of socio-economic resources especially as access would be maintained.					

Impact Phase: Operation Phase	
Can impact be avoided, managed or mitigated?	Yes
Mitigation measures to reduce residual risk or enhance opportunities:	
<ul style="list-style-type: none"> • Implement mitigation measures specified by the traffic specialist to limit pollution and nuisance for landowners and other community members. • Ensure neighbouring landowners and wider community are clearly and timeously informed about project timing and both temporary and permanent access changes. 	

10.9 Traffic and Transport

The impact assessment was determined through systematic analysis of various components of the impact. The impact of local landowners that would use the existing District Road to access their property was also considered, but because the re-alignment of the road will not impact the landowners access to their property, this impact was not assessed further.

The following expected traffic and transport impacts, which are the same for the Preferred and Alternative road re-alignment options, during the respective construction, operation, and decommissioning phases of the proposed re-aligned road were assessed:

Construction Phase

- Traffic Flow and Safety,
- Minor Road Dust,
- Intersection Traffic Safety,
- Road Design and Site Clearance,
- Stormwater,
- Construction Zone and Camp, and
- Laydown Areas.

Operation Phase

The minor road will be operational all hours. Current traffic flow on the minor road should be less than 200 vehicles per day, and this traffic will simply divert onto the re-aligned road in future. Road maintenance will be occasional with very few vehicles, i.e., road grader transported to site on a low-bed vehicle. In general, operations (including maintenance) will have very low traffic flow and should have a negligible impact.

- Minor Road Maintenance, and
- Traffic Flow and Safety.

Decommissioning Phase

The minor road is expected to be operational for over 50 years. Trip generation at the decommissioning stage should be negligible, with the road simply reverting to the land owner, and farm gates being erected across the access.

10.9.1 Construction Phase

Impact Phase: Construction Phase							
Potential impact description: Impact on traffic flow.							
There will be a slight increase in the number of heavy vehicle traffic on the public road network, due to the construction of the re-aligned minor road, with abnormal load vehicles travelling at slow speeds and impeding other traffic on local, national, regional and minor roads.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence

Impact Phase: Construction Phase							
Without Mitigation	M	L	H	Negative	M	M	M
With Mitigation	M	L	L	Negative	L	L	M
Can the impact be reversed?		Yes					
Will impact cause irreplaceable loss or resources?		No					
Can impact be avoided, managed or mitigated?		Yes, heavy vehicles and abnormal loads to be transported under permit.					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Adherence to the National Road Traffic Act (Act 93 of 1996) and the National Road Traffic Regulations, 2000 that prescribe certain limitations on vehicle dimensions and axle and vehicle masses that a vehicle using a public road must be complied with. Abnormal load vehicles are allowed to travel on public roads under an exemption permit issued in terms of Section 81 of the National Road Traffic Act. 							

Impact Phase: Construction Phase							
Potential impact description: Impact on minor road dust.							
Construction activity on the minor road realignment, including travel on existing MN50182, could result in dust with reduced visibility and increased potential for crashes on the MN50182 and the section of minor road under construction.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	M	Negative	M	M	M
With Mitigation	L	L	L	Negative	L	L	M
Can the impact be reversed?		Yes					
Will impact cause irreplaceable loss or resources?		No					
Can impact be avoided, managed or mitigated?		Yes					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Reduce travel speed on gravel road to reduce dust. Post speed restriction signage (40 km/h) for construction vehicles on minor roads. Suppress dust by watering road under construction during windy periods. 							

Impact Phase: Construction Phase							
Potential impact description: Impact on traffic safety.							
The re-aligned minor road MN50182 will tie-in to the existing Minor Road MN50182 and will truncate at Divisional Road (DR) 1763 (Oyster Bay Road). Road construction activity in these areas could impact on traffic safety, and could result in vehicle crashes.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	H	Negative	M	M	M

Impact Phase: Construction Phase							
With Mitigation	L	L	L	Negative	L	L	M
Can the impact be reversed?		Yes					
Will impact cause irreplaceable loss or resources?		No					
Can impact be avoided, managed or mitigated?		Yes					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Alert motorists to construction traffic at the access. Prepare and adhere to a Traffic Management Plan. Place warning construction vehicle signage on each approach to Minor Road M50182. Ensure that all construction vehicles are roadworthy. Ensure that all construction vehicles have appropriate driver's licence. 							

Impact Phase: Construction Phase							
Potential impact description: Impact on Intersection traffic safety.							
The intersection of R330 and Minor Road MN50182 will be used by construction vehicles to gain access to the construction site. The increased number of heavy vehicles at this intersection increases risk of vehicle crashes.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	H	Negative	M	M	M
With Mitigation	L	L	M	Negative	L	L	M
Can the impact be reversed?		Yes					
Will impact cause irreplaceable loss or resources?		No					
Can impact be avoided, managed or mitigated?		Yes					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Alert motorists to construction traffic at the intersection, i.e. temporary heavy vehicle crossing signage. 							

Impact Phase: Construction Phase							
Potential impact description: Impact on road design.							
The design of Minor Road MN50182 should be appropriate to its environment and should be forgiving, in the interests of road safety.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	H	H	Negative	M	M	M
With Mitigation	L	H	M	Negative	L	L	M
Can the impact be reversed?		Yes					
Will impact cause irreplaceable loss or resources?		No					

Impact Phase: Construction Phase	
Can impact be avoided, managed or mitigated?	Yes
Mitigation measures to reduce residual risk or enhance opportunities:	
<ul style="list-style-type: none"> Build the road to a consistent design speed and to a high standard. Recommended speed is 60 km/h. <ul style="list-style-type: none"> 100 km/h is the norm for rural roads, and horizontal curves should be appropriate to the design speed, or slightly lower (80km/h) with appropriate signage, i.e. the curve radii should accommodate a 60km/h travelled speed. 	

Impact Phase: Construction Phase							
Potential impact description: Impact on stormwater.							
Stormwater could potentially damage the road, could cause soil erosion and could damage habitats.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	M	Negative	M	M	M
With Mitigation	L	L	L	Negative	L	L	M
Can the impact be reversed?		Yes					
Will impact cause irreplaceable loss or resources?		No					
Can impact be avoided, managed or mitigated?		Yes					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Install drainage structures before and during road construction. Construct frequent diversion structures (cross-drains). Construct appropriate road cross-section. Install stormwater culverts in dry season. Periodic maintenance of drains and side slopes should be carried to prevent erosion and scouring. Work in "wetlands/low lying poor drainage areas" and construction of culverts should be restricted to the dry season. 							

Impact Phase: Construction Phase							
Potential impact description: Impact on site clearance.							
The re-aligned minor road / site topsoil will be removed / cleared for the construction of the re-aligned minor road.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	M	Negative	M	M	M
With Mitigation	L	L	L	Negative	L	L	M
Can the impact be reversed?		Yes					
Will impact cause irreplaceable loss or resources?		No					
Can impact be avoided, managed or mitigated?		Yes					
Mitigation measures to reduce residual risk or enhance opportunities:							

Impact Phase: Construction Phase
<ul style="list-style-type: none"> Ensure appropriate storage of topsoil and revegetation post construction, i.e., create windrows on one side of the road within the road reserve along the length of the site / road under construction. Ensure that vehicles do not travel over the windrows.

Impact Phase: Construction Phase							
Potential impact description: Impact on construction zone.							
Construction vehicles could travel wider than the 12 m road reserve and damage vegetation beyond the road reserve.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	M	Negative	M	M	M
With Mitigation	L	L	L	Negative	L	L	M
Can the impact be reversed?			Yes				
Will impact cause irreplaceable loss or resources?			No				
Can impact be avoided, managed or mitigated?			Yes				
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Appropriate control (fence, tape, on-site management) to ensure that vehicles do not travel outside the realigned MN50182 road reserve. 							

Impact Phase: Construction Phase							
Potential impact description: Impact on construction camp.							
The construction camp / site office has potential to damage natural vegetation, depending on its siting, and to also cause pollution and generate rubbish.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	M	Negative	M	M	M
With Mitigation	L	L	L	Negative	L	L	M
Can the impact be reversed?			Yes				
Will impact cause irreplaceable loss or resources?			No				
Can impact be avoided, managed or mitigated?			Yes				
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Locate the construction site office away from natural vegetation (i.e., on current farming / degraded area). Providing temporary sanitation on-site. Provide refuse removal. Reinstate vegetation at the construction camp after construction. 							

Impact Phase: Construction Phase							
Potential impact description: Impact on laydown area. The laydown area will accommodate construction equipment and machinery. It has the potential of damaging natural vegetation (depending on location), causing soil erosion, compacting soil and contaminating surface or ground water.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	L	M	Negative	M	M	M
With Mitigation	L	L	L	Negative	L	L	M
Can the impact be reversed?			Yes				
Will impact cause irreplaceable loss or resources?			No				
Can impact be avoided, managed or mitigated?			Yes				
Mitigation measures to reduce residual risk or enhance opportunities: <ul style="list-style-type: none"> • Locating the lay-down area in a less sensitive area (degraded farming area). • Proper storage of hazardous materials (i.e., fuel). • Disposal of contaminants (i.e., hydraulic or other oil, grease) off-site. • Reinstatement of vegetation at the laydown area after construction. 							

10.9.2 Operation Phase

Impact Phase: Operation Phase							
Potential impact description: Impact on minor road maintenance. Deterioration of gravel minor roads and additional heavy traffic on minor roads could degrade the existing road pavement. The minor road will require regular road maintenance, by heavy construction vehicles. Abnormal load vehicles travelling to and from site would travel at slow speeds, with some impedance to other traffic on public roads.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	H	M	Negative	M	M	M
With Mitigation	L	H	L	Negative	L	L	M
Can the impact be reversed?			Yes				
Will impact cause irreplaceable loss or resources?			No				
Can impact be avoided, managed or mitigated?			Yes				
Mitigation measures to reduce residual risk or enhance opportunities: <ul style="list-style-type: none"> • Carry out regular maintenance of the road to ensure that its condition is maintained or improved. • Document condition of gravel roads prior to construction. • Upgrade gravel roads to suitable condition for proposed construction vehicles. • Ensure that the minor road is left in a better condition post-construction. • Ensure correct cross-section to drain stormwater water off road. • Ensure side drains, culverts remain fully functional. • Regularly maintain minor road. 							

Impact Phase: Operation Phase							
Potential impact description: Impact on traffic flow. The minor road will require regular road maintenance, by heavy construction vehicles. Abnormal load vehicles travelling to and from site would travel at slow speeds, with some impedance to other traffic on public road.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	H	M	Negative	M	M	M
With Mitigation	L	H	L	Negative	L	L	M
Can the impact be reversed?		Yes					
Will impact cause irreplaceable loss or resources?		No					
Can impact be avoided, managed or mitigated?		Yes, heavy vehicles and abnormal loads to be transported under permit.					
Mitigation measures to reduce residual risk or enhance opportunities: <ul style="list-style-type: none"> Ensure safe transport of materials, equipment, etc. to site by adhering to the National Road Traffic Act (Act 93 of 1996) and the National Road Traffic Regulations, 2000 that prescribe certain limitations on vehicle dimensions and axle and vehicle masses that a vehicle using a public road must comply with. Abnormal load vehicles are allowed to travel on public roads under an exemption permit issued in terms of Section 81 of the National Road Traffic Act. 							

Impact Phase: Operation Phase							
Potential impact description: Impact on traffic safety. Road construction vehicles maintaining the realigned minor road has potential for causing accidents involving the public.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	H	M	Negative	M	M	M
With Mitigation	L	H	L	Negative	L	L	M
Can the impact be reversed?		Yes					
Will impact cause irreplaceable loss or resources?		No					
Can impact be avoided, managed or mitigated?		Yes					
Mitigation measures to reduce residual risk or enhance opportunities: <ul style="list-style-type: none"> Alert motorists to construction traffic at the access. This can be mitigated by appropriate temporary road construction signage, flagmen, etc. during road maintenance. Ensure that all construction vehicles are roadworthy. Ensure that all construction vehicles have appropriate driver's licence. 							

10.9.3 Decommissioning Phase

Impact Phase: Decommissioning Phase							
Potential impact description: Impact on road closure.							

Impact Phase: Decommissioning Phase							
The road will be closed with a farm gate and traffic will need to find alternate route.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	H	M	Negative	L	M	M
With Mitigation	L	H	L	Negative	L	L	M
Can the impact be reversed?			Yes				
Will impact cause irreplaceable loss or resources?			No				
Can impact be avoided, managed or mitigated?			Yes				
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> • Advertise road closure in Government Gazette. • Place signage informing of road closure for a 6 months period, once road is closed. 							

11 ASSESSMENT OF THE POTENTIAL CUMULATIVE IMPACTS

The cumulative impact of a development is the impact that development will have when its impact is added to the incremental impacts of other past, present or reasonably foreseeable future activities that will affect the same environment. The most important concept related to a cumulative impact is that of an acceptable level of change to an environment. A cumulative impact only becomes relevant when the impact of the proposed development will lead directly to the sum of impacts of all developments causing an acceptable level of change to be exceeded in the surrounding area. If the impact of the development being assessed does not cause that level to be exceeded, then the cumulative impact associated with that development is not significant.

Specialists used their expertise during the production of their report to assess the cumulative impacts of the re-alignment of the road. The proposed re-aligned road was considered together with the proposed internal access roads within the Banna ba Pifhu Wind Farm site and with the R330 Road and other District Roads in the area. No buffer was used to assess the cumulative impacts of the proposed development.

11.1 Soil and Agriculture

The potential cumulative agricultural impact of importance is a regional loss (including by degradation) of agricultural land, with a consequent decrease in agricultural production. The defining question for assessing the cumulative agricultural impact is:

What level of loss of agricultural land use and associated loss of agricultural production is acceptable in the area, and will the loss associated with the proposed development, when considered in the context of all past, present or reasonably foreseeable future impacts, cause that level in the area to be exceeded?

Because of the small extent of the development, this assessment considers the cumulative loss of agricultural land use and associated loss of agricultural production associated with the proposed development to be acceptable in the area. This is particularly so if seen in the context of a study done on the impact of the existing wind farms on the agriculture of the area (Lanz, 2018), which is relevant in this case because this road development is connected to and enables a wind farm development. The overall conclusion of the study was that, although wind farms have been established within an area of cultivated farmland that supports intensive and productive dairy farming, it is highly unlikely that this has

caused a reduction in agricultural production. Small amounts of production land have been lost, but the consequence of this for agricultural production has been negligible. It is likely that the positive financial impacts of wind farming have outweighed the negative impacts and that wind farming has benefited agriculture and agricultural production in the area.

11.2 Freshwater and Wetlands (Aquatic) Assessment

In the cumulative assessment of the proposed development, several nearby projects which included the authorisation of a road was reviewed and or the actual sites accessed during the course of travelling between the various projects. Of these projects, the aquatic specialist has been involved in the initial EIA aquatic assessments or has managed / assisted with the WUL process for all the surrounding renewable projects within the Kouga Municipality in the past 10 years.

All of the projects have indicated that this is also their intention with regard mitigation, i.e. selecting the best possible routes to minimise the local and regional impacts and improving the drainage or hydrological conditions with these rivers the cumulative impact could be seen as a net benefit. The worse-case scenario has been assessed below, i.e. only the minimum of mitigation be implemented by the other projects.

Impact Phase: Cumulative Assessment							
Potential impact description: Impact on Aquatic Systems.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	M	M	Negative	M	M	H
With Mitigation	L	L	L	Negative	L	L	L
Can the impact be reversed?		Yes, due to the nature of the projects and surrounding aquatic ecosystems.					
Will impact cause irreplaceable loss or resources?		No.					
Can impact be avoided, managed or mitigated?		Yes.					
Mitigation measures to reduce residual risk or enhance opportunities:							
<ul style="list-style-type: none"> Improve the current stormwater and energy dissipation features not currently found along the tracks and roads within the region. Install properly sized culverts with erosion protection measures at the present road / track crossings. 							

11.3 Terrestrial Biodiversity, Fauna and Flora

The proposed re-aligned road and its associated activities will have no direct, indirect, or cumulative impact on any protected environment, providing recommendation and mitigation measures are adhered to, due to the limited disturbance area.

11.4 Visual / Landscape

Given the small scale and relatively short distance of the proposed road, along with the rural context, the cumulative visual impact significance is expected to be low.

11.5 Heritage, Archaeology and Palaeontology

Because of the sparse palaeontological and archaeological heritage resources present, impacts are expected to be minimal. As such, no significant cumulative impacts are expected for these aspects. The main impact to the cultural landscape in the general area

is from the many wind turbines that have been constructed in the vicinity. The proposed road is thus expected to make only a very minimal contribution to cumulative impacts and this aspect is thus not of concern.

11.6 Traffic and Transport

No similar proclaimed road construction projects are known of within 35 km of site.

The short duration of the project build and the low trip generation would have an insignificant impact considering cumulative impact of other possible similar projects.

12 SUMMARY OF FINDINGS

12.1 Soil Assessment

The potential impact assessment concluded that the loss of agricultural land is very small in extent to the development area. The proposed land that the road will occupy is of limited land capability and would not be suitable for crop production. The land is currently only suitable for grazing. The cumulative impacts are also acceptable when considering the small extent of the development. The comparative assessment of the alternative routes has no material difference to agricultural impacts. From an agricultural impact point of view, the proposed development is **acceptable and is recommended by the specialist that the road realignment be approved without being subject to any specific conditions related to soils and agriculture.**

12.2 Freshwater and Wetlands (Aquatic) Assessment

The proposed road alignment would have no detrimental impact on any very high sensitivity areas identified by the DFFE Screening Tool, if the proposed road alignment maintains avoidance of the delineated drainage line areas; and mainstem rivers and wetlands, in particular, that do contain functioning aquatic environments. With the proposed mitigation (proper stormwater management and post construction rehabilitation), the impacts would be low and acceptable for development.

Thus, based on the findings of the specialist study, the significance of the remaining impacts assessed for the aquatic systems after mitigation would be **low**. The specialist has **no objection of any of the proposed activities for the proposed development and the application for the realignment can be approved.**

12.2.1 Aquatic Permit Requirements

Certain aspects of the development may also trigger the need for Section 21, Water Use License Applications (WULAs) (or General Authorisation (GA) applications) such as river or watercourse crossings or any activities within 500 m of a wetland boundary. The proposed re-aligned road will cross two watercourses. A potential GA in terms of Section 21 (c) and (i) of the National Water Act (Act 36 of 1998) (NWA), should any construction take place within these areas will be required. Should any of the present road crossings need to be upgraded then the opportunity exists to improve the current state (lack of habitat continuity) for example by replacing pipe culverts with box culverts. This opportunity to improve the hydrological conditions can be seen as a net benefit. DHSWS will determine if a GA or WULA application will be required during the pre-application phase, and typically if one of the below identified water-uses requires a WULA then all applications will be treated as a WULA and not GA.

Based on an assessment of the proposed activities and past engagement with DHSWS, the following WULs / GA's could be required based on the following thresholds as listed in the following Government Notices:

- DHSWS Notice 538 of 2016, 2 September in GG 40243– Section 21 a, Abstraction of water.
- Government Notice 509 in GG 40229 of 26 August 2016 – Section 21 c & i, Impeding or diverting the flow of water in a watercourse and or altering the bed, banks, course or characteristics of a watercourse.

The application process will be initiated by the Applicant / Developer and will be separate to this basic assessment process.

	Water Use Activity	Applicable to this development proposal
S21(a)	Taking water from a water resource	Yes, if any water is abstracted from any local boreholes, farm dams and rivers during construction.
S21(b)	Storing water	Not applicable, as any water must be stored in temporary reservoirs.
S21(c)	Impeding or diverting the flow of water in a watercourse	Yes, as works (permanent or temporary) are located within a watercourse where a GA process can potentially be followed if the DWS Risk Assessment Matrix indicates that all impacts with mitigation are low.
S21(d)	Engaging in a stream flow reduction activity	Not applicable
S21(e)	Engaging in a controlled activity	Not applicable
S21(f)	Discharging waste or water containing waste into a water resource through a pipe, canal, sewer or other conduit	Not applicable
S21(g)	Disposing of waste in a manner which may detrimentally impact on a water resource	Typically, the conservancy tanks at construction camps and then O/M buildings require a license (GA if volumes are below 5000 m ³).
S21(h)	Disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process	Not applicable
S21(i)	Altering the bed, banks, course or characteristics of a watercourse	Yes, as works (permanent or temporary) are located within a watercourse where a GA process can potentially be followed if the DWS Risk Assessment Matrix indicates that all impacts with mitigation are low.
S21(j)	Removing, discharging or disposing of water found underground for the continuation of an activity or for the safety of persons	Not applicable
S21(k)	Using water for recreational purposes	Not applicable

12.3 Terrestrial Biodiversity, Flora and Fauna

The site is located within a commercial farming area with high levels of agricultural transformation present. The proposed re-aligned district road will also predominantly be within transformed areas and several watercourse crossings and/or seep areas with a short section (700 m) of the proposed re-aligned district road passing through indigenous vegetation. The proposed re-aligned district road is bounded on the south side by transformed lands, hence it will not significantly increase habitat fragmentation and it is

not anticipated that the other crossings will significantly fragment the landscape significantly above high baseline levels of fragmentation.

It is the conclusion of this terrestrial biodiversity assessment that the proposed activity **can be undertaken within acceptable terrestrial biodiversity impact limits.**

12.4 Avifauna

Provided the recommendations are implemented, there is **no objection to the implementation of the proposed realignment of the road from an avifaunal impact perspective. There is no preferred alignment from an avifaunal perspective, both are acceptable.**

12.5 Noise

Considering the administrative review of the noise impact as allowed by SANS 10103:2008, it is the opinion of the specialist that there is a **low** risk for a potential noise impact from the re-alignment of the MN50182 road. This will be valid for both the re-alignment alternatives and is valid for both the construction and operational phases.

No specific mitigation measures regarding noise or additional noise measurements are recommended. No additional conditions regarding noise are recommended for inclusion in the EMPr.

12.6 Visual / Landscape

Two alternative alignments for the proposed re-aligned road have been considered, both of which would have a **low visual impact significance**. The proposed re-alignment has a positive aspect in that construction traffic for the proposed Banna ba Pifhu Wind Farm would be moved further away from sensitive receptors in the area.

From a visual perspective, the Preferred Alternative is the preferred route as it has a more flowing alignment that would blend with the gently undulating topography.

Provided that the visual mitigations are adhered to, and included in the EMPr, authorisation is supported from a visual perspective.

12.7 Socio-Economic

The realignment **can be approved** on the basis of the potential positive socio-economic impacts and risks associated with it. This applies to both realignment alternatives. The preferred alternative would be slightly better from an equity and land use point of view as it would be aligned with the boundary between the BWF and neighbouring farm.

No specific mitigation measures are recommended.

12.8 Heritage, Archaeology and Palaeontology

The assessment has shown that no significant impacts are to be expected from either alternative and that, from a heritage point of view, it can be supported. Significant impacts to any type of heritage are highly unlikely to occur and there are thus no heritage objections to the development proceeding.

The project will result in a small number of short term jobs being created during the construction phase. Long term benefits will only be to the surrounding landowners who would experience less traffic (including during the phases of the BWF) close to their homes. Although these socio-economic benefits are relatively small, they do still outweigh the even smaller heritage impacts that might occur.

There are currently no obvious threats to heritage resources on the site aside from the natural degradation, weathering and erosion that will affect archaeological materials. Trampling from grazing animals and/or farm/other vehicles could also occur. These impacts would be of negligible negative significance. The wider cultural landscape has been impacted by the development of renewable energy facilities (REF) but, with time, even this, which may have been an impact of high significance originally, becomes of less concern as the turbines eventually become an accepted part of the landscape. Nevertheless, existing cultural landscape impacts from the REFs are considered to be medium negative. At the more local level, there are no threats to the landscape and impacts are considered neutral.

Given that heritage impacts will be minimal and could be easily managed if required, it is the opinion of the heritage specialist that the **proposed road realignment may be authorised in full using either alternative.**

12.9 Traffic and Transport

It is recommended that the traffic and transport related impacts of the proposed realignment of Minor Road MN50182 construction/build, operations and decommissioning be mitigated as set out in this report.

It can be concluded that the proposed relocation of the minor road MN50182 will not have undue detrimental impact on traffic and that identified impacts can be suitably mitigated.

It is the reasoned opinion of the specialist that the Minor Road MN50182 realignment, either the Preferred Road realignment or the Alternate 1 road realignment **can be approved, from a traffic and transport engineering perspective, subject to the specific requirements/mitigation measures.**

13 IMPACT STATEMENT AND CONCLUSION

Banna ba Pifhu Wind Farm (RF) Pty Ltd are proposing the re-alignment of the MN50182 District Road. The existing road traverses the properties of neighbouring landowners to the south of the BWF site. The motivation for this authorisation is to effectively be aligned along the boundary between the neighbouring property and the BWF property thereby moving the road to the north, further from neighbouring lands and closer to the BWF site. This would be more equitable and the key benefit of the project would be to facilitate easier direct access to the BWF from the south during construction and operations and reduce the risk that using the existing road could potentially have on neighbouring landowners. Effectively the realignment would ensure that vehicle movements, and their associated noise and dust, would move further away from neighbouring land and especially residences on neighbouring land.

Current land uses along the existing road, the proposed realignment and on the BWF site are focused on agriculture. These land uses will be able to continue in much the same way they are currently on surrounding farms.

Specialists conducted site visits and submitted reports which assessed the level of impacts the proposed development will have on the environment and provided constraints and recommendations. The specialists have good knowledge of the development site and surrounding area and has been to the development site multiple times. An environmental sensitivity map illustrates the proposed layout superimposed by the environmental constraints and No-Go Areas (Figure 13.1 – Environmental Sensitivity Map).

At a sub-regional level, the MN50182 District Road provides a connection between the DR01763 Oyster Bay Road and the R330 St Francis Bay Road. As such it provides a link between areas to the east of the R330 St Francis Bay Road and to west of the DR01763 Oyster Bay Road. It also provides an alternative to the shortest route from Cape St Francis and St Francis Bay to Oyster Bay. The realigned road would maintain all of these

connections thereby not impacting on access as traffic would simply divert onto the realigned road.

At a local level, the MN50182 District Road provides access to properties to the south between the road and the Krom River. All landowners that currently use the road to access their properties to the south will continue to have the same access as they currently have.

The construction cost of the realignment would be covered by the applicant thereby not burdening the state with additional costs. Road maintenance costs will then be covered by the state as is the case for the current alignment.

The area is sensitive, in a positive sense, to increased economic opportunities as they are much needed as reflected in low employment and income levels. The project would provide some minor temporary benefits in terms of work and business opportunities. Approximately 20 workers would be employed for 3 - 6 months. The majority of these works are likely to come from the local municipal areas. They would not be housed on site thereby reducing social risks.

From the results of the specialist assessments, the proposed development would have an overall low negative impact significance rating on the built environment, if mitigation measures are followed. It is the opinion of the EAP that the proposed preferred alternative for development **be approved** as there is no fatal flaw preventing the development from proceeding.

13.1 Recommended Conditions included in the EMPr

Soil

- The standard storm water management for road engineering must be implemented.

Visual / Landscape

- Rehabilitation / revegetation of road verges after construction.
- Concrete drainage channels to be avoided in the rural landscape, and only grass swales provided.
- Concrete headwalls to culverts to be avoided, and natural stone gabions used instead.
- Only essential traffic signs to be provided, and advertising signs prohibited.

Heritage, Archaeology and Palaeontology

- During construction, the ECO is to regularly examine fresh bedrock exposures for any signs of fossils;
- During construction, the ECO is to regularly examine cobble exposures for any dense accumulations of artefacts; and
- If any archaeological material or human burials are uncovered during the course of development, then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.

13.2 Recommended Conditions to be included in the EA

It is recommended that the local access by affected landowners be maintained on the existing MN50182 District Road.

FIGURES

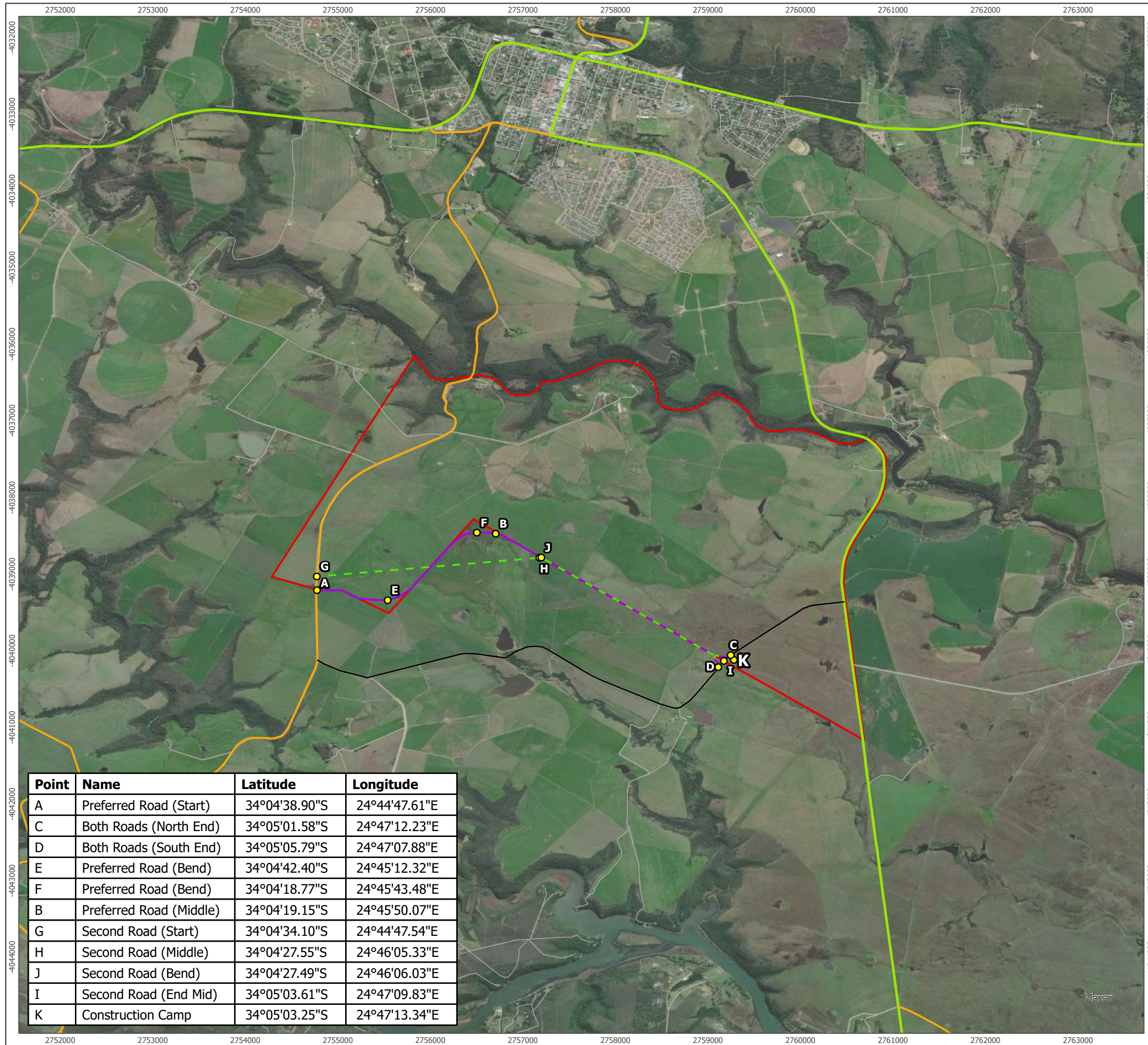
Figure 1.1 - Proposed Development Geographical Co-ordinates

Figure 1.2 - Site Locality

Figure 5.1 – Land Use and Ecological Areas

Figure 7.1 - Site Development Plan

Figure 13.1 - Environmental Sensitivity Map



- Banna ba Pifhu Site Boundary
- Proposed Construction Camp
- Existing Public Roads
 - Main Road
 - Secondary Road
 - Minor Road
 - Existing District Road (MN50182)
- Proposed Development
 - Preferred Road Realignment Alternative
 - Second Road Realignment Alternative
- Points
 - Feature Points

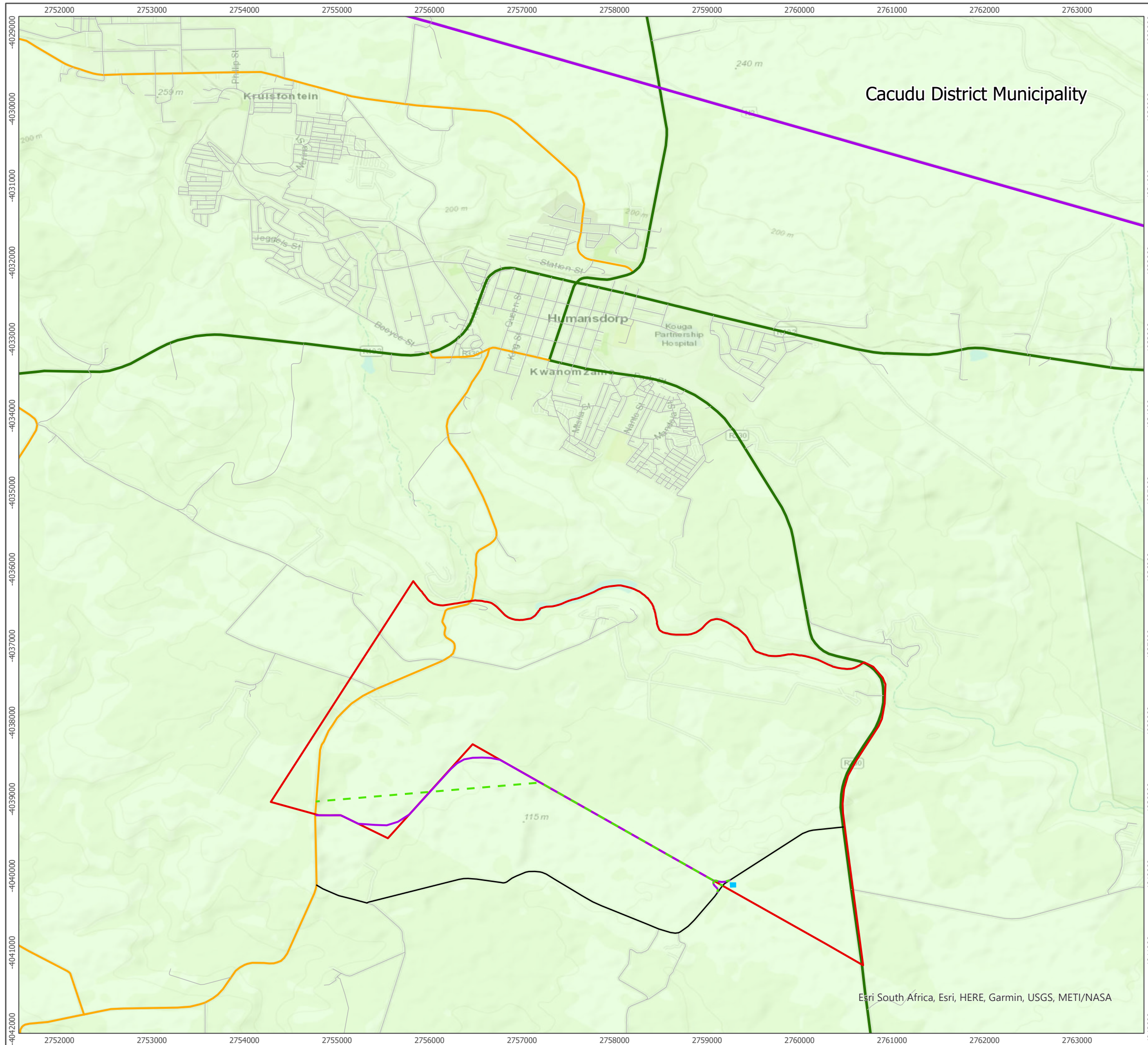
Point	Name	Latitude	Longitude
A	Preferred Road (Start)	34°04'38.90"S	24°44'47.61"E
C	Both Roads (North End)	34°05'01.58"S	24°47'12.23"E
D	Both Roads (South End)	34°05'05.79"S	24°47'07.88"E
E	Preferred Road (Bend)	34°04'42.40"S	24°45'12.32"E
F	Preferred Road (Bend)	34°04'18.77"S	24°45'43.48"E
B	Preferred Road (Middle)	34°04'19.15"S	24°45'50.07"E
G	Second Road (Start)	34°04'34.10"S	24°44'47.54"E
H	Second Road (Middle)	34°04'27.55"S	24°46'05.33"E
J	Second Road (Bend)	34°04'27.49"S	24°46'06.03"E
I	Second Road (End Mid)	34°05'03.61"S	24°47'09.83"E
K	Construction Camp	34°05'03.25"S	24°47'13.34"E



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**Proposed Development
 Geographical Co-ordinates**
 Figure 1.1

**Basic Assessment Report
 Proposed Re-alignment of MN50182
 District Road**



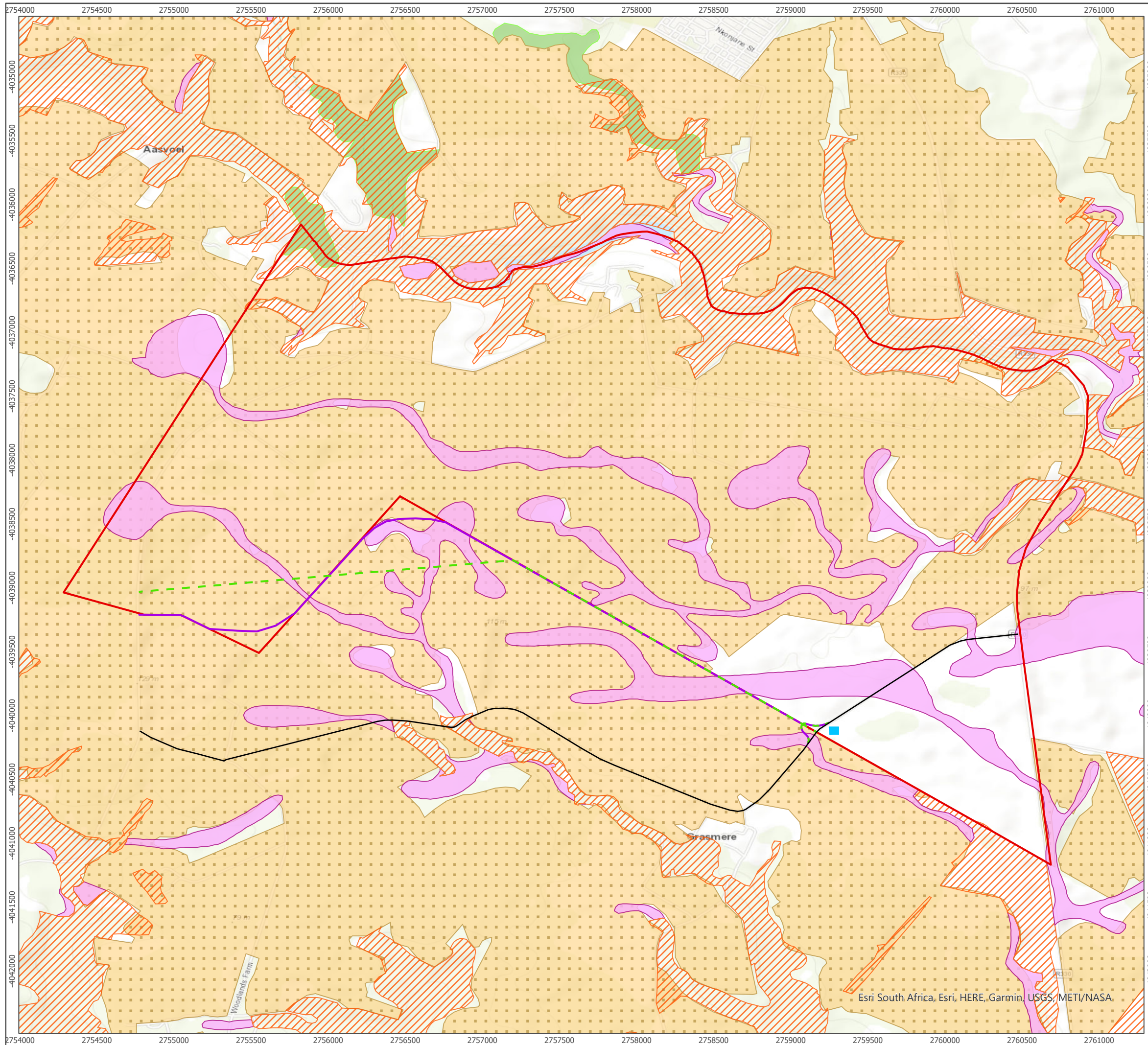
- Banna ba Pifhu Site Boundary
- Proposed Development**
- Preferred Road Realignmet Alternative
- Second Road Realignment Alternative
- Existing Public Roads**
- National Road
- Main Road
- Secondary Road
- Minor Road
- Existing District Road (MN50182)
- Proposed Construction Camp
- Local Municipalities**
- Kouga Local Municipality



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Site Locality
Figure 1.2

Basic Assessment Report
Proposed Re-alignment of MN50182
District Road



- Banna ba Pifhu Site Boundary
- Existing District Road (MN50182)
- Critical Biodiversity Areas
- Ecological Support Areas
- Sensitive Land Use and Land Cover**
- Cultivated Land
- Forest and Woodlands
- Proposed Development**
- Preferred Road Realignment Alternative
- Second Road Realignment Alternative
- Proposed Construction Camp



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Proposed Land Use and Ecological Areas
Figure 5.1

Basic Assessment Report
Proposed Re-alignment of MN50182 District Road



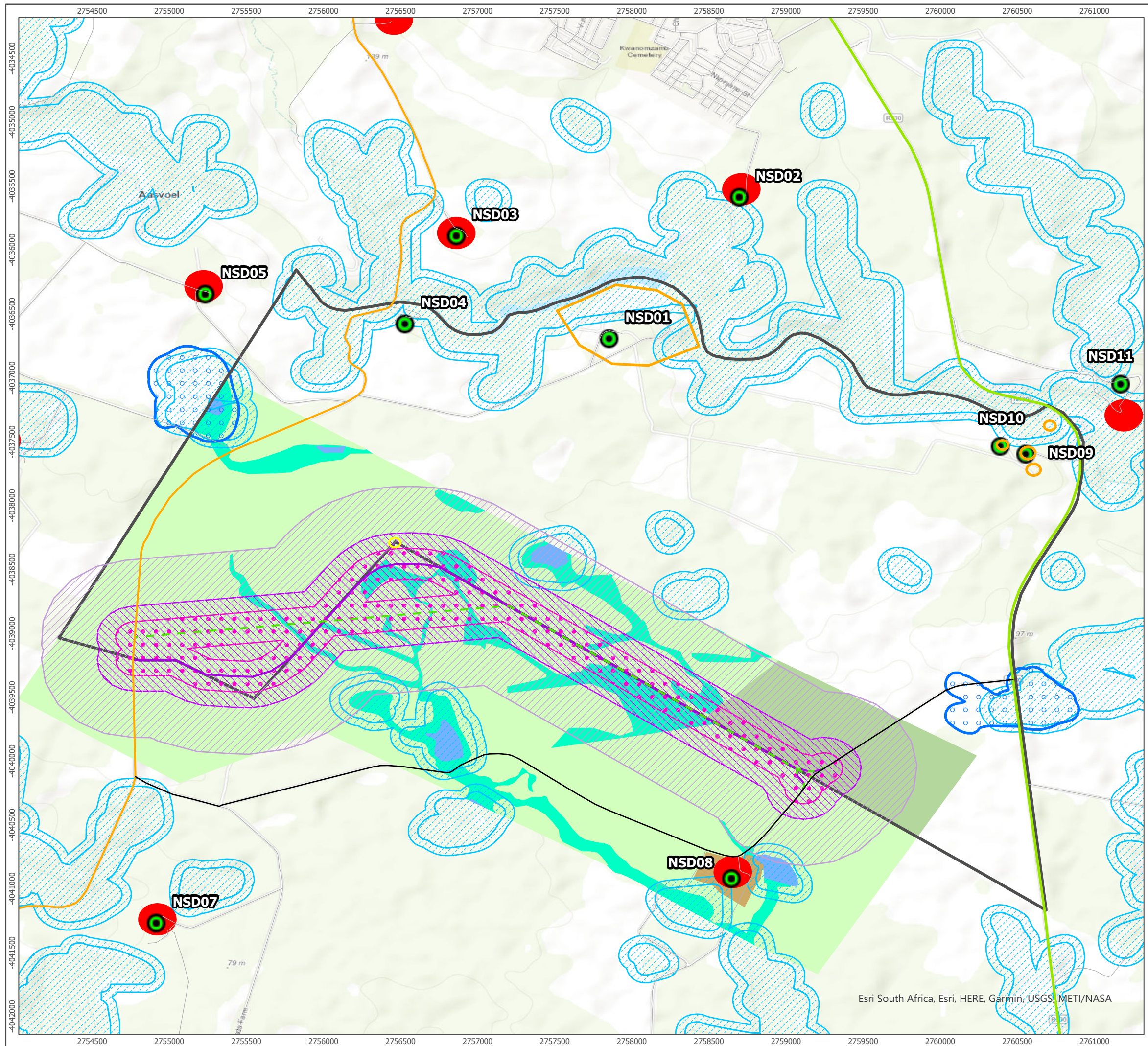
- Banna ba Pifhu Site Boundary
- Existing Public Roads**
- Main Road
- Secondary Road
- Minor Road
- Existing District Road (MN50182)
- Proposed Development**
- Preferred Road Realignment Alternative
- Second Road Realignment Alternative
- Proposed Construction Camp



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Proposed Site Development Plan
Figure 7.1

Basic Assessment Report
Proposed Re-alignment of MN50182
District Road



Existing Public Roads

- Main Road
- Secondary Road
- Minor Road
- Existing District Road (MN50182)

Proposed Development

- Preferred Road Realignment Alternative
- Second Road Realignment Alternative

Sensitivities

- Banna ba Pifhu Site Boundary
- Noise Buffer 100m
- Noise Buffer 200m
- Noise Buffer 500m
- NSD
- Heritage Sensitivity Medium
- Heritage Sensitivity Low
- Dam
- Riparian
- Transformed
- Renosterveld/Inland Pan
- Cultivated Lands
- Depression wetlands with buffer
- Visual-Wetlands Sensitivity
- Visual-Farmsteads Sensitivity

1:24,000 Scale @ A3

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Environmental Sensitivity Map
Figure 13.1

Basic Assessment Report
Proposed Re-alignment of MN50182
District Road

Esri South Africa, Esri, HERE, Garmin, USGS, METI/NASA