

# BASIC ASSESSMENT REPORT FOR MACENGENI TO MACIJO ROAD



Prepared for:



**Nongoma Local Municipality**  
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## **Notice**

Nzingwe Consultancy is an independent Environmental Assessment Practitioner (EAP) who will conduct the EIA process applicable for this development on behalf of the Nongoma Local Municipality. This Basic Assessment Report (BAR) has therefore been compiled by the EAP to provide all the required information which will inform the decision making on the application for Environmental Authorization (EA) being lodged by the Nongoma Local Municipality with the Department of Economic Development, Tourism and Environmental Affairs, Zululand District.

Following conduction of a site visit to the site of the proposed development, Nzingwe Consultancy identified the Basic Assessment Process as the Environmental Impact Assessment (EIA) that must be followed for the proposed development. The BAR has therefore been drafted to present information with regards to the proposed development obtained through various means including field assessment, information from the engineers and desktop study. Nzingwe Consultancy has strived to ensure that the draft BAR incorporates all information required for a BAR as outlined in the EIA Regulations (2014).

Baseline conditions of the site and surrounding areas as well as any environmental sensitivities on site will be indicated within this report. The draft BAR will serve the purpose of providing stakeholders and I&APS with an opportunity to comment on the proposed development and therefore have input into the decision making process for the application for EA.

### **Contributing Authors:**

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## 1 Executive Summary

Nongoma Local Municipality is proposing the construction of a road from Macengeni to Macijo. The proposed road will include construction of two causeways and a number of pipe crossings. The proposed road is aimed at connecting the Macengeni and Macijo Local Areas located within the Nongoma Local Municipality. The proposed road will be developed on a route that is being used by the locals to commute between the two areas to create safer and easier access for these communities.

As per the EIA Regulations (2014), a draft Basic Assessment Report is required to be compiled and provided to I&APs and Stakeholders to provide them with detailed information to enable them to comment on the proposed development. This enables the Departments that administer a law relating to a matter affecting the environment to be comment on the development and give input into making of the decision as to whether to grant or refuse authorization of the proposed development. Comments of those who will or may be affected or are interested in the proposed development can also be obtained and considered in the decision making process.

Basic Assessment reports are a key tool in effective environmental management. An important component of ensuring a healthy environment is to understand the impacts human activities have on the environment, the health and well-being of those who live in it and depend on the environment. This Basic Assessment report can be seen as a system of analysing and reporting on the impacts of the construction of the proposed road and associated crossing structures to enable decision makers to decide whether this activity should be implemented and if so, the conditions within which it must be implemented in order to successfully limit anticipated impacts to acceptable levels.

The information contained in this report is a combination of primary data collection (onsite exercise) and secondary desktop research. The information contained in this report has been cited from different sources, analysed and synthesized into the basic assessment report. Where possible, sources have been cited, failure to do so in some instances is not intentional.

## 2 ACRONYMS & ABBREVIATIONS

**BSc** : Bachelor of Science

**DBAR** : draft Basic Assessment Report

**EA** : Environmental Authorization

**EAP** : Environmental Assessment Practitioner

**EIA** : Environmental Impact Assessment

**FBAR** : final Basic Assessment Report

**Hon** : Honours

**IEM** : Integrated Environmental Management

**I&APs** : Interested and Affected Parties

**NEMA**: National Environmental Management Act

**PPP**: Public Participation Process

## 1. Introduction

### 1.1 Details of Applicant

Name of Consultant/Company	Nongoma Local Municipality
Contact Person (s)	Ms. Julile Radebe
Physical Address	Lot 103, Main Street, Nongoma PO Box 84 Nongoma KwaZulu-Natal 3880
Telephone	035 831 7500
Fax	035 831 3152
Email	N/A

### 1.2 Details of Environmental Assessment Practitioner (s)

Name of Consultant/Company	Nzingwe Consultancy
Contact Person (s)	Silindile Nqoko
Physical Address	06 Staffordshire Place 117 Marine Drive Shelly Beach 4265
Telephone	033 315 7751
Fax	086 662 1789
Email	silindile@nzingwe.co.za

The EAP was appointed in accordance to the requirements of the National Environmental Management Act (Act No. 107 of 1998). Ms Silindile Nqoko heads the project team and acts as the project manager for all phases of the project. Silindile holds a BSc. Environmental Sciences (Hon.). She is an Environmental Scientist with 8 years of experience. Silindile specialises in Integrated Environmental Management (IEM), Environmental Impact Assessments (EIAs), Rural Development, Land use issues and Socio-Economic surveys. Silindile has been a project scientist for various EIA's in KwaZulu Natal, Eastern Cape and Mpumalanga provinces in South Africa. Silindile is currently a Project Manager and Senior Environmental Scientist at Nzingwe Consultancy.

### 1.3 Names and Expertise of representatives of the EAP

Name of representatives of the EAP	Education Qualification	Professional Affiliations	Experience at Environmental Assessment
Ms. Silindile Nqoko	BA Honours	IAIASA	8
Ms. Anelisa Mhatu	BSc Ecology and Geography	N/A	3

### 1.4 Names and Expertise of Specialists

Name of specialist	Education qualifications	Field of expertise	Section/ s contributed to in this basic assessment report	Title of specialist report/ s as attached in Appendix D
<b>NO SPECIALIST HAS BEEN APPOINTED</b>				

### 1.5 Project Title

Macengeni to Macijo Road

### 1.6 Background to the project

The South African Government is faced with the challenge of rectifying backlog of a lack of service delivery to previously disadvantaged areas. Service delivery is mainly hindered by lack of access to these areas as they are usually isolated, located far from developed areas from which services must be delivered. Once such areas are reached a further challenge is experienced in that road conditions are poor and therefore do not allow for easy vehicular movement within and between these areas.

The Nongoma Local Municipality is a predominantly rural municipality. Roads within the rural areas of Nongoma and surrounding areas are generally in a poor condition and thus become inaccessible during the rainy season. One of the main impacts of poor road structures is that health and education facilities are difficult to access (Nongoma Draft Integrated Development Plan 2012/13 TO 2016/17).



Macengeni and Macijo Local Areas are some of the rural areas within the Nongoma Local Municipality that are affected by poor road networks. Access to these areas is challenging throughout the year but is especially so during rainy seasons. The Nongoma Local Municipality is therefore proposing the construction of the road from the Macengeni to Macijo Area and develop associated crossing structures and stormwater management systems.

In light of the National Environmental Management Act (Act No. 107 of 1998) (NEMA), its Environmental Impact Assessment Regulations (4 December 2014) and Listing Notices 1-3 (GNR 983 – GNR 985 of 4 December 2014), the proposed development triggers a Basic Assessment process as it triggers activities that are listed within Listing Notice 1 (GNR 983). Nzingwe Consultancy has been appointed as the Environmental Assessment Practitioner (EAP) according to Regulation 12 of the EIA Regulations (4 December 2014) and will therefore be responsible for carrying out the Basic Assessment process.

This report serves as the draft Basic Assessment Report (dBAR) required in the Basic Assessment Environmental Impact Assessment process. A basic assessment exercise entails the disclosure of all relevant information related to the proposed project and the identification of the nature of issues. Interested and Affected Parties (I&APs) are required to review and comment on the dBAR as per the comment period timeframes (30 days) stipulated within the Environmental Impact Assessment Regulations (4 December 2014).

All input will then be collated into a final Basic Assessment Report (fBAR) to be submitted to the Department of Economic Development, Tourism and Environmental Affairs, Zululand District for approval.

Nzingwe Consultancy will facilitate the Basic Assessment process and undertake tasks in terms of an approved Project Implementation Plan (PIP) as follows:

- Conduct site visits for the preliminary physical observation of the site;
- Map generation
- Collect site information, including; inter alia

- Identification of authorities to be involved in the process i.e. municipality and key personnel, government departments and any other authorising bodies;
- Applicable development environmental statutory requirements and guidelines for the study area;
- Location and size of the site (including an assessment of the existing size vs space norms);
- access and accessibility;
- Biophysical and social profile of the proposed site and surrounds;
- Current land use of the site and surrounding areas and the potential impacts thereof;
- Site zoning and surrounding zonings;
- Preliminary environmental Assessment;
- Desktop information on the existing infrastructure and associated services;
- Ownership details and land negotiations (if required);
- Analyse the information and compile the site assessment report ( with recommendations on the specialist input required and any other requirements, based on the findings);
- Investigate alternative sites or location (if required).

## **2 Description of the proposed activity**

The proposed development will include the construction of a Type 7A gravel road that is approximately 2.2km long and 5.5m wide. The proposed road construction includes traversing of a number of streams. Stream crossings will therefore be constructed as part of the proposed development and are the main activities triggering the Basic Assessment Process. Therefore, the EIA process has been focused on the triggering portions of the project (crossings). There will also be stormwater management drains as that will be constructed as a part of the proposed development.

There will be two (2) causeways constructed as part of this development. About 12 pipe crossings will also be created as part of the proposed project.

The following are the project components;

As part of the proposed development, the following activities are expected during the construction phase of the project:

- Removal of vegetation: the proposed development follows car tracks on a path already being used by the community. However, there is no formal road existing and therefore a new road will need to be established which will necessitate the removal of vegetation.
- Pouring and compaction of gravel: the proposed road is a gravel road and therefore G5 material will be imported for the road surface.
- Construction of causeways: the proposed road traverses a number of streams where there are no existing crossings. Causeways will therefore be constructed and pipe crossings used in some areas.
- Earthworks and formation of new side drains with approximately 6000m<sup>3</sup> of cut to fill.
- Construction of drains: different types of drains will be used for stormwater management and soil erosion control.
- Rehabilitation: post construction, disturbed areas around the site will be rehabilitated.

### **3 Feasibility and reasonable alternatives**

#### **3.1 Feasibility**

The Nongoma Local Municipality as a local municipality has the responsibility to deliver road services for roads that are not under the Department of Transport. As such, each financial year funds are put aside for road development projects within the Municipality's budget and available funds. Funds have therefore been allocated for this development hence its proposal which makes the project financially feasible for the Nongoma Local Municipality.

Although the site for the proposed development appears to be a rocky area, gravel roads have in numerous instances been developed in areas similar to this area within South Africa. Therefore the technology and material needed can be obtained for the project to be run to completion. Skills needed are also available with local community members to be employed for manual works.

Car tracks exist on the route to be used which indicates current and previous use of the route where the road will be developed. Therefore the site is suitable for the proposed development and for commuting as it is the mainly used route within the community.

## 3.2 Alternatives

### 3.2.1 Needs and Desirability

The proposed development is a necessity within the affected communities. It is important for easy and safe access to communities of people to be established to aid service delivery and community development. The communities to be affected by the proposed development currently have challenges travelling between places. This problem escalates during rainy season. Pedestrians have even more of a challenge during the rainy seasons due to channel flow within the streams which makes it difficult for them to cross as there are not crossing structures. Children commute on this road on a daily basis travelling to school and to visit friends and family. The conditions of the existing road also make vehicular access difficult which limits access to emergency services.

The proposed development will aid access to amenities such as schools and clinics as well as improve access to service delivery as safe access is created. Temporary employment opportunities will also be gained during the construction phase which will provide temporary financial relief.

### 3.2.2 Activity to Be Undertaken

The proposed development will include the construction of two (2) causeway crossings:

The proposed causeways will be 5.5m wide and 10-15m long. Causeway 1: 2 x 900mm  $\emptyset$  pipes and Causeway 2: 2x 1200mm  $\emptyset$  pipes.

There will also be about 12 pipe crossings and pipes to be used for the pipe crossings will have a diameter ranging between 450mm and 600mm.

### 3.2.3 Location

The site for the proposed development is located in Ward 3 of the Nongoma Local Municipality and is approximately 51km away from the Nongoma Town CBD. The coordinates for the starting point of the proposed road are: 27°40'44.31"S 31°47'14.12"E. The road will connect two rural residential areas. A number of streams exist within the area that will be traversed by the proposed development. Causeways will be located at **27°40'45.09"S : 31°47'27.05"E** and **27°40'35.39"S : 31°47'51.49"E**. Layout details can be seen on the layout map attached as Appendix C.

### 3.2.4 Technology

Machinery/ technology to be used during the construction phase will include but not be limited to:

- Tractor Loader Backhoe
- Grader (Cat 140H equivalent)
- 10 m<sup>3</sup> Tip truck
- Excavator (100-140kW)
- Compressor and 2 jackhammers
- Pedestrian roller, double drum (BW90)

### 3.2.5 Construction Method

For the construction of the causeways, the following activities will take place:

- Temporary diversion of flow;
- Excavation of sediments from the stream for establishment of foundation;
- Anchoring for the causeway on the bedrock within the stream;
- Construction of foundation and rest of causeway including layering of concrete stormwater pipes and construction of the causeway surface.

### 3.2.6 No-go

The option to not construct the proposed structures would mean that the anticipated impacts on the streams and surrounding vegetation will not be experienced. The community will continue to have difficulty of access especially during wet weather conditions. Lives will therefore be continuously risked when community members continue to use the existing un-engineered route with areas of proposed causeways and pipe crossings becoming increasingly difficult to pass during the rainy season.

## 4 Description of property on which activity is to be undertaken

The area on which the proposed development will take place is a rural area. There are communities located at the beginning and end of the road. The road passes an area with no houses on it which is mainly dominated by acacia and succulent plant species. There are streams to be traversed. No distinct land use exists with some of the activities taking place

within the 2 communities including subsistence farming and housing. There is also a school located near the starting point of the road within the Macengeni Local Area.

#### 4.1 Description of Affected Environment

##### 4.1.1 Vegetation

According to the maps and vegetation units by Mucina and Rutherford (2006), the proposed development is located within the Northern Zululand Sourveld. The characteristic vegetation for areas that are within this unit includes wooded grassland which is the dominating vegetation type. In other places, pure sour grassland is found with a rare occurrence of dense bushveld thickets in some areas.

True to the characteristics of the unit within which it is found, the area to be traversed by the proposed road is dominated by wooded grassland with acacia being the dominating species. There are also succulent plants such as the *Aloe marlothii* and *Cerus jamacaru*.

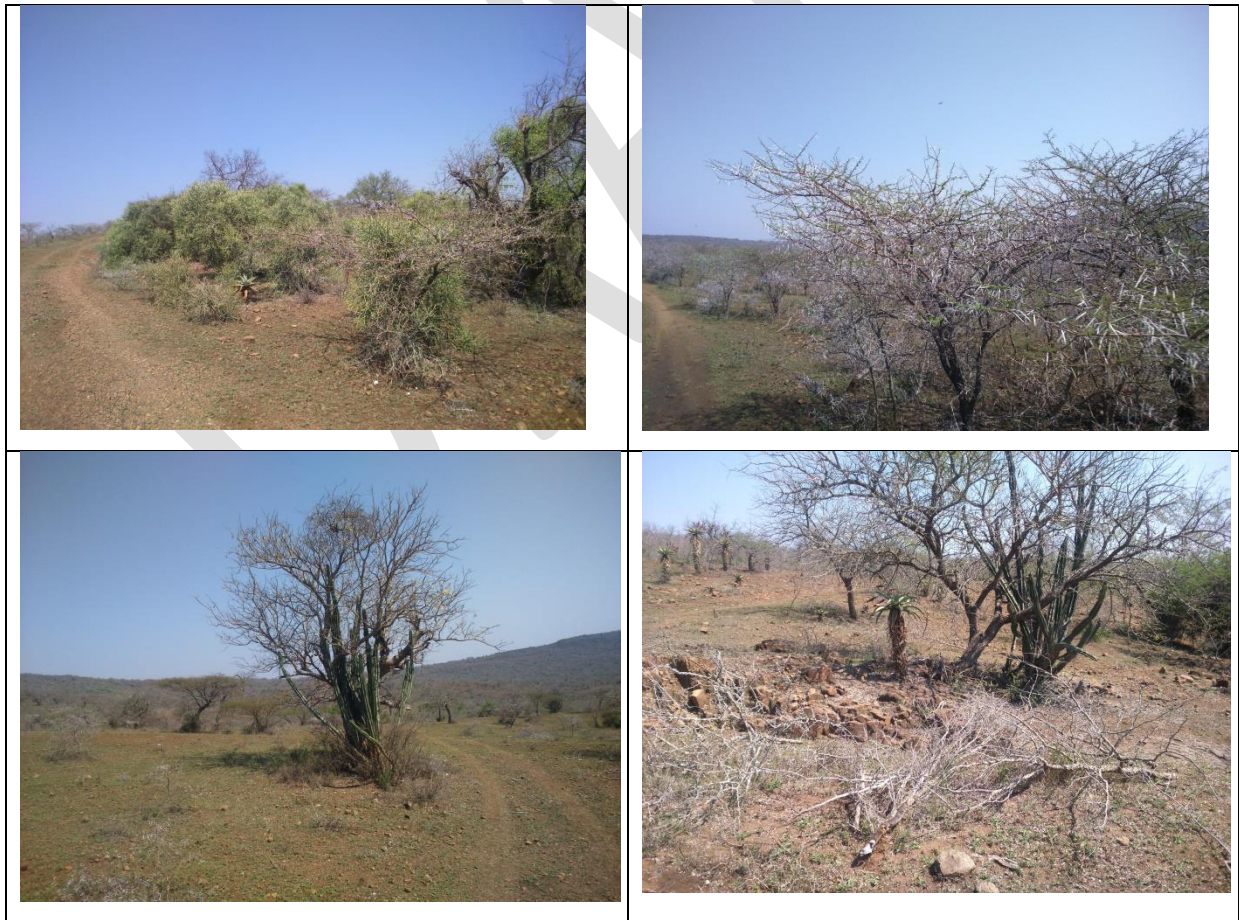


Figure1: Image depicting the vegetation in around the site.

#### 4.1.2 Geology and Soil

A general description of the geology of the area was obtained from Mucina and Rutherford (2006) description of the geology of the unit within which the site is located. The unit is said to be characterised by well-drained and shallow soil forms such as Glenrosa and Mispah, derived from various lithologies. Land types are mainly Fb and Fa with some Ac.



Figure 2: Image showing an exposed area where one of the proposed crossings will be constructed.

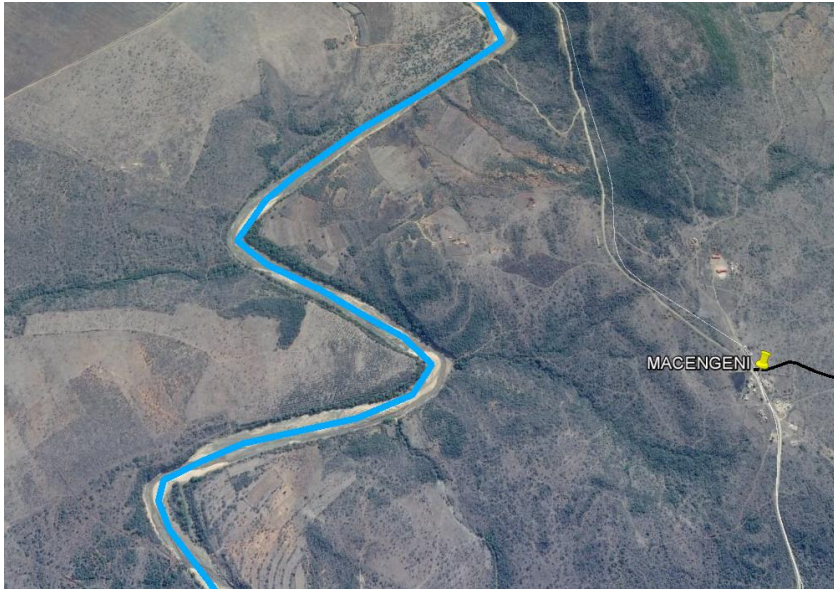
As can be seen from the image above, the site for the proposed development is rocky with reddish-orange soils. Soils appear to be shallow and easily eroded.

#### 4.1.3 Climate

The site for the proposed development is located in an area that is located within the province of KwaZulu Natal where climate is mainly determined by the current from the Indian Ocean. Rainfall is therefore received in summer with little to no rain occurring during winter season. Nongoma Experiences warm summers and mild-cold winters.

#### 4.1.4 Watercourse-River

The main watercourse within the locality of the proposed road is the Nkunzana River. However, this river will not be directly affected by the proposed development. A number of streams are located within the site of the proposed development and most of these stream form part of a network of tributaries that feed the Nkunzana River which is connected to the Mkuze River to the north and Mpuphusi River to the south. There are no wetlands located within or in proximity of the area to be affected by the proposed development.



Further details of the layout of the road and crossing structures and watercourses to be affected can be obtained from the layout map attached as Appendix C of this report.

#### 4.1.5 Surrounding Community

The proposed causeways will be located in an area that is generally an open space between the Macengeni and Mcacijo local communities. These communities are rural with formal and semi-formal housing structures. There is a school located near the starting point of the road in the Macengeni Area which is called Mtakayise Combine School.

## 5 Identification of all legislation and Guidelines

In order to protect the environment and ensure that this development is undertaken in an environmentally responsible manner, there are various significant pieces of environmental legislation that focuses on this assessment. The proposed development must conform *inter alia* to:

- I. The Constitution of South Africa Act, 1996 (Act No. 108 of 1996)
- II. National Environmental Management Act (107 of 1998) and its EIA Regulations
- III. KwaZulu-Natal Planning and Development Act (Act No.9 of 1997)
- IV. KwaZulu-Natal Heritage Act (Act No. 4 of 2008)
- V. National Environmental Management: Biodiversity Act (Act 10 of 2004)
- VI. National Heritage Resources Act (Act No. 25 of 1999)



VII. National Development Plan (2010)

VIII. National Water Act (1998)

Note that other legislative requirements may pertain to the proposed development, but identification and interpretation of these is beyond the brief of this study. As such, the list provided below is not intended to be definitive or exhaustive, and serves to highlight key environmental legislation and obligations only.

### 5.1 The Constitution of South Africa Act, 1996 (Act No.108 of 1996)

The Constitution is the supreme law of South Africa, against which all other laws are measured; any laws in conflict with it are therefore invalid. It protects certain fundamental rights which are, however, not absolute, and may be limited 'in terms of law of general application to the extent that the limitation is reasonable and justifiable in an open and democratic society based on human dignity, equality and freedom' (Section 36).

#### The Environmental Clause

One such fundamental right in Section 24 provides the basic framework for all environmental policy and legislation, and it states:

"Everyone has the right –

- a) to an environment that is not harmful to their health or well-being; and
- b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –
  - i. Prevent pollution and ecological degradation;
  - ii. Promote conservation; and
  - iii. Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

It is however important to note that though an activity may be allowed in terms of an Act of Parliament or a permit issued under a statute, **it may still be declared unlawful if it is harmful to human health or well-being.**

#### Access to Information

Section 32 provides that everyone has the right of access to any information held by the State or another juristic person and that is required for the exercise or protection of any rights.

### **Just Administrative Action**

Section 33 of the Constitution entrenches the right to lawful, reasonable and procedurally fair administrative action, as well as written reasons for administrative actions that have adversely affected a person's right.

### **Enforcement of Rights**

In terms of Section 38, if any rights in the Bill of Rights have been infringed or threatened, a court may be approached for assistance by a person acting individually; on behalf of another who is incapacitated; on behalf of a group or class of persons; in the public's interest, or as an association in the interests of its members.

## **5.2 National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended**

The National Environmental Management Act (NEMA) provides the legislative framework for Integrated Environmental Management (IEM) in South Africa. Section 24 provides that all activities that may significantly affect the environment and require authorisation by law must be assessed prior to approval. NEMA also provides for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for coordinating environmental functions exercised by organs of the State and to provide for matters connected therewith. Section 2 of NEMA establishes a set of principles that apply to the activities of all organs of state that may significantly affect the environment.

These include the following:

- Development must be sustainable;
- Pollution must be avoided or minimised and remedied;
- Waste must be avoided or minimised, reused or recycled;
- Negative impacts must be minimised; and

- Responsibility for the environmental health and safety consequences of a policy, project, product or service exists throughout its life cycle.

These principles are taken into consideration when a government department exercises its powers, for example during the granting of permits and the enforcement of existing legislation or conditions of approval.

Section 28(1) of NEMA states that “every person who causes, has caused may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring”. If such pollution cannot be prevented, then appropriate measures must be taken to minimise or rectify such pollution. These measures may include:

- Assessing the impact on the environment;
- Informing and educating employees about the environmental risks of their work and ways of minimising these risks;
- Ceasing, modifying or controlling actions which cause pollution/degradation;
- Containing pollutants or preventing movement of pollutants;
- Eliminating the source of pollution; and
- Remedying the impacts of the pollution.

The authorities may direct an industry to rectify or remedy a potential or actual pollution problem. If such a directive is not complied with, the authorities may undertake the work and recover the costs from the responsible industry.

### 5.3 National Development Plan (2010)

President Jacob Zuma appointed the National Planning Commission (NPC) in May 2010 to draft a vision and National Development Plan (NDP) for consideration by Cabinet and the country. The NPC is an advisory body consisting of 26 experts drawn largely from outside government.

As a long-term strategic plan, it serves four broad objectives:

- Providing overarching goals for what we want to achieve by 2030;
- Building consensus on the key obstacles to us achieving these goals and what needs to be done to overcome those obstacles;
- Providing a shared long-term strategic framework within which more detailed planning can take place in order to advance the long-term goals set out in the NDP; and
- Creating a basis for making choices about how best to use limited resources.

The Plan aims to ensure that all South Africans attain a decent standard of living through the elimination of poverty and reduction of inequality. It therefore defines a desired destination and identifies the role that different sectors of society need to play in reaching that goal.

The intention of the National Development Plan (NDP) is to make the most of South African citizens - their goodwill, skills and resources. It aims to step away from Business as usual and to spark a cycle of more sustainable, low emission development that will expand opportunities, build capabilities and raise living standards.

National government aims to create five million jobs by 2020 (which is approximately three million more than the anticipated growth rate which has been extrapolated from the years 2002 to 2009). Related to this is the New Growth Path, which is targeting opportunities for 300 000 households in agricultural smallholder schemes and 145 000 jobs in agro-processing by 2020, while there is potential to upgrade conditions for 660 000 farm workers. In terms of the green the economy, there is the national goal to create 300 000 additional direct 'green jobs' by 2020.

#### **5.4 National Water Act 1998**

The water resources in South Africa are limited making them critically important for the sustainable economic and social development of the country. As the custodian of water resources, the Department of Water Affairs (DWA) is responsible for the protection of the health of aquatic ecosystems, thus ensuring the ability of these systems to support

utilisation for these systems to support utilisation for the benefits of current and future generations.

## 6 Description of Environmental Issues and Potential Impacts

The construction of the causeways and road will have a negative impacts on the river during construction, however, it is anticipated that the stream bed and flow will recover from the stresses caused during the construction phase. The implementers of the project have the mandate to ensure that the proposed development will have the least possible negative impact on and interference with natural surroundings through implementation of mitigation measures.

The table below outlines the listed activities and description of the project activities that trigger:

**Indicate the number and date of the relevant notice:      Activity No (s) (in terms of the relevant or notice) :      Describe each listed activity as per the project description (and not as per wording of the relevant Government Notice)<sup>1</sup>:**

NATIONAL ENVIRONMENTAL MANAGEMENT ACT REGULATIONS		PROJECT DESCRIPTION
GNR 983: Listing Notice 1 (December 2014)	Activity no: 19	Construction activities will include excavation and infilling of material from and into the river located on site. It is estimated that the material will be in excess of 5 cubic metres.
NATIONAL WATER USE		PROJECT DESCRIPTION
Section 21 Water uses requiring Authorization	S21 (c)	The proposed development may trigger this activity as it will involve the installation of culverts which will cause the impeding and diverting of the water flow.
Section 21 Water uses requiring Authorization	S21 (i)	The installation of the culverts will cause a disturbance of the stream bed, triggering this activity.

The risks associated with biodiversity such as soil erosion, loss of natural habitats will be evaluated and mitigation measures will be taken. These will be classified as direct, indirect

or cumulative impacts depending on the nature, extent and forecasted stage of occurrence of impact.

### 6.1 Environmental Impact Assessment and Public Participation

As the appointed EAP for the proposed project, Nzingwe Consultancy conducted a site visit on the **10<sup>th</sup> of September 2015**. This was to assess the receiving environment in order to accurately predict impacts which may be associated with the proposed project. This included taking photos on and around the site. Noticeboards were also posted on site on the **10<sup>th</sup> of September 2015** during the site visit conducted.

Notification of the proposed project and application for environmental authorization will be published in the Zululand Eyethu inviting Interested and Affected Parties (I&APs) to register. A community meeting will be conducted with the representatives of the different businesses and facilities located around the site. The members present will be notified of the proposed development and their right to participate and contribute to the decision making process. They will also be informed on the Environmental Impact Assessment Process which will be explained to them. This will include meeting with the person who owns the property on which proposed causeways will be constructed. The PPP will be completed prior to the submission of the final EMP to DEDTEA.

#### 6.1.1 List of all Interested and Affected Parties (I&APs) identified

NAME OF DEPARTMENT	CONTACT PERSON	ADDRESS
Ezemvelo KZN Wildlife	Mr D. Wieners	EKZN Wildlife Head Integrated Environmental Planning P.O Box 13053 Cascade 3202 Tell:033 845 1346
Department of Water Affairs	Ms. T. Ndou	P.O Box 1018 Durban 4000 Tell: 031 336 2809
Amafa aKwaZulu Natali	Bernadet Pawandiwa	P.O. BOX 2685 PIETERMARITZBURG 3200 Tel: 033 394 6543

## 6.2 Assessment and Ranking of Impacts

Rating	Definition of Rating	Score
<b>Extent</b> – <i>The area over which the impact is experienced.</i>		
Local	Impact confined to project area or part of the project area.	1
Regional	Impact on region	2
National/international	Impact national and or beyond.	3
<b>Intensity</b> – <i>The magnitude of the impact in relation to sensitivity of the receiving environment, taking into account the degree to which the impact may cause irreplaceable loss of resources.</i>		
Low	Impact is site-specific with negligible alteration of the wider natural and or social functions and processes.	1
Medium	Impact is site-specific and wider natural and or social functions and processes continue albeit in a modified way.	2
High	Impact is site-specific and wider natural and or social functions and processes are severely altered.	3
<b>Duration</b> – <i>The period over which the impact will be experienced and its reversibility.</i>		
Short-term	Impact experienced for up to 2 years	1
Medium-term	Impact experienced for a period between 2 and 15years	2
Long-term	Impact experienced for a period longer than 15years.	3

Scoring from the 3 categories will be totalled together to determine the overall rating of the impacts

<b>Combined score</b>	3 - 4	5	6	7	8-9
<b>Combined consequence</b>	Very low	Low	Medium	High	Very high

Probability of the impact is determined using the following criteria:

<b>Probability</b> – <i>the likelihood of the impact occurring</i>	
Improbable	< 40% chance of the impact occurring
Possible	40% - 70% chance of the impact occurring
Probable	>70% - 90% chance of the impact occurring

Definite	>90% chance of the impact occurring
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Significance of the impacts is determined using the combination of the consequence rating and probability of the impact occurring. This is indicated in the table below.

Significance Rating	Possible Impacts Combination		
	Consequence	&	Probability
Insignificant	Very low	&	Possible
	Very low	&	Improbable
Very low	Very low	&	Definite
	Very low	&	Probable
	Low	&	Possible
	Low	&	Improbable
Low	Low	&	Definite
	Low	&	Probable
	Medium	&	Possible
	Medium	&	Improbable
Medium	Medium	&	Definite
	Medium	&	Probable
	High	&	Possible
	High	&	Improbable
High	High	&	Definite
	High	&	Probable
	Very high	&	Possible
	Very high	&	Improbable
Very high	Very High	&	Definite
	Very High	&	Probable



## 6.3 Anticipated Impacts

### 6.3.1 Vegetation removal

As there is not existing road on the site, a road must be established which will include removal of vegetation dominated by acacia plant species. Vegetation removal will mainly be for the work space. Although no formal road exists on the site, there is a track developed through regular use for vehicular access. Vegetation has already been removed from the road footprint with vegetation around the route being somewhat intact.

Construction of the causeway structures will also necessitate the removal of vegetation for establishment of working space.

### 6.3.2 Soil Erosion

Vegetation holds the soil in place and reduces the speed of runoff. Removal of vegetation will therefore expose the soil to erosion. Soil on site is sandy and sandy soils are easily erodible.

Excavation work to be done will further loosen the soil making it more prone to erosion. Stockpiling of materials within close proximity of the stream or in stormwater pathways will also contribute to increased erosion on site.

### 6.3.3 Impedance and Diversion of Flow

The proposed development will include the construction of causeways. This will necessitate temporary diversion of stream flow. This is to create dry working space for establishment of causeway foundation and construction of the rest of the causeway structure.

Diversion will mainly be done through opening a trench that goes around the working area channelling the flow to downstream of the working area.

Diversion of flow will be temporary with flow to be channelled back to the normal path once construction has been completed.

### 6.3.4 Pollution

Pollution from the proposed development will mainly be general waste. This will include rubble and waste from food packages which may be littered by the construction workers.

Cement bags and any material contaminated with oil, grease, diesel or petrol will be regarded as hazardous waste and may form part of the waste produced during the construction phase.

Water pollution may occur from dumping of waste within the streams where construction works will be done.

Air pollution will also occur on a local scale as dust will be liberated during the earthworks. Minimal emissions are expected from vehicles and machinery provided that they are serviced as should be and operated correctly.

### **6.3.5 Water Contamination**

With the use of substances such as fuel, oil and cement on the site comes the risk of water contamination. Where such substances are spilled or leak, it may lead to surface and or ground water contamination. Spilled hazardous substances may be transported by run-off into the surrounding environment including the streams.

### **6.3.6 Socio-Economic Impacts**

Local community members will gain temporary employment during the construction phase of the proposed development. Through such employment, income can be earned which will provide temporary financial relief for the community. Local shop owners and any other traders may also stand to benefit from the proposed development during the construction phase as there will be a high influx of people into the area during this period.

During the operational phase, community to different destinations will be less of a challenge as there will be an easily accessible road that is safe to use during all weather conditions. Parents will also have relief from having to worry about their children making it safely to school due to the conditions of the road this being especially the case for the parents whose children travel by foot when going to school or visiting family members.

### **6.3.7 Safety Aspects**

The proposed construction will include use of machinery, vehicles as well as small equipment. These will pose safety risks to the workers whether a worker may get injured while using machinery, equipment or through an accident with one of the vehicles.

Community members may also be at risk as a result of the movement of vehicles and machinery to and from the site with children to be at the highest risk.

### 6.3.8 Summary of Impacts

Ecological Impacts	Nature	Extent	Duration	Significance before Mitigation	Proposed mitigation	Significance after mitigation
Vegetation Removal	Negative	Local	Short-term	Very Low	<ul style="list-style-type: none"> <li>Removal of vegetation must be limited to the necessary area.</li> <li>Access to site for vehicles and machinery must be limited to the approved access.</li> <li>All areas disturbed must be rehabilitated post-construction.</li> </ul>	Very Low
Soil Erosion	Negative	Local	Short-term	Low	<ul style="list-style-type: none"> <li>Remove and stockpile topsoil prior to the commencement of construction.</li> <li>Where necessary, divert stormwater away from erosion sensitive areas.</li> <li>Do not position stockpiles in run-off pathways.</li> </ul>	Low
Impedence and diversion of flow	Negative	Local	Short-term	Very Low	<ul style="list-style-type: none"> <li>Return flow to its natural path.</li> <li>Decommission used diversion structure.</li> </ul>	Very Low
Pollution	Negative	Local	Short-term	Insignificant	<ul style="list-style-type: none"> <li>Provide waste bins for waste collection.</li> <li>Clean site on a daily basis.</li> <li>Regularly dispose of waste and permitted waste dumping area.</li> </ul>	Insignificant
Water Contamination	Negative	Local	Short-term	Insignificant	<ul style="list-style-type: none"> <li>Avoid leakage and spillage of hazardous substances.</li> <li>Use mixing trays for mixing concrete.</li> <li>Place containers of</li> </ul>	Insignificant

					hazardous substances on an impermeable liner and not on bare soil.	
Socio-economic	Positive	Local	Short-term	Medium	<ul style="list-style-type: none"> <li>• Employ local labour as far as possible during construction.</li> <li>• Workers must be trained with skills they can use for future job applications.</li> </ul>	Medium
Safety Aspects	Negative	Local	Long-Term	Low	<ul style="list-style-type: none"> <li>• Adhere to speed restriction,</li> <li>• Provide workers with PPE and</li> <li>• Conduct health and safety inductions.</li> <li>• Promote awareness in the community.</li> </ul>	Very Low

Minimal impacts are anticipated for the operational phase of the proposed development especially where the site is sufficiently rehabilitated post construction. Once construction has been completed, the Municipality will be responsible for the maintenance of the causeways and road.

## 7 Monitoring Recommendations

A site specific environmental management programme has been compiled as part of the EIA Process. Once this EMPr has been approved by the DEDTEA, it must be adopted for implementation during the different phases of the proposed development.

An Environmental Control Officer (ECO) must be appointed to monitor that the provisions made within the EMPr are implemented on site and conditions of the Environmental Authorization are adhered with.

Such ECO must visit the construction site at least twice a month to audit the Contractor's compliance and compile an audit report for every audit conducted.

A pre-construction meeting must be held with the ECO, Engineer and Contractor to familiarise these members with each other and for the ECO to conduct an induction for the Contractor or Contractor's representative.

Photographs of the site must be taken before, during and after the construction phase. Photographs taken during the construction phase must form part of the audit reports to be submitted by the ECO.

## **8 Conclusion**

In line with the requirements of the NEMA EIA Regulations, this draft Basic Assessment Report has provided a brief description of the project and its associated activities, of the pre-development environmental specifically in terms of the biophysical and socio-economic environment of the study area. Basic Assessment Report also shed clarity to the proposed development for the Department to consider all the information that the Basic Assessment Report provides in order to make a decision based on what has been included in the report. This draft basic assessment report intends to facilitate informed and environmentally sound decision making and it also intends to play a role as an effective tool for decision making. The information provided above contains predicted and evaluated impacts on not only the environment, but also socio-economic conditions as well as cultural heritage.

The proposed development is seen as a necessary amenity that will be a benefit to the affected community. It is therefore the view of the EAP that this development should be authorized as there are no significant impacts anticipated to occur as a result of this development. With the implementation of the proposed mitigation measures, impacts can be reduced to acceptable levels where the ecosystem can continue to maintain its function.

**APPENDIX A: LOCALITY MAP**

**LOCALITY MAP**

**APPENDIX B: PHOTOGRAPHS**

## PHOTOS TAKEN ON SITE

### APPENDIX C: FACILITY ILLUSTRATIONS

**FACILITY ILLUSTRATIONS/  
DRAWINGS**

**APPENDIX D: Specialist Report**



- A WETLAND DELINEATION ASSESSMENT WILL BE CONDUCTED BY SUSAN CARTER-BROWN FROM NATURE STAMP
- CONTACT DETAIL: TEL- 033 343 2049

## APPENDIX E: PUBLIC PARTICIPATION

# **PUBLIC PARTICIPATION**

- **NEWSPAPER ADVERTS**
- **NOTICE BOARDS**
- **MEETINGS WILL BE CONDUCTED AND INCLUDED AS PART OF THE FINAL BASIC ASSESSMENT REPORT**

## **APPENDIX F: ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)**

# ENVIRONMENTAL MANAGEMENT PROGRAMME

## APPENDIX G: DETAILS OF EAP AND EXPERTISE

## DETAILS OF EAP AND EXPERTISE

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