ENVIRONMENTAL SCREENING REPORT

SCREENING FOR PROPOSED UPGRADE OF THE D1867 ROAD, SITUATED WITHIN THE UPHONGOLA MUNICIPALITY, KWAZULU-NATAL.

MARCH 2019

Prepared For:		**Prepared By:**	
Name of Client	Ibhongo Consulting cc	Company	Afzelia Environmental Consultants
Contact Person	Monaheng Mosobela	Contact Person	Rivani Maharaj / Leigh-Anne De Wet
Postal Address		Address	236 on 9th Avenue, Windermere, Durban
Telephone	031 324 2200	Telephone Number	031-303 2835
Email	Monahengm@ibhonga.co.za	Email	rivani@afzelia.co.za / leighann@afzelia.co.za

Table of Contents

INDEMNITY

Although Afzelia Environmental Consultants (Pty) Ltd exercises due care and diligence in rendering services and preparing documents, the Consultants do not accept any liability, and the Client by receiving this document, indemnifies the Consultants (directors, managers, agents and employees) against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with services rendered directly or indirectly by the Consultants and by the use of the information contained in this document.

1. INTRODUCTION

Afzelia Environmental Consultants (Pty) Ltd (Afzelia) has been appointed to conduct an Environmental Screening for the proposed upgrade of the D1867 which is situated in the Phongola Municipality within the KwaZulu-Natal province.

1.1 Purpose of this Report

This report provides a general screening of the site to be developed, which allows for the following:

- Defining the limitations of the development based on environmental triggers;
- Determining the need for a Basic Assessment (BA) or Scoping and Environmental Impact Assessment (EIA) based on interrogation of listing notices 1, 2, 3 and 4 of the EIA Regulations 2014 GNR No. 982, 983 and 985 of 04 December 2014; read in conjunction with GNR No 327 of 07 April 2017 promulgated in terms of the National Environmental Management Act, (Act No. 107 of 1998) as amended;
- Determine the need for a Water Use License in terms of the National Water Act, 1998 (Act No. 36 of 1998) and/ or other relevant licenses in terms of environmental legislation of South Africa;
- Ascertain specialist studies that are likely to be required based on review of desktop information, aerial imagery and project details available; and
- Determining if any meetings with authorities would be required prior to final decisions with regards to development.

1.2 Assumptions and Limitations

The following assumptions and limitations apply to this assessment:

- Information obtained about the site was purely through a baseline desktop interrogation;
- Geographic Information Systems (GIS) data does not depict the actual situation on the ground due to accelerated development.

2. PROJECT DESCRIPTION

The D1867 is situated within the uPhongola Municipality of KwaZulu-Natal. The proposed upgrade comprises of a 10.5 km section of D 1867 in length starting at km 6 and ending at km 16.5. The project will include the upgrade of roads, and bridges. The project will also include the construction of borrow pits however the details are not yet available.

Project Locality

The proposed road upgrade of D1867 is situated within uPhongolo Municipality and it links with N2-32 at Km 68, runs along the border with Mpumalanga and intersects with D1869. The approximate start point of the road is 27° 20’ 38,65” S / 31° 11’ 04,57”E and ending at approximately 27° 16’ 52,62”S / 31° 14’ 23,81”E.

RECEIVING ENVIRONMENT

Climate

Pongola normally receives about 519mm of rain per year, with most rainfall occurring during summer. It receives the lowest rainfall (2mm) in June and the highest (86mm) in January. The average midday temperatures for Pongola range from 23.9°C in June to 31.3°C in January. The region is the coldest during July when the temperatures drops to 8.1°C on average during the night.

(www.saexplorer.co.za)

Geology and Soils

Sections of the road upgrade falls within the Threatened Ecosystem identified as the Kangwane Montane Grassland with conservation status of Vulnerable. The Ithala Quartzile Sourveld vegetation type can be found along the route, with undifferentiated shallow soils.

Landscape Characteristics

According to South African National Biodiversity Institute the areas along the route comprises of cultivated subsistence, urban village, grasslands and open bush (DEA:2015). This route traverses a moderate sloping terrain with a portion of the route protruding into Mpumalanga as it crosses over the Mozana River.

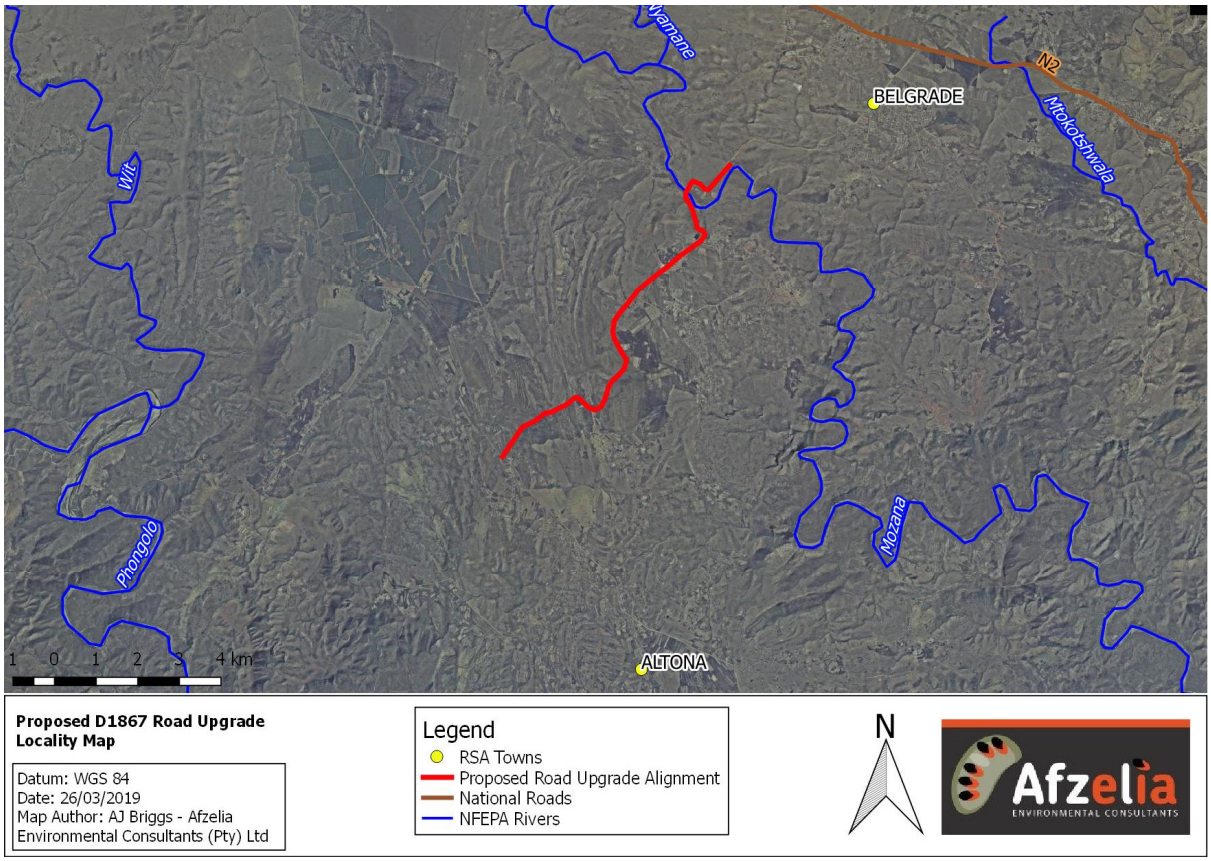

Figure 1:Locality Map proposed road upgrade

3. ENVIRONMENTAL LEGISLATION

The scope and content of this screening Report has been informed by the following legislation, guidelines and information series documents:

National Environmental Management Act and EIA Regulations 2014

The National Environmental Management Act (NEMA) (Act No. 107 of 1998) as amended sets out a number of principles to give guidance to developers, private land owners, members of public as well as authorities. NEMA provides environmental governance by providing principles for decision-making on matters that affect the environment and defines the principles that apply to the Organs of State involved in the decision-making.

The Act sets out the legal and procedural requirements for cooperative environmental governance, environmental compliance and enforcement; and regulating Government and business impacts on the environment. Regulations under the Act define activities that may not commence without prior approval from the Competent Authority.

Section 24(1) of the (NEMA), (Act No. 107 of 1998) as amended states: "*In order to give effect to the general objectives of integrated environmental management laid down in this Chapter, the potential impact on the environment of listed activities must be considered, investigated, assessed and reported to the Competent*

Authority charged by this Act with granting the relevant Environmental Authorisation."

The reference to "listed activities" in Section 24 of the NEMA relates to the regulations promulgated in GN R982, R983, R984 and R985 in Government Gazette 38282, dated 4 December 2014, which came into effect on 8 December 2014 and amended with GNR No 326 of 07 April 2017. The relevant Government Notices published in terms of the NEMA collectively comprise the NEMA EIA Regulations listed activities that require either a Basic Assessment or Scoping and EIA (that is a "full EIA") be conducted.

Mineral and Petroleum Resources Development Act (Act No. 28 of 2002; MPRDA)

In terms of Section 106 of the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002; MPRDA), government departments are exempted from the applications for mining permits and rights for material resources but is not exempted from applications for environmental authorisation i.e. Basic Assessment and Scoping and EIR Processes.

National Environmental Management: Biodiversity Act (Act 10 of 2004)

The National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA) provides for "the management and conservation of South Africa's biodiversity within the framework of the NEMA, the protection of species and ecosystems that warrant national protection, and the use of indigenous biological resources in a sustainable manner, amongst other provisions". The Act states that the state is the custodian of South Africa's biological diversity and is committed to respect, protect, promote and fulfil the constitutional rights of its citizens.

An amendment to the NEMBA has been promulgated, which lists 225 threatened ecosystems based on vegetation types present within these ecosystems. Should a project fall within a vegetation type or ecosystem that is listed, actions in terms of NEMBA are triggered.

National Water Act (Act 36 of 1998)

The National Water Act is a legal framework for the effective and sustainable management of water resources within South Africa. Section 21 of this Act identifies certain land uses, infrastructural developments, water supply/demand and waste disposal as 'water uses' that require authorisation or licensing by the Department of Water and Sanitation (DWS).

The regulated area of a watercourse for Section 21 (c) and (i) of the Act water uses in terms of Notice 509 of 2016 for any activities that requires Water Use Authorisation/Licence are defined as follows:

(a) The outer edge of the 1 in 100-year floodline and/or delineated riparian habitat, whichever is the greatest distance, measured from the middle of the watercourse of a river, spring, natural channel, lake or dam;
(b) In the absence of a determined 1 in 100-year floodline or riparian area, the area within 100m from the edge of a watercourse where the edge of the watercourse is the first identifiable annual banks fill flood bench (subject to compliance to section 144 of the Act); or
(c) A 500m radius from the delineated boundary (extent) of any wetland or pan.

National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)

The waste act provides for certain activities to be managed through a waste management license and is discussed in Government Notice No.921 - List of Waste Management Activities that have, or are Likely to have, a detrimental effect on the environment. This legislation allows for activities into three (3) categories and prescribes the process required to be applied:

<u>Category A</u>
A person who wishes to commence, undertake or conduct a waste management activity listed under this Category, must conduct a basic assessment process set out in the Environmental Impact Assessment Regulations made under section 24(5) of the National Environmental Management Act, 1998 (Act No.107 of 1998) as part of the waste management license application contemplated in section 45 read with section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).

Category B
A person who wishes to commence, undertake or conduct a waste management activity listed under this category, must conduct a scoping and environmental impact reporting process set out in the Environmental Impact Assessment Regulations made under section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as part of a waste management license application contemplated in Section 45 read with Section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).

Category C
A person who wishes to commence, undertake or conduct a waste management activity listed under this Category, must comply with the relevant requirements or standards determined by the Minister listed below:

(a) Norms and Standards for Storage of Waste, 2013; or
(b) Standards for Extraction, Flaring or Recovery of Landfill Gas, 2013; or
(c) Standards for Scrapping or Recovery of Motor Vehicles, 2013.

4. ENVIRONMENTAL ASSESSMENT TRIGGERS

Although the terms of reference did state the project will include a borrow pit, no details of the borrow pit was provided, and therefore the borrow pit was not screened as part of this process.

Further details are required in order to confirm the exact requirements in terms of the Borrow pit. Based on the information available for the road upgrade only, a Basic Assessment Process is required.

The following tables provide a list of the likely triggers for the proposed road upgrade.

Table 1:List of activities associated with the proposed development that trigger a BA

LISTING NOTICE	ACTIVITY NUMBER	ACTIVITY DESCRIPTION
GN324	4	The development of a road wider than 4 metres with a reserve less than 13,5metres (d) KwaZulu-Natal (vii) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plan;
GN 327	14	The development of (iii) bridges exceeding 10 square metres in size; (vi) bulk storm water outlet structures exceeding 10 square metres in size; Where such development occurs – (a) within a watercourse; (c) if no development setback has been adopted within 32metres from a watercourse, measures from the edge of a watercourse; (d) KwaZulu-Natal (vii) Critical biodiversity areas or ecological support areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (x) Outside urban areas; (aa) Areas within 10 Kilometres from national parks or world heritage sites or 5 kilometres from any terrestrial protected area identified in terms of NEMPAA or from the core area in a biosphere reserve.
	19	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from- i. a watercourse; ii. the seashore; or iii. the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater but excluding where such infilling, depositing, dredging, excavation, removal or moving- a. will occur behind a development setback; is for maintenance purposes undertaken in accordance with a maintenance management plan; or falls within the ambit of activity 21 in this Notice, in which case that activity applies.
	21	Any activity including the operation of that activity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks directly related to the extraction of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).

	22	The decommissioning of any activity requiring – i. a closure certificate in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002); or a prospecting right, mining right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure.
	27	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for- the undertaking of a linear activity; or maintenance purposes undertaken in accordance with a maintenance management plan.
GN 325	12	The development of- i. canals exceeding 100 square metres in size; ii. channels exceeding 100 square metres in size; iii. bridges exceeding 100 square metres in size; iv. dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size; v. weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size; vi. bulk storm water outlet structures exceeding 100 square metres in size; vii. buildings exceeding 100 square metres in size; viii. infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs- a. within a watercourse; b. in front of a development setback; or c. if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; - excluding- I. the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; II. where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; III. activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; IV. where such development occurs within an urban area; or where such development occurs within existing roads or road reserves.

Table 2:List of possible activities triggering a Water Use License or General Authorisation

SECTION 21	ACTIVITY DESCRIPTION
(a)	Taking water from a watercourse
c	Impeding or diverting the flow of water in a watercourse
i	Altering the bed, banks, course or characteristics of a watercourse

Based on the information provided it is not anticipated that the proposed project will trigger a waste license application. Once a detailed description of activities to be undertaken is provided, any further licenses required will be confirmed as part of the Basic Assessment process.

5. DESKTOP BIOPHYSICAL ASSESSMENT

The South African National Biodiversity Institute provides the Land Use Decision Support tool, or LUDS, which can be utilised to obtained information on the biophysical summary of each municipality, as well as to confirm if there are any biodiversity concerns with any site within South Africa. This information was utilised to determine if any biophysical constraints are likely to be encountered on the proposed development site, and if so, if these will result in possibly halting the development (through red flags), severely restricting the development, or not restricting development. A matrix has been developed for each of these potential issues, and to allow for the determination of risk for the development. This table is provided below, with associated maps also presented following the table.

5.1 Desktop Wetland Assessment

Desktop Wetland Delineation

A desktop wetland delineation exercise identified 6 riparian habitats and 3 wetland units (Units W1 – W3) along the D1867 Road infrastructure and its 500m buffer (Figure 2). Whilst no nationally prioritised wetlands (wetland FEPA) where identified within the study area, the sub-catchment (No. 2270) within which the study area is located was flagged as an important catchment (Upstream Management Catchment) for the protection of downstream FEPAs and fish support areas from degradation.

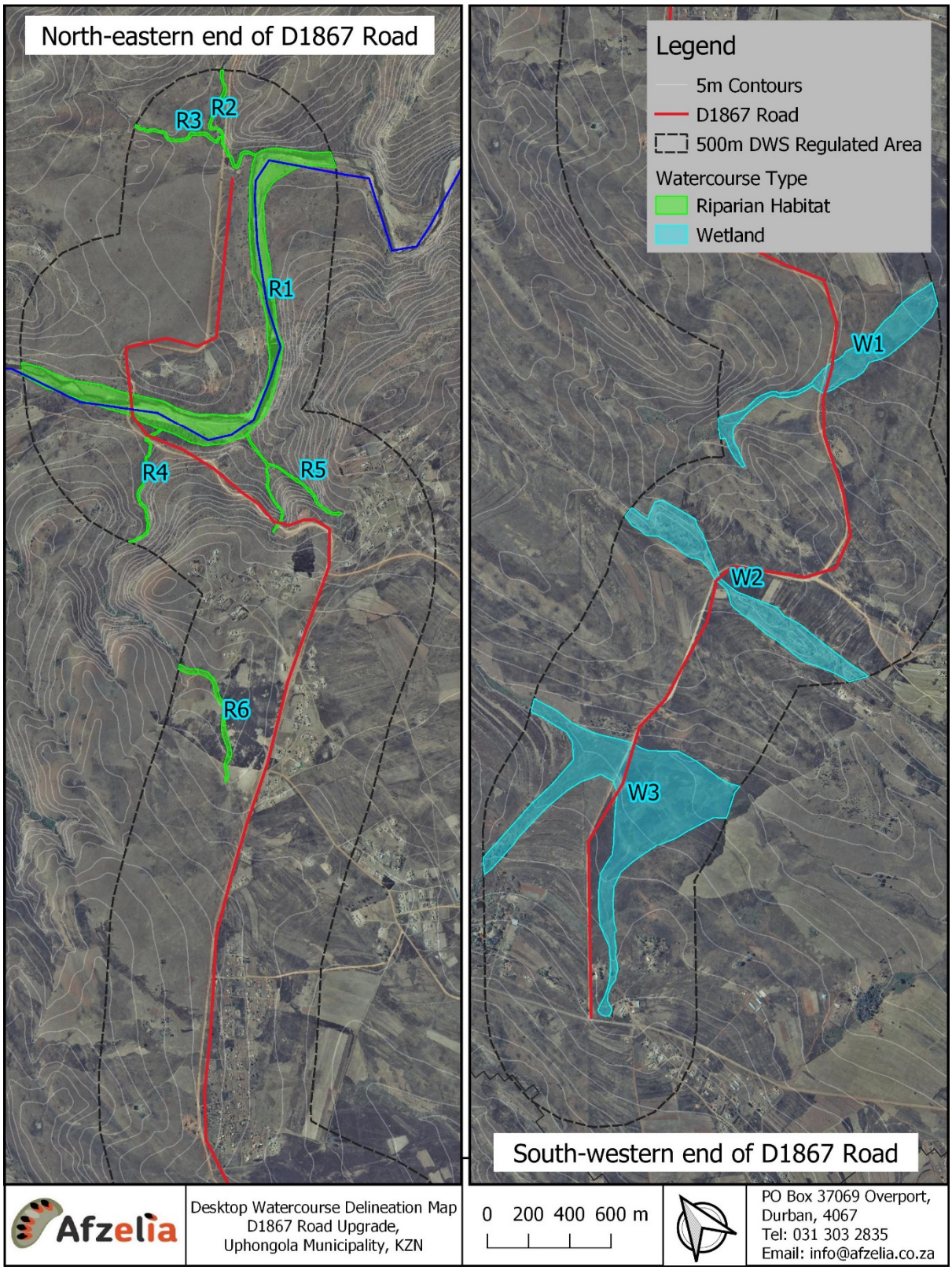

Figure 2:Desktop delineated watercourse map

Impact Potential Assessment

Based on the location of delineated watercourses within the study area, 3 riparian habitats (R1 (Mozana River), R4 & R5) and 3 wetland units (W1, W2 & W3) were assessed as being likely to incur impacts of high significance. This is because the proposed road upgrade will occur within these watercourses. Riparian Unit R2 was assessed as being likely to incur impacts of moderate significance due to being located near the development area. All other watercourses were assessed as being likely to incur impacts of low significance due to being located further away

from the development area. All watercourses will however need to be delineated in the field as part of the Wetland and River Habitat Assessment.

The photos below depict the current situation on site. These photos were taken by the EAP during a site visit undertaken in March 2019

Photo 1: View of stream 1 at the start of the dirt road

Photo 2: View of the Mozana River

Photo 3: View of the Monzana River from single vehicle bridge

Photo 4: View of stream identified +/- 50 m after crossing the Monzana River.

Photo 5: View of wetland identified on site at the end of the D1867 roadway (intersection with D1869 roadway)

Photo 6: View of another wetland identified on site.

Table 3: Desktop risk ratings and associated rationale.

ID	Impact Potential	Rationale	Implication
R1	High	Riparian Unit R1 (Mozana River) has a high potential of being impacted because all construction activities will occur within the riparian habitat. The riparian habitat is likely to be transformed and disturbed.	**Requires infield delineation**
R2	Moderate	Riparian Unit R2 has a moderate potential of being impacted because construction will occur about 50m away from the riparian habitat.	**Requires infield delineation**
R3	Low	Riparian Unit R3 has a low potential of being impacted because all construction activities will occur at least 180m away from the riparian habitat. There is a high likelihood that it may not be impacted. Infield riparian habitat delineation is required to confirm the extent of the riparian habitat and the lack of wetland habitat associated with the riparian habitat.	**Requires infield delineation**
R4	High	Riparian Unit R4 has a high potential of being impacted because all construction activities will occur within the riparian habitat. The riparian habitat is likely to be transformed and disturbed.	**Requires infield delineation**
R5	High	Riparian Unit R5 has a high potential of being impacted because all construction activities will occur within the riparian habitat. The riparian habitat is likely to be transformed and disturbed.	**Requires infield delineation**
R6	Low	Riparian Unit R6 has a low potential of being impacted because all construction activities will occur at least 150m away from the riparian habitat. There is a high likelihood that it may not be impacted. Infield riparian habitat delineation is required to confirm the extent of the riparian habitat and the lack of wetland habitat associated with the riparian habitat.	**Requires infield delineation**
W1	High	Wetland Unit W1 has a low potential of being impacted because all construction activities will occur within the wetland habitat. The wetland habitat is likely to be transformed and disturbed.	**Requires infield delineation**
W2	High	Wetland Unit W2 has a low potential of being impacted because all construction activities will occur within the wetland habitat. The wetland habitat is likely to be transformed and disturbed.	**Requires infield delineation**
W3	High	Wetland Unit W3 has a low potential of being impacted because all construction activities will occur within the wetland habitat. The wetland habitat is likely to be transformed and disturbed.	**Requires infield delineation**

5.2 Desktop Ecological Screening

Provincial Critical Biodiversity Areas (CBA: Optimal) have been identified at the south western extent of the proposed road upgrade alignment, whilst KaNgwane Montanne Grassland (nationally rated as Vulnerable) was also identified along certain sections of the alignment (Figure 4). The perceived existence of intact CBA: Optimal and Vulnerable habitat alongside the existing road necessitates the requirement that a suitably qualified Ecological Specialist undertake a site-based assessment for the proposed road upgrade.

A summary of the ecological and aquatic screening is provided in Table 4, below.

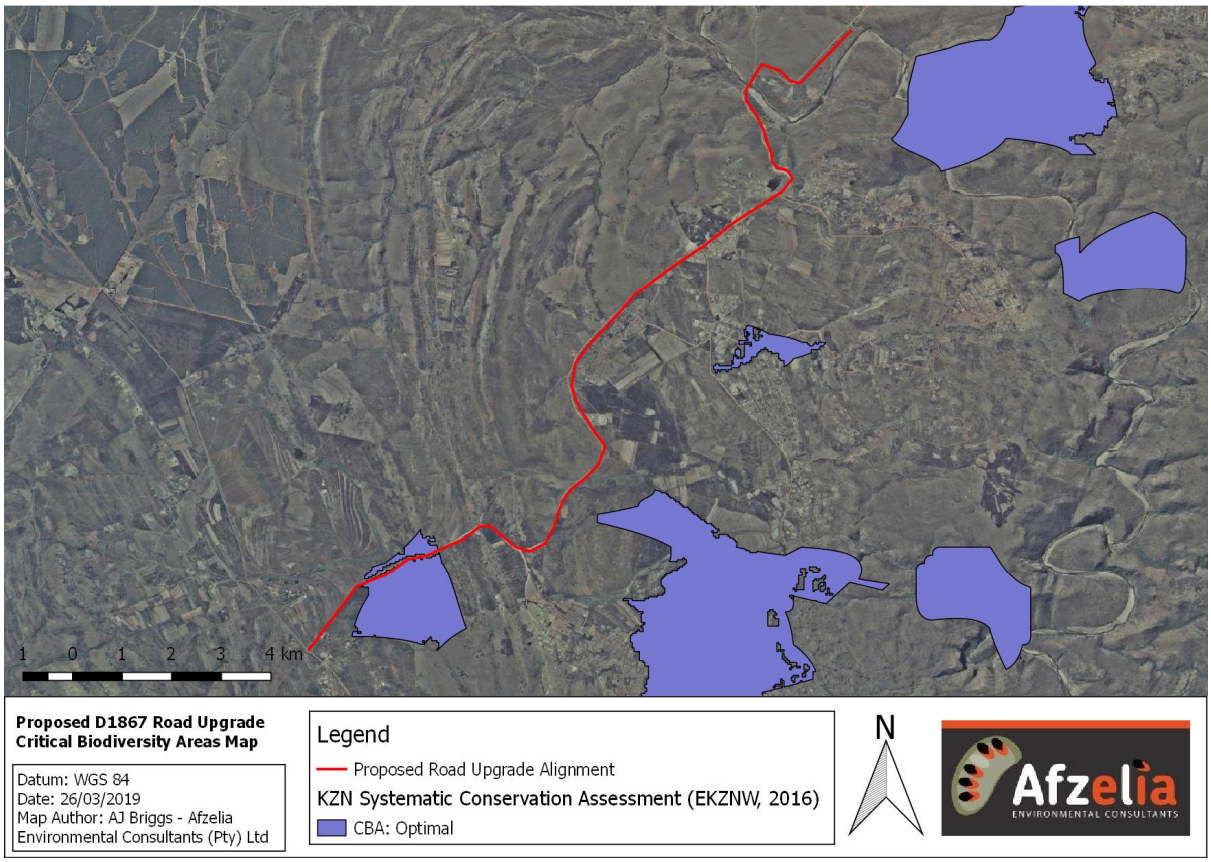

Figure 3:KZN Systematic Conservation Map

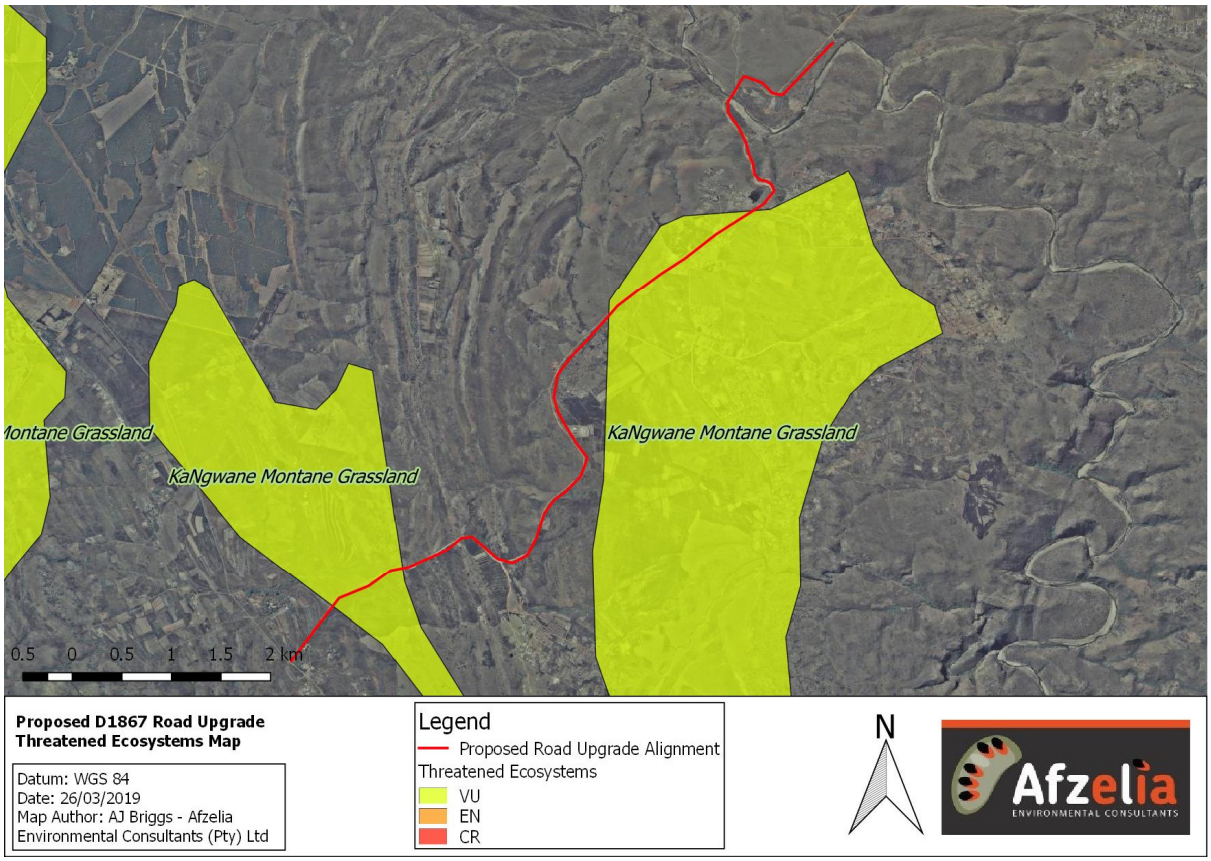

Figure 4:Threatened Ecosystem Map

Table 4: Biophysical Risk Assessment Matrix

Biophysical Attribute	Data origin	Present on site	Notes	Restriction			
				Red Flag	Severe	Moderate	Low
RAMSAR wetland	RAMSAR GIS shapefiles	No	n/a				
River FEPA sub-catchment	SANBI GIS shapefiles	**Yes**	The sub-catchment was identified as an Upstream Management Area. This means the catchment is important for the protection of downstream FEPAs and fish support areas from degradation.				**X**
Wetland FEPA	SANBI GIS shapefiles	No	n/a				
Other wetlands	Desktop delineation	**Yes**	Several non-prioritised wetlands were recorded within the study area. These will require best practice mitigation measures to reduce construction related impact on wetlands.			**X**	
Estuary	CSIR, SANBI GIS shapefiles	No	n/a				
Presence of forests	Google earth imagery and specialist opinion	No	n/a				
Presence of rocky outcrops	Google earth imagery and specialist opinion	No	n/a				
IBA	Birdlife Africa shapefiles	No	n/a				
Threatened Ecosystem	SANBI shapefiles	**Yes**	Sections of the proposed upgrade fall within areas of KaNgwane Montane Grassland which have been classified as Vulnerable. As there is an existing dirt road and the overall alignment only falls partially within the above-mentioned vegetation type, the impacts should be localised.				**X**
Protected Area	SANBI shapefiles	No	n/a				
NPAES focus areas	SANBI shapefiles	No	n/a				
RAMSAR wetland	RAMSAR shapefiles	No	n/a				
CBA	SANBI shapefiles	**Yes**	Site investigation required, A 900m section of the proposed road upgrade passes through a CBA: Optimal area which has been identified at a desktop level.				**X**
ESA	SANBI shapefiles	No	n/a				

6. CONCLUSIONS

6.1 Environmental Assessment

Based on the desktop screening and site investigation conducted, a Basic Assessment process is required. Although the terms of reference do state that the project will include the construction of Borrow pits, however no details of the borrow pits were provided that therefore it could not be assessed as part of this screening. More detailed information is required in order to confirm the exact triggers in terms of the EIA and waste regulations. See tables 1 and 2 for anticipated triggers of the proposed route upgrade

6.1 Biophysical Risk Assessment

The results of the risk assessment indicate that there are minimal restrictions to the development, with a likely buffer around the watercourse, wetland and the possible presence of a forest. The following recommendations are made:

- A detailed description of the proposed development must be provided to ensure all legal requirements are properly considered;
- A site investigation be conducted by a wetland, ecological and heritage specialist, in order to verify site conditions

7. RECOMMENDATIONS

The following recommendations are a requirement for the establishment of the proposed Road Upgrade:

- Details of the proposed borrow pits must be provided in order to determine any legal requirements in terms of the relevant environmental legislation.
- Other reports which will be required to inform the EIA and Water Use License include:
  - Layout alternatives;
  - Civil designs / drawings; and
  - Stormwater management plan.
  - Based on description of the projects and the outcome of the screening process there may be a need for further investigations and specialist studies, these are summarised below:

Table 5: Recommended additional specialist requirements

ENVIRONMENTAL FEATURE	SPECIALIST STUDY REQUIRED / PROPOSED RESOLUTION
Wetland	A wetland specialist must be appointed to conduct a site assessment in order to identify, delineate and assess the wetland located along the route. A rehabilitation plan may also be required.
Estuary/ River / Stream	An aquatic specialist must conduct a site assessment to identify and assess the river and stream located along the route.
Terrestrial Environment	An ecologist must be appointed to investigate how much indigenous vegetation will need be cleared and if any fauna and flora species of conservation importance will be affected by the proposed road upgrade. The assessment must determine if a Search Rescue and Relocation Plan of flora/ fauna is required and if any permits would be required from DAFF for any protected trees on site.
Heritage	A heritage specialist must be appointed as the proposed linear project exceeds 300m in length, therefore an HIA is required to determine if any heritage resources occur on site and if any permits are required from the KwaZulu-Natal Heritage Authority Amafa.
Palaeontological	A palaeontological specialist must be appointed to assess the potential palaeontological impact of the proposed prospecting activities (desktop level).

8. REFERENCES

1. Department of Environmental Affairs. DEA National Landcover (TIFF) 2015 [Raster] 2015. Available from the Biodiversity GIS website, downloaded on 29 March 2019.